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Comparative Study of the Impact of Compliance with Corporate Governance Regulations & Internal Governance Mechanisms on Financial Performance of Listed Firms in Africa

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PhD Thesis

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Comparative Study of the Impact of Compliance with Corporate Governance Regulations & Internal Governance Mechanisms on Financial Performance of Listed Firms in Africa

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ABSTRACT

This thesis examines and compares the impact of internally generated alternative corporate governance structures and compliance with country-level corporate governance regulations on financial performance of listed firms in South Africa and Nigeria. Firm-level data for the study was collected manually and triangulated with Datastream dataset for 100 listed firms for the period 2010–2014 (500 firm-years) in South Africa and 80 listed firms for the period 2011–2015 (400 firm-years) in Nigeria. Adopting a multi-theoretical approach and more importantly New Institutional Economics (NIE) theory, this study shows that cultural, contextual and institutional similarities and differences in corporate governance mechanisms across different countries impact differently on firm-level behaviour, which affects firm financial performance differently.

Empirically, the thesis shows there is a statistically significant positive effect of compliance with Nigerian and South African corporate governance code (compliance index model) on firm accounting performance (ROCE). This implies that firms that comply with corporate governance regulations in both countries benefit from increasing accounting returns more than firms that do not. However, results based on market performance (Q-ratio) show that compliant firms with King III corporate governance guidelines in South Africa are associated with decreasing market valuation (Q-ratio), whereas firms compliant with Nigeria SEC 2011 corporate governance regulations are associated with increasing market valuation (Q-ratio).

The alternative internal corporate governance mechanisms (variables in the equilibrium variable models) show similar and consistent mixed results compared to those reported by previous studies. Specifically, in South Africa, excluding board size which showed consistent negative statistically significant coefficients across both performance measures, the rest of the internal mechanisms are either statistically significant with one performance measure but insignificant with the other performance measure or significant with both measures but with contradictory signs of coefficients. Similarly, in Nigeria, out of the 14 firm-level internal corporate governance structures, six showed insignificant results irrespective of the performance measure, whereas six showed significant results with one performance measure and insignificant results with the other. Only gender diversity and ethnic diversity showed consistent statistically significant coefficients across both firm financial performance proxies.

The study contributes to corporate governance literature in many ways. First it shows the level of maturity in governance institutions, in addition to normative rules and informal norms across countries, has a significant bearing on firm-level governance practices. More so, historical and contextual path dependence has produced a diversity of firm-level and country-level specific internal CG structures that may work well within an institutional environment in which they have evolved but may not work in others. The resulting consequence is that in countries with developed or more mature governance institutions (e.g. South Africa), stock markets undervalue firms with high compliance with normative governance rules, whereas in countries with emerging/growing governance institutions (e.g. Nigeria), stock markets highly value firms' compliance with normative governance guidelines. Furthermore, the impact of compliance with normative CG guidelines on firm accounting performance in countries with mature governance institutions (South Africa) is similar to that with emerging governance institutions (Nigeria). More so, despite institutional voids, firms in African markets are committed in improving governance institutions by adopting recommended good CG practices implemented by regulatory authorities. Hence emerging African economies are adopting institutional isomorphic practices in governance compliance. Specifically, firms in these markets are transmitting good governance institutions to emerging economies by improving on their CG practices.

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KEY ABBREVIATIONS

2SLS – TWO-STAGE LEAST SQUARE

BOD – BOARD OF DIRECTORS

CG – CORPORATE GOVERNANCE

CGI – CORPORATE GOVERNANCE INDEX

GDP – GROSS DOMESTIC PRODUCT

GMM – GENERALISED METHOD OF MOMENTS

IVM – INSTRUMENTAL VARIABLE MODEL

JSE – JOHANNESBURG STOCK EXCHANGE

LDC – LESS-DEVELOPED COUNTRIES

NICGI – NIGERIA CORPORATE GOVERNANCE INDEX

NIE – NEW INSTITUTIONAL ECONOMICS

NSX – NIGERIA STOCK EXCHANGE

OLS – ORDINARY LEAST SQUARE

RDT – RESOURCE DEPENDENCY THEORY

SA – SOUTH AFRICA

SACGI – SOUTH AFRICA CORPORATE GOVERNANCE INDEX

SEC – SECURITIES AND EXCHANGE COMMISSION

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CHAPTER 1

1.0 BACKGROUND, MOTIVATION AND RESEARCH QUESTIONS

1.1 Introduction

This thesis examines and compares the impact of compliance with institutionalised country-level corporate governance (CG) provisions and alternative internal CG mechanisms on firm financial performance in a multi-country context in Africa. Drawing from a multi-theoretic framework, and specifically from a New Institutional Economics (NIE) framework, the study argues that CG rules and requirements in emerging economies are embedded in the larger institutional, political, historical and legal frameworks (Adegbite, 2015, Adegbite et al., 2012, Adegbite and Nakajima, 2012, Osemeke and Adegbite, 2016). Consequently, effective adoption of internal CG structures and practices and compliance with country-level CG provisions are contingent on the institutional environment in which firms and their stakeholders operate. Following from this theoretical background, this thesis focuses to investigate and compare the impact of internally generated alternative corporate governance structures and compliance with CG provisions on performance of listed firms in South Africa and Nigeria. Within this, three sub-objectives/questions are developed. First, using a compliance index model equation, the study specifically investigates and compares if firm-level compliance with institutionalised country-level corporate governance provisions in Nigeria (as measured by NICGI, Shareholder–NICGI and Stakeholder–NICGI) and South Africa (SACGI, Shareholder–SACGI and Stakeholder–SACGI) impacts on firm financial performance across Nigeria and South Africa (sub-research question one). On the other hand, using the equilibrium variable model, the study further evaluates and compares the effect of 14 internally generated alternative firm-level corporate governance mechanisms (measured by, proportion of NEDs, proportion of EDs, proportion of independent NEDs, CEO/Chairman role separation, board size, board gender diversity, frequency of board meetings, board busyness, board ethnic diversity, board interlocks, gearing, director shareholding, institutional shareholding and audit committee independence) on firm financial performance of listed firms in Nigeria and South Africa (sub-research question two).

Finally, the study examines and compares whether firms' choice of individual internal CG structures as measured by the *equilibrium variable model* is associated with increase in firm financial performance rather than with firm-level compliance with country-level CG provisions as measured by *the compliance index model* in South Africa and Nigeria (sub-research question three).

Thus, this chapter provides an overview of the motivations of the study. The chapter is organised as follows. The following section (1.2) provides the background of the study, the context of the thesis and reasons why the two selected African countries (Nigeria and South Africa) are relevant for the study. Section (1.3) presents the motivation of the study alongside the problem statement and research gaps. Section 1.4 outlines the thesis research questions. Section 1.5 summarises the chapter and section 1.6 presents the organisation of the thesis.

1.2 Background of Corporate Governance in Africa

For the last two decades, especially after the Asian financial crisis in the 1990s coupled with the recent global financial crisis of 2007, there has been a surge in corporate governance reforms within many emerging economies. The Asian financial crisis of the late 1990s brought to light extensive inadequacies in corporate governance (hereafter referred to as CG) and the oversight role of internal CG mechanisms, especially the board of directors. In fact, the crisis showed gross inability of regulatory and supervisory bodies to control and oversee financial institutions in emerging economies (Rwegasira, 2000) and led to CG reforms in many emerging economies.

This phenomenon became evident in the number of national corporate governance reports that have been produced in many African countries over the years (Rossouw, 2005). Good CG has been articulated as a prerequisite for development by many African governments, e.g. Kenya, Cameroon, Nigeria, Zambia and a host of other African countries. Klapper and Love (2004) indicated that there are extensive differences in organisation-level corporate governance across countries. Using firm-level data on corporate governance ranking across 14 emerging markets, with South Africa included, the study attributed the differences to the different CG systems within countries (see table 3 in Chapter 3 for a summary of CG provisions in Nigeria and South Africa). The study also shows that, on average, organisational-level corporate governance is weak in countries which have weaker legal systems (Klapper and Love, 2004). In addition,

superior corporate governance standards were seen to be highly correlated with better market valuation and operating performance (Okeahalam, 2004, Klapper and Love, 2004). In the same line of research, López de Silanes et al. (1998) conducted a comparative examination of good governance in a number of countries including Nigeria, South Africa, Zimbabwe and Kenya. Their results indicate that, in relation to shareholder rights (i.e. a measure of how strongly local legal structures protect and favour the interest of shareholders, e.g. one-share-one-vote rules), South Africa scored five points, which was above the sample average of four for countries with English-law/common law origin (López de Silanes et al., 1998). The other African countries with both civil and common law origin in the sample had a score of three (López de Silanes et al., 1998). However, in relation to creditor rights (i.e. a measure of how strongly local legal structures protect creditors, e.g. the right to repossess and then keep or liquidate collateral of a firm in case of default), within the whole sample of 49 countries around the world, all African countries in the sample scored four, which was higher than the average of the sample (3.11), with the exception of South Africa, which had a score of three (López de Silanes et al., 1998). With regard to English origin group or common law group, the average score was (6.46), but all the African countries scored below average, with Kenya scoring the highest (5.42), followed by South Africa (4.42), Zimbabwe (3.68) and Nigeria (2.73) respectively. The preceding descriptive statistics from prior studies therefore suggest that, though some African economies have advanced in relation to a few 'good' corporate governance practices, these economies at an aggregate level are very lacking with respect to what is considered 'good' corporate governance.

It has also been argued within the extant literature on corporate governance that the size of corporate boards impacts on firm performance (Pfeffer, 1972, Pearce and Zahra, 1992, Wagner III et al., 1998, Kiel and Nicholson, 2003, Phan et al., 2003, Mangena and Tauringana, 2006, Dahya and McConnell, 2007, Jackling and Johl, 2009). In fact, data from varied sources indicates that the average size of boards of firms in Africa ranges from four in South Africa to 12 in Botswana and Namibia (Okeahalam, 2004). Some countries like Mauritius and Nigeria had an average board size of ten, Zimbabwe had nine, Ivory Coast, Kenya and Zambia had eight, and Ghana had seven (Okeahalam, 2004). However, most of the studies above used subjective corporate governance ratings such as the Credit Lyonnais Securities Asia (CLSA) report. A major problem with using subjective CG rating is that they are based entirely on the analysts' perception of good CG rather than examination of annual reports of listed firms. In addition, as Hassan and Marston (2010, p.13) noted, subjective analysts' perception ratings

turn out to have a favourable bias towards larger firms, which may bring into question the objectivity of the views of the analysts, given that no one can know their incentives to report their ratings and biases that might have influenced their judgements (Hassan and Marston, 2010). In addition, prior studies which have used CLSA ranking are less representative of the population. For example, studies based on the CLSA 2000 ratings included only nine of the largest South Africa (SA) firms (Ntim, 2013a). Thus, significant sample selection bias based on CLSA ratings may pose serious econometric problems in associating CG and firm performance.

Corporate governance in Africa has been under-researched as compared to many Western economies, and comparative studies of different CG systems and institutional settings are very few. This research therefore is timely as it is designed to examine internal CG mechanisms in Nigeria and South Africa, which are the two most advanced economies in Africa (see their historical development of CG in sections 3.3 and 3.4). South Africa has the most developed capital market with the highest number of listed firms and is the economic powerhouse of the Southern Africa economic area. Nigeria is the most populous country in Africa with the highest number of listed companies in West Africa as well as the economic powerhouse of West African countries (detailed discussions of the various countries are presented in 3.3 and 3.4). Nigeria has the largest economy in Africa with an estimated nominal GDP of $568.5 billion, exceeding South Africa's $349.8 billion as of 2014 (Barungi, 2014). Comparing the GDP with the total GDP of $1.712 trillion for sub-Saharan Africa, Nigeria's GDP represents 33% while South Africa has 20%, and both countries generate 53% of the total GDP for sub-Saharan Africa. More so, Nigeria and South Africa get most of their economic income from mining. While Nigeria is seen to have the biggest economy in Africa, South Africa is considered the 'financial hub' of Africa as a result of attracting the highest inflow of foreign direct investments (FDI). In 2013, FDI inflow to South Africa relative to FDI inflow to Africa as whole was at 14% ($8.23 billion), while Nigeria had 10% ($5.6 billion).

The two countries have been chosen owing to some unique similarities but importantly also differences in their respective corporate governance architecture which have been shaped by international pressures as well as local realities of conducting business in these economies. Both Nigeria and South Africa developed their CG codes from international CG benchmarks, especially the UK Cadbury 1992, though the two countries have developed CG codes at different times. Thus, it is expected that firms in both countries show some differences in levels

of maturity and selection of internal corporate governance mechanisms. For example, the SA King report has emerged from the development of King I of 1994, which was developed extensively from the provisions of the UK Cadbury report of 1992, centred on shareholder-focused CG regime. This was followed by King II of 2002 to the current 2009 King III, with the latter operating under an affirmative stakeholder CG regime (Ntim, 2011, Ntim, 2013c, Ntim et al., 2012, Ntim and Soobaroyen, 2013a). Nigeria had its first corporate governance code in 2003 (Adegbite, 2015, Adegbite et al., 2012, Adegbite and Nakajima, 2012, Osemeke and Adegbite, 2016), which was a year after the King II of South Africa; however, Nigeria's second CG report came into effect in 2011, with some of its provisions similar to those of the King II CG but differs significantly from the King III (see table 3 in Chapter 3, column 2 and 3). Owing to these differences as well as similarities in the corporate governance architecture in the two countries, there are extensive differences in organisational-level corporate governance across both countries. These differences in organisational-level corporate governance have different effects on firm-level financial performance. More so, both countries have developed their corporate governance codes to meet local and socio-economic realities of doing business in the respective countries. For example, the King CG codes in South Africa have provisions aimed at addressing inequities resulting from the aftermath of apartheid, while the Nigeria CG code has provisions which are aimed at addressing the problems created during the military rule (Okike, 2007, Okpara, 2011), which discouraged foreign investors from investing in Nigeria. Evidently, while South Africa has developed governance institutions which are arguably more mature within developing markets in Africa, Nigeria offers a context where governance institutions are still developing. Hence these differences in the development of governance institutions between both countries offer an interesting context to examine and compare firm-level adaptation to normative country-level governance guidelines and how such practices impact on firm financial performance over time.

More so, despite these normative guidelines to encourage good corporate governance practices in both countries, like many emerging economies, both countries are characterised by high levels of income inequality, unemployment and poverty. In addition, both countries have very strong informal institutions which may limit or encourage the adoption of normative governance guidelines. While South Africa is seen as the citadel of development of good governance practices which reflect local realities of doing business in emerging economies (Ntim, 2013c, Ntim et al., 2010, Ntim et al., 2012), like many African economies, it still suffers from a tradition of corrupt practices (George et al., 2016, Rispel et al., 2015, Vaughn and Ryan,

2006). Similarly, Nigeria is characterised by rampant and enshrined corruption practices, which makes the enforcement of normative governance guidelines ineffective (Adegbite, 2015, Adegbite et al., 2012, Adegbite and Nakajima, 2012, Osemeke and Adegbite, 2016). Drawing from these institutional contexts, this thesis argues that normative institutions can encourage good governance practices, but weak enforcement of formal guidelines (creating an institutional void) (Khanna et al., 2006) reinforces informal institutions, and hence both co-exist. These strong informal institutional practices such as corruption may work counter to governance guidelines aimed at promoting good CG practices. As such, both countries are exemplary of an institutional void and/or weak institutional environments prevalent within African economies and hence provide interesting contexts to compare firm-level governance behaviour and to decide whether these behaviours vis-à-vis recommended and adopted governance practices have similar impacts on firm performance across both countries.

The preceding discussion shows there is opportunity for comparing firm-level governance behaviour vis-à-vis country-level governance institutions and institutional constraints across both countries which will enhance understanding of CG in emerging African markets. Hence, investigating firm-level internal CG mechanisms as well as compliance with customised country-level CG provisions between Nigeria and South Africa and their bearing on financial performance offers an interesting context to compare results.

1.3 Problem Statement, Motivation, Research Gap and Contribution

A review of empirical research conducted in Africa on CG and performance nexus (see subsection 3.6 in Chapter 3) shows a dearth of comparative studies in this context. Prior studies in Africa have not yet provided a comprehensive and robust understanding of internal CG structures selected by firms from a multi-country perspective as well as the level at which these firms comply with local/institutional CG provisions and their bearing on firm financial performance. Therefore, the limitations of these empirical studies justify the need for this PhD research. In addition, the research fills the lacuna and contributes to CG literature as follows.

First, research investigating CG and firm performance has mostly concentrated on a specific country (see section 3.6). For example, in Nigeria, some scholars have investigated CG practices and the state of governance practices. To mention a few, Nakpodia et al. (2016) reported that, in the presence of an institutional void, elites can invent, circumvent and corrupt

institutions in Nigeria, which works counter to initiatives for good governance practices. Osemeke and Adegbite (2016) reported that the presence of conflict among the various codes of governance at national and industry level reduces firm compliance and makes enforcement ineffective, which impedes good corporate governance practices in Nigeria. Though these studies in Nigeria provide contextual knowledge of micro-level governance practices, they are generally based on interviews and description of stakeholder perceptions of governance practices. A recent study which includes Nigeria by Zattoni et al. (2017) examined board independence-performance nexus and suggests the association is contingent on specific national contexts. Similarly, authors like Ntim (2012a), Ntim (2013c), Ntim (2014) and Ntim et al. (2015b) have examined CG practices of South African firms and reported affirmative effect on firm performance. However, mostly single country studies which may affect generalisation of results across other African economies. In fact, these studies have not offered at macro level the state of CG compliance practices and internal governance mechanisms of firms over time and whether such macro-level practices impact on firm financial performance across different countries in Africa. This study builds on this prior research and fills the highlighted research lacuna by offering new evidence of comparative macro-level firm governance practices across more than one institutional context in Africa. To the best of my knowledge, the only comparative study in Africa was conducted by Kyereboah-Coleman (2008), but the study was limited in scope and sample size. Though this study was a major attempt to compare CG across countries, the study suffers from sample bias. For example, Nigeria, with more than 200 companies, has just 16 firms represented in the sample, while Ghana stock exchange, with fewer than 50 listings, has 22 firms within the sample. Further, the study was limited to few internal CG mechanisms in addition to oversight of compliance practices of firms within these economies. In addition, the period of data collection was before any corporate governance codes were instituted, apart from South Africa's 1994 King I report. Therefore, this thesis fills this gap by examining CG practices of firms after the implementation of CG codes across peculiar institutional contexts (South Africa and Nigeria) where governance institutions are likely to have achieved some level of maturity (2010–2015 is ideal). Moreover, Kyereboah-Coleman (2008) employed only OLS regressions, which does not adequately control for endogeneity. This study tests for presence and impact of endogeneity, which improves the robustness of findings and interpretation results. In addition, this study provides a response to the research questions as to how and to what extent internal governance structures chosen by firms operating in different institutional settings impact on firm financial performance, which Kyereboah-Coleman (2008) overlooks. Moreover, the choice of using two peculiar institutional

contexts in Africa responds to the recent call by Kumar and Zattoni (2015), who suggest the need for research on different geographies to help build understanding of maturation of corporate governance globally. Thus, as the field of CG is still emerging within an African context, coupled with the fact that many African economies have articulated CG as a prerequisite to attract FDI, to reduce institutional void and to enhance economic development (Rossouw, 2005,p.101), this study is timely as it advances and provides a comprehensive understanding and a comparative insight into the various CG practices in Nigeria and South Africa and their impact on financial outcomes of firms.

The study contributes in advancing CG literature in relation to CG compliance and its impact on firm performance. CG codes/regulations have been utilised as popular standards to encourage firms to increase accountability and transparency (Cuomo et al., 2016). Such regulations are expected to act as safeguards against managerial inefficiencies and misappropriation of firm resources, in addition to promoting and adapting to societal needs. It is unsurprising that firms in Africa and other emerging economies have embraced the implementation of CG regulations as a way of improving CG practices to attract cheaper capital and reassure investors of managerial commitment to maximise firm value (Fernandes and Ferreira, 2008). However, despite the proliferation of CG codes around the world, a recent review of empirical studies by Cuomo et al. (2016, p.235) shows the number of articles focused on comparisons of different national codes over time is limited. They attribute the lack of comparative studies on corporate governance compliance and firm performance impact to difficulties in data collection. Cuomo et al. (2016, p.235) show evidenced that only two cross-country comparative CG studies have been published on this area and are based on developed economies. To the best of my knowledge, there is no study which has examined the level of compliance with country-level governance regulations across more than one emerging economy, especially in Africa. This is an interesting gap to fill because, except for South Africa, which has had a CG code since 1994, most African countries including Nigeria developed a country-level CG code only after the year 2000. Therefore, this study provides timely evidence of compliance with different institutionalised country-level CG codes and their impact on firm performance over time comparatively in two less discussed contexts – Nigeria and South Africa. The study contends that, after more than a decade of implementing respective country-level CG codes, it is important to empirically verify if these country-specific codes are engaged with by firms and how such firm-level compliance impacts on financial performance.

In addition, a comparative study of the impact of individual internal corporate governance structures and firm compliance with country-level corporate governance code is deficient in Africa. Therefore, there is a need to investigate the validity of claims about impact of individual internal CG structures of firms (e.g. board size, composition, board interlock, proportion of NEDs) on firm performance and compare if internal corporate governance structures explain performance better than the compliance with CG provisions. In fact, an unanswered theoretical and an empirical question in CG research remains: Should firms choose governance structures as a bundle or as standalones? Do empirical results from the research show better performance is associated with firms implementing some individual internal CG structures (e.g. proportion of non-executive directors)? For example, if a firm's compliance with country-specific CG provisions shows a positive relationship with firm performance but, at the same time, some internal mechanism shows similar effect, it would be reasonable to infer that complying with provisions of a country's CG code may be costlier to firms. Hence, instead of complying with corporate governance provisions, firms may adopt specific CG structures as determined internally by the firm (e.g. CEO duality or higher proportion of non-executive directors). Therefore, by investigating the question as to whether individual internal CG structures of firms explain performance better than firm compliance with CG provisions, this study contributes immensely to extant literature on CG and firm performance nexus, especially in a comparative African context.

As noted earlier, the study employs New Institutional Economics (NIE) theory as a complementary theoretical angle to agency, stewardship and resource dependence theories. As will be discussed later, NIE helps explain contextual differences and similarities in CG mechanisms and CG codes operation in the two selected African countries. This enables an appreciation of the different CG regimes and historical development within the selected countries and how these various set-ups impact on firm-level governance behaviours. In so doing, the study tests the assumption that different combinations of country- and firm-level CG mechanisms can lead to similar firm performance outcomes as suggested by prior research (e.g. Aguilera and Jackson, 2010, Aoki and Jackson, 2008, Filatotchev et al., 2013).

More so, like most developing economies with Commonwealth heritage, CG internal systems and principles have mostly been borrowed from the UK (see their historical development of CG code in these countries in sections 3.3 and 3.4). This thus brings into question the applicability of some of these internal CG mechanisms and CG provisions implemented in

Nigeria and South Africa and how this impacts on firm performance in specific country contexts. More so, the relationship between internal CG mechanisms, CG compliance and firm performance can be expected to differ in what has been reported in prior country-specific studies. Thus, the study provides interesting contexts to compare results.

In addition, the Anglo-American model (discussed in 2.2) within which South Africa and Nigeria have developed their CG codes assumed that ownership structures of firms are relatively dispersed. However, African countries have been noted to have concentrated ownership structures (Ntim, 2012a, Ntim, 2013d, Ntim et al., 2014a, Ntim et al., 2010, Ntim et al., 2015b, Ogbechie, 2010, Okeahalam, 2004, Rwegasira, 2000, Sanda et al., 2005)). These studies thus suggest that the market for managerial labour and corporate control through which managers and non-performing organisations are to be disciplined may not be effective in African countries as compared to the UK and the US. In addition, many African countries are noted to have weak records of implementation and enforcement of governance regulations (Adegbite, 2015, Adegbite et al., 2013, Adekoya, 2011, Nakpodia and Adegbite, 2017, Nakpodia et al., 2016, Ntim et al., 2015b, Ntim and Soobaroyen, 2013b, Okeahalam, 2004, Okike, 2007, Osemeke and Adegbite, 2016, Rossouw, 2005, Sanda et al., 2005, Uche et al., 2016). Therefore, it is questionable whether the UK regulatory style of 'comply or explain' operational in Nigeria and The Netherlands' style of 'apply or explain' operational in South Africa is effective and efficient in improving CG standards among listed firms in these African economies.

Furthermore, most studies in Africa have been conducted using a sample of non-financial firms (see subsection 3.6 and table 4 in Chapter 3) (e.g. see Ntim, 2013b, Ntim, 2015, Ntim et al., 2014a, Sanda et al., 2011, Sanda et al., 2005, Sanda et al., 2010, Zattoni et al., 2017). Our understanding of CG and firm performance in the financial sector in Africa is still limited. This study is particularly important to fill this gap in research as it covers a large sample of firms across both countries, including financial and non-financial firms. This will enable comparison between countries and within countries and increase the statistical significance and validity of the results, as well as provide strong evidence that enhances generalisation of results. Therefore, the study offers an opportunity to examine the effect of internal CG mechanisms, governance compliance and firm financial performance from a sample of both financial and non-financial firms within the same period in two different countries.

In addition, as will be discussed in section 2.3, most quantitative studies in CG have often looked at internal corporate governance mechanisms derived from agency theory internal board compositional constructs, such as proposition of NEDs, board leadership, board size (e.g. see Ntim, 2013b, Ntim, 2015, Ntim et al., 2014a, Sanda et al., 2011, Sanda et al., 2005, Sanda et al., 2010, Zattoni et al., 2017). This line of enquiry has also dominated CG research in Africa (see subsection 3.6). To the best of my knowledge, only Ntim et al. (2015b) and Ntim (2014) have incorporated resource dependency theory board compositional constructs such as board interlock and its impact on firm performance. This study provides a comprehensive representation by looking at 14 internal CG variables. Therefore, using 14 firm-level internal CG mechanisms from different theoretical angles enhances our understanding of the substitutability and complementary use of different CG mechanisms. In addition, the comparative approach adopted using a comprehensive number of internal CG mechanism enhances the theoretical basis for configuration approach in comparative studies.

More so, as has been highlighted as one of the problems in some of the empirical studies in Africa (see section 2.3.6), there are serious concerns that the existence of an endogenous relationship between variables can mix up empirical research outcomes (Ntim, 2014, Ntim et al., 2014a, Ntim et al., 2014b, Ntim et al., 2015b). This may also bring into question the reliability of the empirical outcomes of these prior studies in Africa. As noted by Cuomo et al. (2016, p.235), one of the reasons for inconclusive research findings in CG research to date is the lack of control for specific firm-level idiosyncrasies owing to the over-reliance on OLS regressions, which lack the ability to control for endogenous associations and selection bias. Cuomo et al. (2016, p.235) suggest that future studies should avoid such deficiencies. This study addresses these deficiencies and contributes immensely to CG scholarship by providing more robust results. Specifically, in addition to the traditional OLS approach, the study employs a pluralism of analytical methods including dynamic system Generalised Method of Moments (GMM) approach, a two-stage least square model and an instrumental variable model. This enhances reliability of the thesis research findings. More so, the study includes both market- and accounting-based performance variables. This ensured a test of robustness of results, which some previous studies in Africa have failed to provide.

1.4 Research Questions

Given the research gaps and contributions identified above, the thesis main research question (sub-section 1.4.1) and sub-research questions (subsection 1.4.1.1) are outlined as follows:

1.4.1 Main Research Question

How and in what ways do the choices of internal corporate governance mechanisms and compliance with corporate governance provisions affect firm financial performance of listed firms in Nigeria and South Africa?

1.4.1.1 Sub-research Questions

To address the main research question effectively, the following sub-research questions are examined:

- I.   How and in what ways does firm-level compliance with exogenously developed corporate governance provisions impact on firm financial performance in Nigeria and South Africa?
- II.   Do endogenously generated alternative firm-level internal corporate governance mechanisms affect firm financial performance in Nigeria and South Africa?
- III. Are firms' choices of individual internal CG structures as measured by the *equilibrium variable model* associated with better firm performance than firm-level compliance with CG provisions as measured by the *compliance index model*?

1.5 Summary of Chapter

This chapter has provided the contextual background of CG in Africa, covering antecedents of contextual, historical and economically important events that have shaped the development of CG in Africa. Further, the chapter highlights the focus and research contribution of the study. The thesis evidences that prior studies have been country-specific and limited in scope and robustness. Therefore, the thesis focuses on comparing the impact of different internal CG mechanisms and compliance with country-specific CG code in Africa's two biggest economies on firm financial performance. The thesis argues that both countries show some institutional similarities but stark differences in governance institutions. Thus, the study draws on these differences and similarities in institutional/context-specific CG practices to

provide a robust empirical analysis of the impact of internal CG structures and regulatory compliance on firm financial performance.

1.6 Organisation of Thesis

The thesis is divided into ten chapters including this chapter. The remaining nine chapters are organised as follows. Chapter 2 provides a critical review of global CG. Specifically, the chapter builds on extant literature to support the motivation of the thesis, contribution and the developed research question presented in Chapter 1. Chapter 3 discusses the contextual literature based on New Institutional Economics (NIE) and the development of CG codes in Nigeria and South Africa. The chapter draws on NIE to recapitulate similarities and differences between the governance institutions in both countries and justifies why both countries are selected to examine the main research question. The chapter ends with a summary of CG provisions in both countries and a discussion of key empirical research in Africa. In Chapter 4 hypotheses are developed to examine the research questions stated in Chapter 1. Chapter 5 explains the research methodology including research ontology, epistemology, data collection methods, sample and sources, variables discussion and analytical models. Chapter 6 presents the comparative descriptive statistics for firm- and country-level CG compliance with corporate governance codes and well as discussion of the sub-categories of governance compliance. Chapter 7 presents additional comparative descriptive statistics and correlation results for firm-level internal CG mechanisms, control and performance variables. Chapter 8 presents the main results based on the compliance index model (sub-research question 1) and equilibrium variable model (sub-research question 2) using OLS regression. Chapter 9 tests the main results based on a raft of sensitivity and robustness analysis. Specifically, the chapter examines whether the results presented in Chapter 8 are sensitive and robust to possible alternative explanations. Hence, the chapter uses alternative sensitivity and regression models, including a test of exogeneity using the Durbin–Wu–Hausman Exogeneity Test, Two Staged Least (2SLS)/Simultaneous Equation Model and Dynamic System Generalised Methods of Moments (GMM) Model. Finally, Chapter 10 presents a brief summary of results, but, more importantly, the chapter presents the contributions of the thesis, policy implications, limitations and direction for future research.

CHAPTER 2

2.0 THEORETICAL LITERATURE

2.1 Introduction

This chapter reviews the extant literature in corporate governance, within which the identified research gap (as in section 1.3) and research questions (presented in 1.4) are developed. The chapter begins with a wider debate surrounding the concept of corporate governance. Following from this and drawing from international governance literature, selected CG theoretical underpinnings guiding the research are discussed. These theoretical discussions provide a broader picture of international CG within which the African CG research has been developed and inform the focus of the thesis. The rest of the chapter is organised as follows. Section 2.2 offers debates surrounding CG with a working definition of corporate governance. Section 2.3 reviews the main theoretical CG models as developed within the international CG literature. Section 2.4 discusses the rationale for adopting a multi-theoretic framework. Finally, 2.5 summarises the chapter.

2.2 Defining Corporate Governance

Following the emergence of CG decades ago, there has been constant variation and discrepancy on what CG entails. In fact the scope of CG has been ever increasing in its content and context. Abor (2007) and Rwegasira (2000) argue that the scope of CG can be attributed to the different disciplines within social science (including economics, ethics, finance, accounting, law, management, organisational behaviour, and politics, among others), with no unanimously accepted definition for the term. As a consequence, there exist quite a number of definitions associated with CG.

Though there are varied definitions of CG, researchers have often categorised it under a shareholder or 'narrow' categorisation and a stakeholder or 'broad' categorisation. In fact, the shareholder or narrow definition of CG is generated from the extent to which a corporate governance system principally focuses on satisfying the parochial interests of fund providers or shareholders (e.g. Cadbury, 1992, Shleifer and Vishny, 1997). On the other hand, the stakeholder or 'broad' categorisation centres on meeting the broader interests of diverse societal stakeholder groups (e.g. Aguilera and Jackson, 2003, Denis and McConnell, 2003). These two categories imply different ways of understanding and justifying the central questions

regarding the purpose of the firm and its supplementary structure of corporate governance (Ayuso et al., 2007, Ayuso et al., 2014).

In fact, shareholder categorisation of CG can be traced back to the days of Adam Smith. Smith stated 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 co-partnery 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' (see Smith, 1776, paragraph V.1.107).

Following from Smith, in the traditional shareholder regime, corporations are legal instruments for shareholders' wealth maximisation (Shleifer and Vishny, 1997, p.797). In this view, CG is a '*system by which companies are directed and controlled*' (Cadbury, 1992,s.2.5). Similarly, Shleifer and Vishny (1997, p.797) define it to be '*... the ways in which suppliers of finance to firms assure themselves of getting a return on their investment*'. In this view, organisations are seen as extensions of the shareholders with the primary agenda of providing goods or services to consumers, mainly to maximise the wealth of equity holders. Still in a narrow view, many researchers argue CG as a way both to reduce agency costs and to reduce private benefits and pet projects for managers of firms. It is argued that this will lead to more effective and efficient investments, boosting growth and performance, and a way to protect investors from managerial expropriation, thus easing an organisation's access to external financing and enhancing valuation (Bruno and Claessens, 2007, Bruno and Claessens, 2010).

Explicitly from the preceding definitions, a firm first and foremost is accountable to shareholders. This means shareholders have the power to appoint and remove directors and top management if they don't work towards value maximisation. In so doing, shareholders make sure that the right internal governance mechanisms are in place to safeguard their interest. By the same reasoning, this view argues that shareholders have the power to remove board members and executive management from office in a general meeting if the interests of such board members and executive management are not in line with theirs. Following from Cadbury (1992), the board as a CG mechanism has the obligation to make sure that the firm is properly

governed so as to maximise shareholders' value. These tasks include but are not limited to setting the firm's strategic aims, appointing or removing the top management team, controlling and overseeing the management team and reporting to the shareholders of the firm on their stewardship.

From the preceding discussion, a 'narrow' definition of CG will entail a definition which is concerned with the interaction of key internal actors for the sole purpose of profit maximisation for the shareholders rather than trying to manage the expectations of varied stakeholders, e.g. customers, regulators, suppliers, governments, employees, creditors and local communities, among others.

However, from a broader perspective, CG is seen as '*the relationships among stakeholders in the process of decision making and control over firm resources*' (Aguilera and Jackson, 2003 , p.450). This definition goes beyond shareholder return maximisation. In fact, though there is emphasis upon shareholders' return, it also recognises the need for considering interests of a wider range of stakeholders. Similarly Huse (2007, p.15) further distinguished between the 'narrow' view of CG and the 'broader' view by defining CG as '*the interactions between various internal and external actors and the board in directing a firm for value creation.*' In a broader view, according to Monks and Minow (2008 p.12), '*Corporate governance involves the relationship among various participants, including the chief executive officer, management, shareholders and employees, in determining the direction and performance of corporations.*' These 'broader' definitions implicitly mean corporate governance goes beyond and above the immediate internal shareholder corporate systems to include external CG systems and other stakeholders.

Typically, as highlighted before, the internal corporate governance mechanisms will include the management, employees, shareholders and the board of directors, while the externally oriented corporate governance system includes regulators, suppliers, the labour and managerial control market, cultural, political, social and economic policies, creditors and others depending on the type of organisation and industry a firm operates in.

In summary, the major difference between a '*narrow*' or *shareholder* categorisation and a '*broad*' or *stakeholder* corporate governance regime can be seen explicitly in the orientation of each regime. In the shareholder regime of CG, the central concern of internal corporate

governance mechanisms is to create value for the shareholders, while stakeholder categorisation is geared towards creating value to benefit shareholders and other potential stakeholders.

The narrow or shareholder-oriented view of CG is dominant in Anglo-Saxon countries like the US and the UK. This view proliferated as the US was seen as the most powerful economy of the world – a 'citadel of capitalism' – and a role model for other countries to emulate (Turnbull, 1997, p.186). However, the Anglo-Saxon or shareholder-oriented CG model becomes less applicable when economic transactions are mediated by business-related associations, cultural significances, trade, institutional cultures, vocational, socio-political and social networks (Turnbull, 1997, p.186). These characteristics are more prominent in continental Europe (e.g. Germany and France) and some Asian and African economies. Therefore, it is common to see the stakeholder regime of CG within these countries and in some emerging economies where firms are not driven only by profit maximisation for shareholders but for the maximisation of expectations of multiple stakeholders. This is particularly relevant to this study. The context of countries studied in this thesis is, therefore, discussed in section 2.3.

Section 2.1 so far has provided debates on the meaning of CG and how different meanings have generated different types of CG regimes around the world. Thus, these meanings attached to CG have contributed in shaping the theoretical development and debates within CG. The next section and further discussion of respective CG regimes in the selected African countries will assist in the development of the research gaps and research questions (as presented in 1.3 and 1.4). The following section provides a detailed overview, discussion of CG theories and the key constructs within these theories. This discussion will enhance our understanding and appreciation of the shareholder and stakeholder regimes of CG (discussed in 2.1) further while identifying some emerging gaps in CG within which research gaps and questions discussed in sections 1.3 and 1.4 are developed.

2.3 Corporate Governance Theories

The majority of research in CG as discussed briefly above has been predominantly from a shareholder ownership perspective drawn from agency theory. In fact, agency theory has guided research in CG until recently when there has been a challenge on the extensive use of

agency theory to understand corporate governance constructs (Kumar and Zattoni, 2015). More so, overreliance on this theory has generated conflicting results in empirical research.

Specifically, this study gives attention to the three CG theories because, as the preceding discussion highlights, the extant literature in CG has largely been considered and investigated from an agency theory perspective (Huse, 2000, Minichilli et al., 2009, Stiles and Taylor, 2001)). In cases where other theories have been used, they have been investigated in isolation to each other (Nicholson and Kiel, 2007). Very few researchers have attempted to compare agency theory with other theoretical approaches – e.g. institutional theory (e.g. Judge and Zeithaml, 1992, Nicholson and Kiel, 2007, Zona and Zattoni, 2007) – or combine agency theory with other theoretical underpinnings, such as stewardship theory, stakeholder and resource dependence theories (Hillman and Dalziel, 2003, Nicholson and Kiel, 2007). Owing to the mixed findings from CG research, CG scholars have called for the need to employ varied theoretical angles other than agency theory to understand CG issues (Daily et al., 2003, McNulty et al., 2013, Nicholson and Kiel, 2007, Zona and Zattoni, 2007).

Indeed Nicholson and Kiel (2007) studied the relationship between board variables and firm performance within agency, stewardship and resource dependency theories. They argue that while each CG theory can explain a particular case, no single theory explains the universal pattern of results. Similarly Daily et al. (2003) and Jackling and Johl (2009) support the use of a multi-theoretic approach to understand CG issues as it enables the study to identify and to comprehend the interconnectedness of structures and mechanisms that potentially enhance firm performance and value creation. In fact since CG in emerging African economies is still very much embryonic (Young et al., 2008), using the three most dominant theoretical underpinnings will eliminate the assumption that a particular theory is relevant in the African context. This is because studies till date have not provided empirical evidence to support this assumption. Therefore, it is my belief that agency, stewardship and resource dependency theories are relevant theoretical starting points to understand CG mechanisms in Africa and their bearing on firm financial outcomes.

2.3.1 Agency Theory

The notion fundamental to agency theory is that managers who are entrusted by the owners to ensure an efficient use of their funds tend to be selfish opportunists who, if not monitored

effectively, will pursue self-interested goals at the expense of shareholders' wealth maximisation. Opportunistic and selfish behaviour of managers can be manifested through clear and tangible benefits such as perquisites (large offices, flying first class and luxurious cars) and in less identifiable motivations such as the pursuit of growth at the expense of profit maximisation (Nicholson and Kiel, 2007, Huse, 2007)). Therefore the information asymmetries that exist between knowledgeable managers and more distant and widely dispersed owners are expected to provide an avenue for this managerial opportunism, which the agents will act upon unless they are incentivised or monitored and controlled not to do so (Eisenhardt, 1989, Fama and Jensen, 1983, Jensen and Meckling, 1979a, Ross, 1973). Implicitly, there are gains to separating ownership and control of firms, without which the continuity of a firm is uncertain (Denis and McConnell, 2003). Thus the conflicts of interest between principals and agents on one hand, and on the other hand, the inability to write perfect contracts without incurring cost in monitoring managers reduces the value of the firm, *all things being equal* (Denis and McConnell, 2003). Indeed, these concepts form the foundation for research on corporate governance. In fact, the question as to how managers, shareholders, entrepreneurs minimise the loss of value as a result of the separation of ownership and control has driven the extensive literature that can be seen in CG.

Thus, agency theory has been employed as the most dominant theoretical lens to demonstrate how internal CG mechanisms could affect financial performance of firms. It has been employed extensively by scholars in finance (Huse, 2000, Huse, 2005, Huse, 2007, Jensen and Meckling, 1979a, Fama and Jensen, 1983), economics (Fama and Jensen, 1983, Ross, 1973) and organisational behaviour (Eisenhardt, 1989), and in other fields like sociology and politics. This theory dates back more than 200 years ago to the days of Adam Smith when the ownership and control of firms were separate (as they are today), with the possibility of conflict of interest between fund suppliers and the people entrusted to manage these funds. The problem of separation of ownership and control was later highlighted by Berle and Means (1932). According to Berle and Means (1932), firms whose ownership is dispersedly held in effect disenfranchise small, remote shareholders, leaving excessive power in the hands of savvy agents (managers) who could run the firms to suit their selfish interests (Miller and Sardais, 2011).

Following from this premise, in the wake of various financial crises from the 1960s to date, which were attributed to mismanagement of investors' funds, agency theory has been the most

dominant theoretical perspective applied in corporate governance (Miller and Sardais, 2011, Huse, 2007, Denis and McConnell, 2003, Daily et al., 2003, Jensen, 2000, Turnbull, 1997, Shleifer and Vishny, 1997, Fama and Jensen, 1983). From 1976 onwards, scholars (e.g. Jensen and Meckling, 1976, Jensen and Meckling, 1979a, Jensen and Meckling, 1979b) offered agency theory as a description of how public enterprises could exist, given the assumption that managers of firms are self-interested, and thus a context in which these agents do not bear the full wealth effects of the decisions they take. Hence, given that managers of firms are responsible for leading the business in the interest of the shareholders, and given that managers' own self-interests will never be in line completely with the interests of the principals, managers of firms will sometimes experience scenarios where conflicts of interest will arise when conducting business on behalf of the owners (Bryant and Davis, 2012, Miller and Sardais, 2011). By inference, managers are more likely to act in the interests of the firm when their interests are aligned with those of the shareholders or when their behaviours are controlled and monitored against opportunistic behaviour. In the same reasoning, firms should either increase incentive mechanisms that align the interests of principals and agents (Fama and Jensen, 1983, Fama, 1980) or increase control and monitoring of agents by the principal's delegates (e.g. board of directors) (Bryant and Davis, 2012).

Hence, according to agency theory, the administrative function of controlling and monitoring management decisions, behaviour and actions is the primary function of internal CG mechanisms, particularly the board. As a result, agency theory has been one of the dominant theories used to understand the role of boards. Agency theorists suggest that the board exists principally to hire, remove, monitor and compensate management, with the aim of maximising value for the shareholders (Denis and McConnell, 2003, Daily et al., 2003, Hermalin and Weisbach, 2001). The implication for CG is to provide efficient and effective control and monitoring mechanisms to protect shareholders from management misappropriation (Nicholson and Kiel, 2007, Huse, 2007). Another form in which agency cost can be reduced is through executive compensation concerned with the degree to which executive managers are compensated in ways that align their interests with those of shareholders (Denis and McConnell, 2003, Daily et al., 2003, Hermalin and Weisbach, 2001). It is reasonable to infer from the preceding discussion that greater overlap between ownership and control of companies should lead to a reduction in conflicts of interest between principals and agents and, therefore, to higher firm value. As a result, ownership by an organisation's management can

assist to better align the interest of managers with those of equity holders (Denis and McConnell, 2003, Daily et al., 2003, Fama, 1980)).

Agency theory proposed curbing the opportunistic behaviour of managers through the composition of board of directors as an internal CG mechanism. According to agency theory, board of directors as an internal governance structure should be made up of more non-executive directors for effective control. This will lead to board independence in monitoring and passing fair and unbiased judgement with best interest of shareholders, which enhances firm performance. In addition to the composition of boards, agency theory argues that, in relation to board leadership, there should be a separation of positions of CEO and board chairperson as this reduces the concentration of power on one individual and thus greatly reduces the influence of a single individual on management and board. In summary, agency theory holds implicitly several premises about human behaviour and the goals of an organisation's ownership including:

First, shareholder wealth maximisation should be the goal of a firm. Second, the BOD is an appropriate internal governance mechanism used by the principal to monitor managers. Third, top management and board actions and interactions are predominantly products of economic forces. Fourth, the board of director's acts as a single unitary actor. Fifth, executive compensation through ownership incentives helps to curb agency cost. Furthermore, board composition should include more non-executive directors (NEDs) than executive directors. Finally, a separation of CEO and chairman position (Bryant and Davis, 2012). However, in cases where the internal mechanisms fail to control agency cost, external mechanism such as market for ownership and control, legal and regulatory mechanisms may come in to play.

The theoretical claims of agency theory have been investigated extensively in developed economies, LDCs and most recently African economies (see further discussions in section 3.6 and column 4 in table 4, in Chapter 3). It is suggested that internal and external CG mechanisms can help reduce the cost associated with monitoring and controlling management. Such internal corporate governance mechanisms include effective structured boards with effective subcommittees (e.g. the audit and remuneration committees), compensation contracts which encourage shareholder wealth maximisation and concentrated ownership which leads to active monitoring and control of executives, while the market for corporate control as an external mechanism may become operational when the internal mechanisms fail (Daily et al., 2003) to

align the interest of agents with those of principals. In this regard, some researchers have shown that better corporate governance mechanisms can assist in curbing agency costs. In a related study, Core et al. (1999) showed that firms with weaker governance structures have higher agency costs. In addition, they showed that CEOs at firms with greater agency problems receive higher compensation, and that firms with greater agency problems have worse financial performance.

Agency theory has been used extensively to understand the economic forces that drive organisational performance. It has also contributed immensely in understanding rational human behaviours through the principal–agent conflict. Based on its constructs, researchers have investigated CG mechanisms and firm financial performance. However, agency theory has attracted criticism from scholars in fields like sociology and psychology. These scholars have suggested agency theory to be very narrow in its construct of human behaviour by concentrating only on stock prices (Perrow, 1986, Hirsch and Friedman, 1986). Furthermore, the theory doesn't provide any clear and substantial problems within organisational context (Perrow, 1986, Hirsch and Friedman, 1986). More so, agency theory is seen by Perrow (1986 p.235) as being trivial while others see it as dehumanised, unrealistically one-sided and not providing any clear account for any existing trust and cooperation between shareholders and managers (Fehr and Falk, 2002, Perrow, 1986). The limitation of agency theory coupled with the conflicting empirical results based on its constructs on internal CG mechanisms therefore calls for the need to bring in additional theoretical lenses to provide alternative and complementary constructs of internal CG mechanisms (discussed in sections 2.2.2 and 2.2.3 below).

Even though agency theory dominates CG literature to date, extant governance literature stems from a wider range of theoretical perspectives. As Daily et al. (2003) noted, many of these theoretical lenses are not intended as substitutes but also as complements to agency theory to understand CG constructs. Hence, a multi-theoretic approach to CG is essential for distinguishing the many mechanisms and structures that might reasonably enhance organisational financial performance. In fact, most of board compositional constructs studied in CG research have tended to have favourability towards agency theory, and this is even more noticeable in the few studies which have been conducted in African economies. Reliance on agency theory board compositional constructs has often yielded very conflicting results (evident in column 8 in table 4 in Chapter 3). A contribution of this research is employing (in

addition to agency theory board compositional constructs) other theoretical governance and board compositional constructs to provide a comprehensive view of internal governance mechanisms and its impact on firm performance in Africa (this is discussed further in sections 2.2.2 and 2.2.3). Specifically, within this thesis, though agency theory provides theoretical foundations for the development of hypothesis with regard to board size, board composition, CEO–chairman separation, director ownership, board independence, as a standalone theory, it does not provide a conceptual framework to appraise governance complexity and other governance attributes which may affect firm value creation. Hence the subsequent sections discuss some of the theories complementary to agency theory within this thesis.

2.3.2 Stewardship Theory

'*Stewardship is the extent to which an individual willingly subjugates his or her personal interests to act in protection of others' long-term welfare*' (Hernandez, 2012 ,p.8).

This theory has also attracted attention, both as a substitute and as a complement to agency theory. Contrary to agency theory, which was drawn from an economic or financial literature, stewardship theory is drawn from psychology and sociology to provide a different view in which agents see greater long-term utility in other focused, pro-social behaviour rather than the self-serving, short-term opportunistic behaviour promulgated by agency theory (Hernandez, 2012, Miller and Sardais, 2011, Fehr and Falk, 2002, Davis et al., 1997, Donaldson, 1990, Eisenhardt, 1989, Perrow, 1986, Hirsch and Friedman, 1986). It was developed to examine situations in which agents as stewards are driven to act in the best interests of providers of funds.

Within this theory, relationship-centred cooperation within the firm fosters pro-firm and trustworthy behaviour in executive managers (Hernandez, 2012, Davis et al., 1997). Implicitly, managers display stewardship behaviours by placing the interests of shareholders above theirs, thus acting in the best interests of the company. Following from Davis et al. (1997) and Hernandez (2012), managers hold a covenantal relationship with shareholders which represents a moral commitment that binds both principals and agents to work towards a common goal, without being opportunistic. The resulting relationship is a covenantal one in which a reciprocal promise-based agreement contains both transactional and psychological elements (Hernandez,

2012). Hence, managers as stewards recognise their fiduciary obligations to protect the interests of shareholders and as a result believe they are morally obliged to pursue the interests of their principals.

This is not to argue that stewardship theorists assume managers are altruistic; instead, they recognise that there are many situations in which executive managers of organisations conclude that serving the interests of the owners means their interests are also served. Indeed, stewardship behaviour is different from altruism. This is because, in serving the interest of a single benefactor; empathy-induced altruistic actions can undermine collective good. However, managerial stewardship behaviours serve the interests of many individuals with self-sacrificial behaviours which are aimed at benefiting collective interests of the shareholders (Hernandez, 2012). Therefore implicitly, managers' stewardship behaviour represents a more expansive construct than altruism, given that their decisions are focused on broadly beneficial ends (Hernandez, 2012).

Whereas agency theorists identify managers of businesses as self-serving and opportunistic, stewardship advocates describe them as people who frequently have interests that are isomorphic with those of the owners (Davis et al., 1997, Daily et al., 2003). Stewardship theorist arguments are centred around a model individual whose behaviour is tailored in such a manner that pro-firm, collective behaviours have higher utility in an indifference curve than individualistic, self-serving behaviours (Davis et al., 1997). By inference, given a choice between a manager's self-serving behaviour and pro-firm behaviour, managerial behaviours will not depart from the interests of shareholders (Davis et al., 1997). Thus managers of firms will substitute or trade self-serving behaviours for firm collective behaviours (Davis et al., 1997). By inference, even in situations where the interests of the agent steward and of the shareholder–principal are not aligned, the manager will place higher value on collaboration than defection. This is because managers perceive greater utility in pro-shareholder-oriented behaviours.

Based on these arguments by stewardship theorists, they contend increase in firm financial performance is likely to be associated with internal CG practices which give executive directors greater power over the decision making of the company. Examples of such practices include conferring the position of the CEO and chairman to one person, executive directors (EDs) on

the board and fewer non-executive directors (NED) (Daily and Schwenk, 1996, Davis et al., 1997, Erhardt et al., 2003, Huse, 2000).

Following from the preceding arguments, this study uses stewardship theory constructs as an alternative view of agency theory and thus helps in results interpretation. An area where these contrasting views are relevant is in regard to agency theory recommendation for more non-executive directors to monitor and control management. Whereas stewardship theory argues for executive directors, as they are stewards with robust understanding of the organisation and are motivated to make decisions in the best interests of the shareholders. Hence there is no need for them to be monitored or motivated with performance-related compensation packages. As such, if results indicate stewardship premise holds, then increasing non-executive directors on board may increase cost through higher compensation. Hence the cost of monitoring adversely affects a firm's financial performance. Most studies have not investigated board composition in relation to the stewardship construct of executive directors (EDs), and this is almost absent in emerging African markets. Therefore, this research fills this gap in the comparative emerging African market context.

As discussed above, stewardship theory provides an explanation of the existence of collaboration and trust between shareholders and managers, with a two-sided balanced view of the agent–principal relationship. However, the theory has been criticised for painting an extremely rosy image of managers (Arthurs and Busenitz, 2003) and failing to highlight what aligns the interests of principals and agents (Davis et al., 1997). Finally, like agency theory, stewardship theory does not recognise the influence of the external environment and neither does it address the competencies needed by BODs to direct firms towards increased financial performance. Specific to this thesis, stewardship theory provides a basis for leadership duality and more executive director arguments to develop hypothesis in Chapter 4. However, it does not provide a comprehensive articulation of other corporate governance mechanisms that can affect firm financial performance. Thus, resource dependency theory discussed below complements both agency and stewardship theory because it provides an understanding of some competencies needed by a board of directors to direct a firm towards value maximisation.

2.3.3 Resource Dependency Theory (RDT)

One of the theories which has been used infrequently in understanding corporate governance and firm performance both in developed and emerging markets is resource dependency theory. The resource dependency paradigm dates back to Selznick (1949) and his research on the Tennessee Valley Authority (Bryant and Davis, 2012). Selznick reported that, when faced with resilient opposition, the Tennessee Valley Authority would include opposition members on its governing board (Bryant and Davis, 2012, Selznick, 1949). This policy, termed co-optation, was a tactic or strategy used by the Tennessee Valley Authority to minimise external uncertainty by exercising some level of control over the source of uncertainty.

The theory was developed later on by Pfeffer (1972) in his paper 'Size and Composition of Corporate Boards of Directors: The Organization and its Environment' and later on in Pfeffer and Salancik (1978) book titled *The External Control of Organizations: A Resource Dependence Perspective*. Since then, the theory has attracted a lot of attention from strategy to finance scholars in understanding organisational complexities. In fact, it has often been used as a complement to agency theory in corporate governance research. Even though this theory has been used as complementary to agency theory, it is very much distinct from both agency and stewardship theory. Whereas agency theory and stewardship theory are concerned with the alignment of the interest of agents and principals, resource dependency moves away from this form of internal conceptualisation of relationships. Instead it looks at the organisation as an entity operating in an uncertain environment. Resource dependency theory offers a theoretical basis for internal corporate governance mechanisms such as boards of directors as a resource to the company (Daily et al., 2003, Hillman et al., 2000, Pfeffer and Salancik, 1978). Advocates of this theory see boards of directors as contributors and as boundary spanners (linking the firm internal networks with external sources of information) of the firm and its environment (e.g. see Daily et al., 2003, Hillman et al., 2000, Pfeffer and Salancik, 1978).

According to Pfeffer (1972), if boards as an internal corporate governance mechanism act as environmental linking bodies, when firms are confronted with greater external resource dependencies, a larger board with a greater proportion of outside directors will be necessary to reduce these dependencies (Bryant and Davis, 2012, Huse, 2007, Pfeffer, 1972, Pfeffer and Salancik, 1978). Evidence from Pfeffer (1972) study provides support for: i) positive correlations between organisation resource dependencies related to sales and finance and the

number of outside directors; ii) positive correlations between finance and regulation and the number of directors. In relation to Pfeffer (1972) results, the rationale within this theory is that boards should be structured and composed in such a way that reflects a firm's resource dependencies. As such, Pfeffer (1972) observed that, when board composition and structure were different than the normative or reflective size for a given level of a firm's external resource dependence, organisational financial performance declines in proportion to the amount of misalignment from required board structure.

Following on from the preceding discussion, outside directors according to the resource dependency theory provide access to resources needed by the firm (Bryant and Davis, 2012, Miller and Sardais, 2011, Daily et al., 2003, Pfeffer, 1972). For instance, outside directors who are also executives of banks may assist in securing credit for the firm. Similarly, outside directors who are legal practitioners provide legal advice both in private communication with the firm's executives or during board meetings which *ceteris paribus* may otherwise be more expensive for the organisation to secure (Kiel and Nicholson, 2003, Daily et al., 2003). The provision of these resources by the board as an internal corporate governance mechanism enhances the firm's operation, firm financial performance and survival in the long run (Daily et al., 2003).

In relation to the composition of the boards as an internal governance mechanism, both agency theory and resource dependency theory have advocated for more outside directors or non-executive directors, but they differ in that the latter is concerned with the composition and inclusion of outside directors in relation to a firm's dependencies. Whereas the former is in relation to independence in monitoring and control of management. Agency theory board taxonomy distinguishes between outside directors and inside directors; however, the resource dependency taxonomy retains the typical inside director classification but disaggregates the outside directors into three distinct classes, namely business experts, support specialists and community influencers (Bryant and Davis, 2012, Hillman et al., 2000). Therefore an efficient resource dependent board will modify its structure and composition by adding additional non-executive directors in the category of support specialists, business experts and/or community influencers to reflect new resource dependencies as required by the firm (Bryant and Davis, 2012). Inside directors in the resource dependency taxonomy are there to fulfil the task of meeting the internal resource dependency requirements of the firm (Bryant and Davis, 2012, Hillman et al., 2000). As Bryant and Davis (2012) put it, as former or current executives of the

firm, executive directors are best placed to provide knowledge and expertise vis-à-vis the strategic and day-to-day needs of the firm (Bryant and Davis, 2012).

In fact, some scholars have noted that, historically, CG scholars have often regarded composition of boards with a bias towards agency theory (Bryant and Davis, 2012, Hillman et al., 2000), and this is more evident in the very few studies conducted so far in Africa (see section 3.6 and table 4). This is one of the areas where this study seeks to contribute to CG empirical research by looking at, in addition to board compositional constructs of agency theory, board interlock and busyness constructs within resource dependency taxonomy. Therefore, given this limitation and the need to understand CG beyond agency theory prescriptions, this study uses agency theory, stewardship theory and resource dependency theory to understand internal CG mechanisms within an African context (Kumar and Zattoni, 2015). Specifically, the limitations of each of the theories and their empirical predictions enable a triangulation of governance constructs to provide a robust and comprehensive understanding of CG–firm performance in a comparative African context.

2.4 Justification for Multi-Theoretic Approach

The preceding sections have attempted to define the theoretical underpinnings of this study. Consistent with some prior studies and suggestions (Ntim, 2013c, Huse et al., 2011, Minichilli et al., 2009, Nicholson and Kiel, 2007) and in addition to the complex nature of corporate governance across the globe, this study adopts a multiple-theoretical perspective in understanding corporate governance internal mechanisms. These theories include agency, stewardship and resource dependency theories. Because this study is approaching positively the subject of corporate governance from a finance perspective, these three theories are relevant and closely related in understanding and answering the research questions. The theories help in elucidating the often-complex organisational relationships between owners, managers and stakeholders in modern firms.

In brief, agency theory proposes that, because of the separation of ownership and control of firms, managers of firms may be less inclined to work in the interests of the shareholders. Thus, to limit divergence of shareholder and managerial interests, owners of firms have to put in place internal CG mechanisms to monitor and control managers. *Ceteris paribus*, by putting in place effective internal CG structures, agency costs are reduced which is likely to increase firm

financial performance. Stewardship theory on the other hand suggests that, owing to the manager's knowledge and information advantages, better firm financial performance is likely to be associated with internal CG structures that provide greater managerial powers and trust. Last of all, resource dependence theory suggests that internal CG structures (e.g. the board of directors) tailored towards linking the firm to control external uncertainties and critical business inputs are associated with higher firm financial performance.

Specific to this thesis, each of these theories offers peculiar recommendations on how internal governance mechanisms should be structured. For example, the study uses agency theory recommendations for effective monitoring, including board composition (NED), board leadership separation, board independence, corporate ownership structure, board size and capital structure. On the other hand, the study uses stewardship theory recommendations for including more executive directors and CEO/chairman duality. Finally, the thesis uses resource dependency constructs, including board interlock, board size and diversity. Hence this thesis uses the limitations (merits) of each of the theoretical recommendations for particular internal CG mechanisms to complement each other in providing a holistic development of different hypotheses (presented in Chapter 4) to inform the main focus of the research.

It should, however, be noted that other theoretical approaches (e.g. upper echelons theory, social network theory and other related theories) could be used to study CG, but given the scope and context of this research and after a thorough review of the extant literature as detailed above, the three theoretical perspectives discussed above were considered more appropriate to answer the research questions in relation to internal CG mechanisms as measured by the equilibrium variable model introduced in subsection 1.4. However, some of the theories, such as upper echelons theory and social network theory and other related theories, will be discussed as needed to elucidate and debate on some CG constructs from the three key theoretical underpinnings of the research, especially during hypothesis development. For example, some board compositional arguments drawn from upper echelons theory, managerial hegemony and social network theory will also be introduced to elucidate some board constructs such as board gender, ethnic diversity and board interlock.

The above-discussed theoretical perspectives postulate why one or a few internal CG structures is (are) more important than others in affecting firm value. However, they fail to recognise that firms operate in countries with different historical, cultural, legal, formal and informal norms

which shape firm economic and governance behaviours. Consequently, in addition to the above-discussed theories, New Institutional Economics (NIE) theory is introduced in the next chapter as a supplementary theoretical lens to understand and elucidate how country institutional differences and/or similarities shape firm-level CG structures. Consequently, this study contributes to comparative institutional CG literature in Africa where there exist a dearth in research on how institutional differences and similarities across countries shape firm-level choice of a bundle of internal CG structures as prescribed by respective countries CG codes (see subsection 3.5 and table 3). Further discussion linking selected theories and how they inform the choices of internal corporate governance mechanisms as well as the analytical models to be used in this study will be presented during hypothesis development in Chapter 4. Therefore, the multi-theoretical approach in this study enables the study to widen and combine various theoretical lenses to develop new interpretations and a better understanding of CG regulations and mechanisms.

2.5 Summary of Chapter

This chapter provided a broader view of international corporate governance literature and theoretical underpinnings within which the thesis corporate governance framework is presented, and research questions are developed. This chapter has reviewed the extant literature in corporate governance, within which the identified research gap (as in subsection 1.3) and research questions (presented in 1.4) are developed. Specifically, the chapter has presented the debates surrounding corporate governance definition. In addition, it has also presented detailed debates on selected CG theoretical underpinnings, which guides the research questions. Based on the theoretical debates from agency, stewardship and resource dependency theories, a multi-theoretical approach is adopted to articulate the often-complex organisational relationships between shareholders, managers and stakeholders in modern firms. More importantly, these theories pave the way for a contextual theoretical discussion in the next chapter (Chapter 3) and development of hypotheses in Chapter 4.

The next chapter discusses contextual/institutional development of CG regimes and codes in the countries chosen for the study. Specifically, it presents the New Institutional Economics (NIE) theory as an additional theoretical lens to understand how firm choice of CG is influenced by country-specific individualities

CHAPTER 3

3.0 CONCEPTUAL LITERATURE: CORPORATE GOVERNANCE IN AFRICA

3.1 Introduction

Chapter 2 discussed the definition of CG, debates on the various CG regimes, theoretical development and identification of various internal CG mechanism(s) advocated by individual theories and justification for a multi-theoretic approach in the thesis. This chapter builds on preceding discussions by examining how CG in South Africa and Nigeria has developed and how the various CG regimes which are operational in these countries have been shaped by the different governance institutions, theoretical debates (discussed in 2.2) and CG regime debates (discussed in 2.1).

Specifically, the chapter draws on these preceding discussions to discuss how the various CG regimes operational in Nigeria and South Africa have been shaped by institutional differences and similarities. Section 3.2 presents New Institutional Economics (NIE) theory as a complementary theoretical angle to the earlier-discussed theories in Chapter 2. As will be discussed later, NIE is suitable to understand contextual differences and similarities in governance institutions and codes operation in the two selected African economies. This discussion enables an appreciation of the different CG regimes and the historical development of CG institutions in each country and how these various set-ups fit within the shareholder CG regime, the stakeholder CG regime, or a blend of both. Building from the discussions on NIE, section 3.3 presents the background of South Africa and narrates how this background led to the development of CG in the country. Similar discussions for Nigeria are presented in section 3.4. Drawing from sections 3.2, 3.3 and 3.4, section 3.5 summarises and compares the different CG codes operation in both countries from an NIE perspective. Finally, key empirical works conducted in Africa (3.6) are discussed. This provides a strong background within which the focus of the thesis is developed. Finally, section 3.7 presents a summary of the chapter.

3.2 New Institutional Economics (NIE) Theory

Emerging discussions in corporate governance scholarship argue that the most important and promising corporate governance research should seek to recognise how institutional context impacts on the behaviour of firms rather than using classical agency theory approach (Judge et al., 2008, Aguilera and Cuervo-Cazurra, 2009). Economic, governance and financial circumstances vary greatly from country to country. As noted by Filatotchev and Boyd (2009 pp.264), future research should aim at integrating corporate governance research with institutional economics perspective. This study sympathises with this line of academic thinking and, as such, in addition to the traditional CG theories discussed in Chapter 2, the study uses NIE as an additional theoretical lens to understand how institutional context including historical, cultural, formal and informal rules operation in each country has shaped the development of their respective CG codes.

Different from agency theory, typical classical and neo-classical economic theorising, New Institutional Economics (NIE) does not assume institutional arrangements as given but makes it an important object of research. NIE seeks to cogitate the consequences of a country's given institutional arrangements for economic behaviour of firms. According to North (1981, 1986, 1990), local and national institutions shape the rules of the game in economies, which enhances structural motivations in human interchange and influences economic performance of nations. These institutional rules of the game have implications on how firm-level behaviours are impacted by the economic, historical, political and socio-cultural environment in which it operate (Williamson, 2000, pp.259). Consequently, different countries generate and sustain different institutions, which helps in facilitating economic transactions with the consequence that particular institutions will be more effective and efficient than others, and all have a tendency to evolve over time (Filatotchev and Boyd, 2009 pp.264). For instance, the polity may demand that a firm's internal corporate governance structure be organised in a way that fosters the implementation of some public policy. As a result, players outside the firm may affect its internal CG structures by instituting governance arrangements through political institutions (Gabbioneta et al., 2013). This can enable the banning of certain business practices, raise cost for others and subsidise others (Greif, 2008, Richter, 2005, Richter, 2015).

Consequently, NIE embodies the vital role of government and other institutions capacity in shaping the institutional business environment in which firms operate. North (1981, 1986, 1990), Richter (2005), Adegbite (2015), Adegbite and Nakajima (2012), Nakpodia et al. (2016) argue that formal and informal rules including political rules (e.g. constitutions), economic rules (property rights, company law), history, traditions and contractual agreements between economic players (sales contracts) are institutional constraints that limit firm behaviour.

Drawing from this, this study argues that corporate governance rules and requirements in emerging economies are embedded in the larger institutional, political, historical, and legal frameworks (Areneke et al., 2017). Concisely, effective practice and compliance with CG provisions are contingent on the institutional environment in which firms and their stakeholders operate. Consequently, the reaction of corporate managers in Nigeria and South Africa is deeply enshrined in the system of norms and relations, which are socio-culturally and politically constructed.

This study argues that, in Nigeria and South Africa, corporate governance practices do not naturally arise out of a nexus of contracts as agency theory postulates but from arrangements that are reflective of the prevailing economic, political, socio-cultural and historic process. More so, the development of Securities and Exchange Commission (SEC) 2011 code in Nigeria and King III in South Africa (as will be discussed later) is in place as a result of interconnected institutions reinforcing each other, including the government, the stock markets, auditors, shareholder groups, international pressure from World Bank and IMF and other stakeholders. However, if these codes do not fit within the context, as the applicability of some of the borrowed CG mechanisms and CG provisions implemented is questionable, coupled with the lack of regulatory enforcement, weak and corrupt institutional environment, then we may see resistance to compliance (Nakpodia et al., 2016). Thus, compliance with SEC 2011 corporate governance requirements in Nigeria and King III CG code depends on wider cultural beliefs and rules that structure managerial decision-making in both countries.

3.3 Corporate Governance in South Africa (SA)

South Africa is seen today to be one of the largest and most developed economies in the African continent and generates up to 20 per cent of the income generated within the whole of sub-Saharan Africa (Vaughn and Ryan, 2006). One of the major reasons given for such an astonishing success in the region is thanks to its leadership in the corporate governance area. According to Statistics South Africa (2016), as of 2013, 75.7% of SA GDP is derived from the private sector, with finance, real estate and business services contributing 19.4%; wholesale, retail and motor trade, catering and accommodation 13.7%; manufacturing 13%; transport, storage and communication 8.4%; mining and quarrying 7.7%; personal services 5.4%; construction 3.4%; electricity, gas and water 2.4%; and agriculture, forestry and fishing 2.3%. South Africa is seen to not only be one of the biggest economies in Africa but also Africa's most sophisticated economy (Vaughn and Ryan, 2006), with its financial institutional structures very much advanced compared to other emerging markets (Andreasson, 2011, Vaughn and Ryan, 2006). Table 1 below shows the historical context and milestones within which CG has emerged in South Africa.

Historically, South Africa has suffered notoriously with a high crime rate and sluggish economy, especially during the era of apartheid. In fact, during the period 1961–1994, the country was almost excluded from the global economy as a result of its apartheid practices (Andreasson, 2011, Vaughn and Ryan, 2006). Owing to the oppressive political environment of the country at the time, the United Nations excluded South Africa from partaking in international unions, and economic and trade sanctions were imposed, helping to effectually stifle the country's economic growth and development (Vaughn and Ryan, 2006). These sanctions arguably also protected South African firms from outside competition, as financial sanctions kept international organisations out of the country's domestic market and national firms out of the global capital market (Vaughn and Ryan, 2006, Ntim, 2013c, Ntim et al., 2014c). As a result of this, corporate practices, regulations and domestic laws fell far behind global standards, and, by the late 1980s, a lot of the country's firms were fuzzy entities led by self-serving and entrenched executives (Vaughn and Ryan, 2006).

Table 1: Historical and Contextual Milestones Leading to the Development of South Africa's Corporate Governance Code (King I, II and III).

Year	Milestones
1887	• Creation of Johannesburg Stock Exchange (JSE)
Pre-1910	• British colonisation of South Africa • South Africa Act 1909 • Common Law system
1913	• Natives' Land Act (black South Africans were relatively restricted from the legal ownership of land)
1948	• Beginning of Apatheid South Africa
1961-1980	• South African republic referendum to gain independence • Isolated from the global economy by the UN because of apartheid practices • Excluded from economic and trade transactions • Corporate practices, laws and standards were far behind international standards • Firms were entities led by self-serving, entrenched executives
1986	• Repeals to Apartheid legislation
1992	• Formation of the King Committee on corporate governance, tasked with developing CG codes
1994	• Release of Nelson Mandela • End of Apartheid South Africa • Creation of King I corporate governance code derived from the UK 's 1992 Cadbury report within the Anglo-American CG model (discussed in 2.1); applicable to listed firms in the JSE • Re-introduction of SA into the global economy
2002	• Creation of King II corporate governance report with hybridisation of the Anglo-American CG model and the stakeholder CG model. Applicable to listed firms under the UK principle of 'comply or explain' • Introduction of triple bottom line reporting (firms are to report on environmental, financial and social aspects of an entity)
2004	• Introduction of the Socially Responsible Investment Index by the JSE
2008	• New Companies Act incorporating some CG provisions in King I and II into law
2009	• Creation of King III CG report • Applicable to all firms, whether listed or unlisted • King III operates under the principle of 'apply or explain' (borrowed from The Netherlands) to give some flexibility to firms in their reporting

After 1986, South Africa started witnessing political reforms, with certain repeals to the apartheid legislation; however, it was not until the complete collapse of apartheid in 1994 and the release of Nelson Mandela from prison that the country was once more welcomed to the global economy (Vaughn and Ryan, 2006). Faced with the challenges of being welcomed in the international market, South African firms were compelled to embrace and address international corporate governance standards as investors

demanded a reform in both corporate governance practices and corporate structures. Indeed, the South African government and economic enterprises equally acknowledged that an improvement in corporate governance rules and policies could enhance the country's ability to achieve increased productivity growth and economic stability, which were seen as crucial for long-term national development (Vaughn and Ryan, 2006, Andreasson, 2011).

Similar to many African countries, South Africa's colonial inheritance and follow-on ties with the UK have assured that corporate practices and corporate laws have been adopted mainly from the UK. Thus, the South African corporate governance regime has been heavily based on the corporate governance system in the UK. To respond to international pressure, the King Committee on Corporate Governance was formed in 1992 with the task of developing CG codes. Its first report was published in 1994 (King I), with substantial inspiration drawn from the UK 1992 Cadbury Committee report (Ntim et al., 2014b, Ntim, 2013c, Andreasson, 2011, Vaughn and Ryan, 2006). The production of the King I CG report also coincided with post- apartheid South Africa and the re-integration into the world economy. As a result of this affiliation, the King I corporate governance report was tailored to reflect the Cadbury report of the UK (Ntim et al., 2014b, Ntim, 2013c, Andreasson, 2011, Vaughn and Ryan, 2006). The South African first corporate governance regime (the King I report), which was developed in 1994, fits the traditional Anglo-American corporate governance model with a more shareholder-oriented approach. In fact, this model included: (i) a single-tier board system with only shareholder representation; (ii) an active local capital market which ensures that financial markets play a dominant role in governance; (iii) a banking structure which plays a secondary role, in which banks are not controllers of firms and avoid excessively close relationships with customers; and finally (iv) a general commitment to a market-driven economic course of action in which industrial policy plays a very minimal role as articulated in the government's Growth, Employment and Redistribution policies (GEAR) (Andreasson, 2011, López de Silanes et al., 1998).

The King I report was later followed by the King II report in March 2002, which was different from the King I report in that it moves away from the Anglo-American model to a somewhat mixed model which has come to be known as a 'hybrid model', incorporating both the shareholder and stakeholder regime of CG. In fact, King

II recommended the introduction of 'triple-bottom-line' reporting (Ntim et al., 2014b, Ntim, 2013c, Andreasson, 2011, Vaughn and Ryan, 2006). Hence, King II requires firms to report on environmental sustainability and social aspects of the firm's activities, in addition to traditional reporting on the economic and financial 'bottom line' as in the King I report (Ntim et al., 2014b, Ntim, 2013c, Andreasson, 2011, Vaughn and Ryan, 2006). As a result of both the 'triple-bottom-line' reporting standard and the implementation of a Socially Responsible Investment Index by the JSE in 2004, South Africa is praised to be the first emerging market to introduce such reforms (Andreasson, 2011, Vaughn and Ryan, 2006).

In 2009, a third report (King III) was developed with the aim of continuous promotion of the principles-based approach of King I and King II (Andreasson, 2011), with some of the principles of the King report established in law. In contrast to King I and II, which were applicable only to listed companies in the JSE, King III is applicable to all entities, be they private, non-profit or public. The King III regime follows The Netherland's enforcement principle of 'apply or explain', where boards are to decide how to apply the recommendations of King III or apply another practice which can still enable the firm to achieve the objectives of CG principles of accountability, fairness, responsibility and transparency (see summary of provisions of King III in table V). In fact, the main difference between the 'comply or explain' principle in the King II report and the King III 'apply or explain' principle is that, under the former, firms could denote a mind-set on complying with King II provisions regardless of its applicability to the firm. While the latter shows an appreciation for the fact that it is often not the case of compliance but instead of considering how the King III principles and recommendations can be applied at firm level which fits with both the Anglo-American CG model and the stakeholder CG model. Indeed, the King III report covers a number of global emerging governance trends, including alternative dispute resolution, shareholder approval of remuneration of non-executive directors, evaluation of directors' and board performance and risk-based internal auditing, IT governance and business rescue (Esser, 2009, Posthumus et al., 2010, Gstraunthaler, 2010, Ioannou and Serafeim, 2014).

In a nutshell, the principal objective of the King reports on corporate governance is to encourage the highest corporate governance standards in South Africa by promoting an assimilated approach to corporate governance in the interests of a wide range of stakeholders. The report addresses the responsibilities and accountability of executives, boards and individual directors, laterally auditing process and accounting. Some of these recommendations include: encouraging shareholder activism, improving the Companies Act, implementing accounting standards into company law and calling on the powers that be to improve the enforcement of existing rules and regulations (Esser, 2009, Posthumus et al., 2010, Gstraunthaler, 2010, Ioannou and Serafeim, 2014). Indeed, South African CG standards have become notable examples of how emerging markets especially in Africa can develop CG regulations which incorporate international best practices in corporate governance while also addressing national needs through corporate social responsibility, which are essentials for broad-based development in the country (see section 3.5 for a synopsis of institutional context and table 3 for a summary of CG provision of King III).

3.4 Corporate Governance in Nigeria

Nigeria is the biggest and most populous country in Africa. The country now has the largest economy in Africa (followed by South Africa), with an estimated nominal GDP of $568.5 billion, exceeding South Africa's $349.8 billion as of 2014 (Barungi, 2014). According to Barungi (2014), Nigeria has sustained its impressive growth over the years with a record growth of 7.4% real GDP in 2013, a rise from 6.7% in 2012. Nigeria's growth rate is greater than the average of the West African sub-region and far greater than that for sub-Saharan Africa (Barungi, 2014).

Similar to other African countries which had colonial rule, from 1960, which represents the post-colonial era in Nigeria, the country adopted an interventionist development strategy which entailed restrictions on foreign ownership of firms and an active role of the state in strategic sectors of the economy, particularly oil and gas and infrastructure (Ahunwan, 2002). Operating with this type of strategic initiative in a context of weak market institutions (Adegbite, 2012, Adegbite, 2015, Adegbite et al., 2012, Adegbite et al., 2013, Adegbite and Nakajima, 2011, Adegbite and Nakajima, 2012, Adekoya, 2011, Nakpodia and Adegbite, 2017, Nakpodia et al., 2016, Osemeke and Adegbite,

2016), absence of healthy political democracy according to Ahunwan (2002) did not result in the practice of good corporate governance. Table 2 below shows the historical context and milestones within which CG has emerged in Nigeria.

The Nigerian Stock Exchange (NSX) came into existence immediately after independence in 1960, but became operational with under ten stocks in 1961 (Sanda et al., 2005). As of 31 December, 2013, 53 years after its creation, it had about 210 listed companies with a total market capitalisation of about N12.88 trillion ($80.8 billion). Though a remarkable growth, considering the number at the initial stage, comparatively, this is below the number of listings for other emerging markets such as the Malaysian and South Korean exchanges, with more than 250 listed companies (Sanda et al., 2005). After its creation in 1960, the stock exchange operated without any regulatory body till 1979, when the Securities and Exchange Commission (SEC) was established (Sanda et al., 2010, Sanda et al., 2005). It took a further 20 years for the Securities and Investment Act (1999) to be enacted.

International economic pressures in recent years prompted Nigeria to take on a programme of deregulation and economic liberalisation (Ahunwan, 2002). Supporters of the changes point to the potential not only for accelerating economic growth, but also for enhancing responsible corporate governance (Ahunwan, 2002, Akinkoye and Olasanmi, 2014). As a result, in June 2000 the Nigerian Securities and Exchange Commission (SEC) put together a Committee on Corporate Governance of Public Companies in Nigeria (Okike, 2007). This committee was charged with reviewing corporate governance practices in Nigeria and, thereafter, providing recommendations for a code of best practice to be implemented by public firms listed on the NSX.

The code is to exercise power over the direction of the firm, the supervision of management actions, transparency and accountability in the firm's governance within the regulatory framework and NSX rules (Okike, 2007, p.173.). Nigeria also has a common law system which is rooted in the British legal system (Ogbechie, 2010). The corporate governance legal framework in Nigeria is principally guided by the Investments and Securities Act (ISA) No. 29 of 2007, the Securities and Exchange Commission (SEC) rules and regulations pursuant to the ISA, the Companies and Allied

Matters Act (CAMA) of 1990 and the Trustee Investments Act of 2004 (Akinkoye and Olasanmi, 2014).

Table 2: Historical and Contextual Milestones Leading to the Development of Nigeria's Corporate Governance Code

Year	Milestone
1900-1960	• British colonial rule with a common law system
1960	• Independence of Nigeria • Continuation of British common law system
1961	• Creation of Nigerian Stock Exchange (NSX)
1962	• Adoption of an interventionist development strategy which entailed restrictions on foreign ownership of firms • Enactment of Foreign Exchange Control Act of 1962. Promoting indigenous ownership of firms
1968	• Enactment of Companies Act derived largely from English company act of 1948
1972	• Enactment of the Nigerian Enterprises Promotion Decree No. 4 of 1972, prohibiting the creation or transfer of any security or interest in a security in favour of a person resident outside Nigeria
1979	• Creation of the Securities and Exchange Commission (SEC) to regulate stock market
1990	• Enactment of the Companies and Allied Matters Act (CAMA)
2003	• Creation of the first CG code by the SEC which was largely derived from the UK Cadbury report and fit within the Anglo-American CG model
2004	• Enactment of Trustee Investments Act
2011	• Creation of the second CG code by the SEC which was a revision of the 2003 code. The 2011 code included stakeholder provisions to incorporate triple-bottom-line reporting • The 2011 code blends both the Anglo-American and stakeholder models of CG but incorporates the UK's 'comply or explain' principle. All listed companies are expected to comply with this provision

In 2003, the SEC inaugurated a code of best practices in corporate governance (Adegbite, 2012, Adegbite, 2015, Adegbite et al., 2013). Later on in 2006, the Central Bank of Nigeria (CBN) implemented another code of corporate governance for Nigerian banks post-consolidation (Akinkoye and Olasanmi, 2014, Adekoya, 2011). These codes were aimed at supplementing the Companies and Allied Matters Act of 1990 implemented during the military administration era to regulate all corporate entities in Nigeria (Akinkoye and Olasanmi, 2014, Adekoya, 2011). The 2003 code was derived largely from the UK Cadbury report; as such, the code was somewhat a mirror of the Anglo-American CG regime. However, a revised code was introduced in 2011 which emphasises responsibilities and the structure of the board of directors (Akinkoye and Olasanmi, 2014, Adekoya, 2011, Okike, 2007). The code stipulates that the BODs are responsible for the operations of the firm in an efficient, effective and lawful manner to ensure that the firm is constantly enhancing its value creation as much as possible (Akinkoye and Olasanmi, 2014, Adekoya, 2011, Okike, 2007). The board is also tasked to ensure that the value created by the firms is shared among the shareholders and employees while meeting the interests of the other stakeholders of the firm (Akinkoye and Olasanmi, 2014, Adekoya, 2011, Okike, 2007). The board is also expected to appraise management's strategic planning, selection, performance, executive compensation and succession planning among other aspects of the board's activities (Akinkoye and Olasanmi, 2014, Adekoya, 2011, Okike, 2007).

As in the UK, Nigeria's public limited companies have a unitary board system. Though the code specifies a minimum number of five directors on the board, it does not specify an upper limit. The code suggests that the constitution of a corporate board should reflect the scale and complexity of a firm, ensuring diversity of experience without undermining integrity, availability, independence and compatibility with the firm's needs (Okike, 2007). The code also recommends that the board consist of a mix of non-executive and executive directors under the leadership of the chairman who should be a non-executive director (Okike, 2007). The 2011 code requires triple-bottom-line reporting including sustainability issues which are similar to South Africa's King II report. The code also includes stakeholder CG provisions, shareholder CG provisions and global CG trends, including alternative dispute resolution, shareholder approval of remuneration of non-executive directors, evaluation of directors' and board performance, risk-based internal auditing, social, ethical, cultural diversity, corruption,

strategies for HIV/AIDS and other diseases and environmental reporting. At the time of the creation of the 2011 CG code, companies were expected to comply or give reasons for non-compliance. This reflected the UK 'comply or explain' orientation. However, in May 2014, the SEC made compliance with the code mandatory, which is line with the US compliance doctrine of 'comply or else'. Violation of the code attracts a fine of N500,000 ($2,483) in the first instance and N5,000 ($24) for every additional day of non-compliance. See subsection 2.3.6 for a synopsis of institutional context and table 3 below for a summary of Nigeria's CG provisions.

3.5 NIE & CG Compliance Policies in South Africa and Nigeria

The preceding section has discussed the historical development of CG policies across Nigeria and South Africa. From these discussions, it is evident that institutional reforms have been pursued in these countries to ensure 'good' CG practices. However, owing to institutional differences, the level of development of CG codes differs in both countries. This creates different but unique governance environments whereby the impact of internal CG mechanisms and compliance with country-specific CG codes can be explicitly examined and compared. Table 3 below summarises CG provisions across both countries and shows how they differ. Some of the institutional differences in CG environment across both countries are:

First, the historical development of each of these countries has shaped the level of maturity of CG codes between the countries. Though both countries developed the various CG codes from international CG benchmarks (e.g. UK Cadbury 1992, OECD, CACG codes), they all are different in levels of maturity. For example, South Africa's King report has emerged from the development of King I of 1994, which was developed extensively from the provisions of the UK Cadbury report of 1992 centred on shareholder CG regime through King II of 2002 to the current 2009 King III which operates under an affirmative stakeholder CG regime. Though Nigeria's second CG report came into existence in 2011, with some of its provisions similar to King II guidelines, it differs significantly from King III (see table 3 below, column 2 and 3). For example, Nigeria CG code does not cover integrated sustainability provisions (e.g. IT governance and black empowerment) which is a major advancement in King

triple-bottom-line reporting (see 'integrated sustainability provisions' in table 3 below). In fact, the requirement of King III for firms to report on health and safety, black empowerment, employment equity, environment and HIV/AIDs is a major attempt at addressing historical socio-economic inequalities between non-white and white South Africans.

In a nutshell, looking at table 3 below and from the historical development of Nigeria and South Africa CG discussed in 3.3 and 3.4, both countries have developed CG codes over the years to reflect local/institutional realities of doing business in the countries. Though both country codes show some resemblance to the Anglo-American shareholder model such as voluntary compliance, unitary boards and CEO–chairman role separation, these countries have developed and emphasised provisions relating to shareholder and stakeholder protection differently owing to their institutional realities. Both countries have advanced to triple-bottom-line reporting (with different provisions) to require firms to disclose transparent information on many stakeholder inclusive and affirmative actions to reflect the socio-economic realities of each country. This therefore implies that the requirements for internal CG mechanisms to be implemented by firms across each country will differ as well as compliance with country-specific CG code.

A notable example that CG codes in Africa have attempted to adapt to institutional realities as opined by NIE is evidence in Nigeria and South Africa. For example, in Nigeria, the SEC CG code of good practice does not cover provisions such as black empowerment, which is a major advancement in South Africa's King II and III triple-bottom-line reporting. This is because Nigeria historically and institutionally is different from South Africa.

As noted by Cave (2013), Nakpodia et al. (2016,pp.2), governance regulations should be in consonance with institutional settings and must fit within regulatory strategy incorporated in the institutional environment. Following the historical and institutional context enshrined in the development of CG code in Nigeria and South Africa, NIE highlights the critical interaction between Nigerian and South African institutions and firm-level behaviour. As such, the impact of corporate governance compliance practices on firm financial returns of Nigerian and South Africa-listed

firms will be associated with how firms relate institutionally to the SEC 2011 code and King III respectively.

Despite Nigeria's economic growth, the country still suffers from poor management of companies (Adegbite, 2015, Adegbite et al., 2012, Adegbite and Nakajima, 2011, Adegbite and Nakajima, 2012, Nakpodia and Adegbite, 2017, Nakpodia et al., 2016, Okike, 2007, Okpara, 2011, Osemeke and Adegbite, 2016). Poor CG is argued to be a reason for the failure of many firms in Nigeria (Adegbite, 2012, Adegbite, 2015, Adegbite et al., 2012, Adegbite and Nakajima, 2011, Adegbite and Nakajima, 2012). Indeed in 1995, several directors and CEOs of Nigerian banks were arrested for non-performing loans that were allocated to their families, relations, friends and themselves (Ogbechie, 2010). Bad CG practices led to corporate fraud and failure, including the 2007 Cadbury Nigeria and the 2008 Halliburton scandals (Adegbite and Nakajima, 2012). On the other hand, compared to Nigeria, South Africa has taken steps to reduce corruption in the corporate sector (Ntim, 2013c, Ntim, 2013a, Ntim and Soobaroyen, 2013b). Despite these efforts and the significant development of governance institutions in South Africa compared to other emerging economies, informal institutional practices including bribery and corruption continue to affect the effectiveness of normative guidelines (Nattrass, 2014, Rispel et al., 2015). Recent studies have suggested that corruption in South Africa is a result of inadequate separation of powers between the party in power (ANC) and the state (Matshiqi, 2012), information asymmetries, lack of enforcement of regulations and conflicts of interest (Edmeston, 2012, Rispel et al., 2015). Even though the Black Economic Empowerment (BEE) was welcomed as an advancement from apartheid South Africa, its poor implementation and monitoring in addition to weak regulatory enforcement has opened the door for growing corruption (Nattrass, 2014). This is because the close relationship between the ruling elite and BEE beneficiaries has promoted the transfer of corruption from the state to the corporate sector (Nattrass, 2014).

Despite the importance of governance regulations aimed at reducing institutional void and negative informal practices in both countries, extant literature has generally focused on description of the state of governance practices from interviewee accounts (especially for Nigeria). More so they are country-specific and limited to micro-level analysis. For example, drawing from interviewee accounts, some scholars have

reported the role of elites as inventors and promoters of corrupt institutions in Nigeria (Nakpodia et al., 2016) and conflict among the various codes of governance (Osemeke and Adegbite.,2016) which perpetuates corrupt practices in addition to weak enforcement of normative guidelines. In a recent quantitative study including IPO firms from Nigeria, Zattoni et al. (2017) reported that the impact of board independence on firm financial performance is contingent on specific national context. Similarly, in South Africa, authors like Ntim (2012a) have examined CG practices of South African firms and reported affirmative effect on firm performance. African economies have articulated CG as a pre-requisite to attract FDI, reduce institutional void and enhance economic development (Rossouw, 2005,p.101), which has led to the development of normative governance guidelines as discussed above. However, there is a lacuna of comparative institutional governance research which examines how various institutionalised governance guidelines across African countries influence firm-level governance practices and its consequent effect on firm financial performance. This study fills this lacuna in governance research by drawing on institutional theory to provide comparative institutional evidence on how macro-level internal corporate governance and compliance practices of firms impact on firm financial performance amid institutional constraints in emerging African economies.

The thesis argues that because of institutional differences across emerging African economies country-level governance institutions may operate differently and have varied performance effects on firms as there is undoubtedly cost and benefit associated with different CG structures that are optimised for the benefit of a firm. In addition, there is significant variation in national financial systems or structures across both countries, which allows a test for the impact of such cross-country institutional dissimilarities on firm governance and financial performance. More so, the level of maturity in governance institutions vis-à-vis normative rules and informal norms across both contexts may have significant bearing on firm-level governance practices and performance. For example, South Africa is an example of a mature governance institutional context owing to its development of corporate governance regulations from King I of 1994 to King III of 2009, whereas Nigeria offers an emerging governance institutional environment as its first corporate governance code was instituted in 2003 with a revision in 2011. Table 3 below summarises the provisions of country-specific CG provisions.

Table 3: A Summary Comparison of Corporate Governance Compliance Provisions of Nigeria and South Africa (King III)

Corporate Governance provisions	SA (2009) King III	Nigeria SEC (2011) CG code
Board of Directors		
Board structure	Unitary board	Unitary board
Board composition	Majority of NEDs	At least 5 members
Non-executive directors (NEDs)	Majority of board	Majority of board
Independent non-exec. Directors	Majority of NEDs	At least one
Board intellectual composition	Should reflect skills, knowledge, resources, diversity and demography	Should reflect skills, knowledge, resources, gender and age
Board leadership duality	Separate chairperson and CEO	Separate chairperson and CEO
Chairperson independence	Non-executive director	Not covered
Chairman election	Annually	Not covered
NEDs rotation	A third should rotate every year	At least once in three years
Executive directors (EDs)	Minimum of two	No definite number
Board meetings	At least quarterly	At least quarterly
Company secretariat	Appoint a company secretary	Appoint a company secretary
Board committees	Audit, remuneration & nomination	Audit and remuneration
Performance assessment	Report board appraisal process	Perform annual evaluation
Multiple directorship	Not specified	No limit
Director/insider share dealings	Prohibits insider trading	Prohibits insider trading
Risk Management, Internal Audit and Control: Risk Management		
Internal audit	Create internal audit function	Create internal audit function
Internal control system	Create internal control systems	Establish a risk management committee
Accounting and auditing	Internal audit function and audit committee	Internal audit function and audit committee
Audit committee composition	At least 3 and all must be NEDs	At least one member should be financially literate
Accounting/financial reporting	Accounting standard (IFRS)	Not specified
Relationship with shareholders	Equitable treatment of all shareholders irrespective of the amount of shareholding	Equitable treatment of all shareholders irrespective of the amount of shareholding
Integrated Sustainability Reporting		
Ethics	Code of ethics	Code of ethics
Environment	Environmental reporting	Environmental reporting
IT governance	Establish IT governance framework	Not covered
Alternative Dispute Resolution (ADR)	Disclose ADR	Disclose ADR
Health and safety	Health and safety	Health and safety
Affirmative/employment equity	Equality in employment	Equality in employment
Black empowerment	Black empowerment	Not covered
HIV/AIDS and diseases	HIV/AIDS	HIV/AIDS, malaria and others
Compliance and Enforcement		
Compliance or regulation	Voluntary or self-regulation	Voluntary or self-regulation
Application of code	All firms irrespective of form	Listed and other public firms
Compliance Model	Apply or explain	Comply or explain
Reporting system	Triple bottom line	Triple bottom line
Compliance enforcement bodies	Board, institutional investors and other stakeholders	Boards and shareholders
Kind of corporate governance	Inclusive stakeholder CG	Affirmative stakeholder CG

Note: Compiled from South Africa (King III) 2009 (The Institute of Directors in Southern Africa (IoDSA), 2009) and Nigeria (2011) corporate governance principles (Nigeria SEC, 2011).

The next section discusses some of the CG empirical research conducted in Africa.

3.6 Empirical Evidence on Corporate Governance and Firm Performance in Africa

The issues of CG and firm performance have been investigated extensively in developed economies and it is widely noted that sound CG enhances firm performance albeit with contradictory results (Hearn, 2011, Andreasson, 2011, Barako et al., 2006, Morck et al., 2004, Hillman and Dalziel, 2003, Erhardt et al., 2003, Daily et al., 2003). A major concern of previous research has been the link between CG mechanisms and firm financial performance which mainly focused on developed and emerging stock markets of Europe, America and Asia-Pacific (Ntim, 2013c). Indeed, such studies have only started gaining ground in emerging African economies (see table 4 below for summary of studies).

To begin with, Sanda et al. (2005) examined 93 firms quoted on the Nigerian Stock Exchange for the period 1996–1999 using typical board variables such as board size, ownership structure, CEO duality, proportion of outside directors, leverage on ROA, ROE, Tobin Q and PE ratio performance variables. Most of the variables in the study did not show significant relationships. A major issue with this study is the use of Ordinary Least Squares (OLS) in measuring relationships, which does not capture rigorously time and sectorial variations.

From a disclosure angle, Barako et al. (2006) conducted a longitudinal study to examine the extent to which ownership structure, corporate governance attributes and company characteristics impact on voluntary disclosure practices in 54 Kenyan listed firms from 1992 to 2001. Their findings suggest that the presence of an audit committee, institutional and foreign ownership is significantly associated with the level of voluntary disclosure, but the proportion of non-executive directors had significantly negative association with the extent of voluntary disclosure. However, the years covered by this study were before the implementation of the Kenyan CG code. Hence there is a need for further investigation post CG code implementation.

A study by Kyereboah-Coleman and Biekpe (2006b) examined the influence of board composition, board size and CEO duality on ROA, Tobin's q and growth in sales of

non-financial registered firms on the Ghana Stock Exchange between 1990–2001. They arrived at inconclusive results. The same authors conducted similar research (Kyereboah-Coleman and Biekpe, 2006a) using instead 100 non-traditional export (NTE) sector firms in Ghana for the period 1995–2004. They still arrived at inconclusive results regarding CEO duality, board size and firm performance. However, they showed a positive significant relationship between NEDs, ownership structure and firm performance. A problem with both studies is that they used few CG variables and did not test for endogeneity between the variables. An inclusion of many CG characteristic variables and a test of endogeneity would have improved the robustness of their findings.

More so, Kyereboah-Coleman (2008) conducted one of the rare studies which looked at CG and performance across different countries using 103 listed firms from South Africa, Ghana, Nigeria and Kenya for the period 1997–2001. His results indicated large and independent boards, size of audit committees and the frequency of meetings have positive influence on firm performance. However, CEO duality, CEO's tenure and board activity intensity had a negative relationship with firm performance. Though this study was a major attempt to compare CG across countries, the study suffers from sample bias. For example, Nigeria with more than 200 companies has just 16 firms represented in the sample while a small stock market like Ghana has 22 firms. In addition, theoretically the study discussed board composition in terms of resource dependency and agency theory. However, the composition of the board was measured using agency theory insider/outsider constructs only. A comprehensive view of composition would have looked at, in addition to agency theory construct, a resource dependency view which includes board interlock (proportion of board members who sit on other boards) and board busyness. In addition, the period of data collection covered the period before any corporate governance codes were instituted in African economies except for South Africa's King I report. Therefore, there is a need to further investigate CG mechanisms in a period after the implementation of CG codes across the two biggest economies in Africa and when these codes are more likely to have achieve some level of maturity and adaptation (2010–2015 is ideal). More so, Kyereboah-Coleman (2008) employed OLS regressions, which does not adequately control for endogeneity. To address this limitation, this thesis controls for endogeneity and provides robust findings.

In addition, one of the few studies from North Africa was conducted by Khanchel El Mehdi (2007), employing OLS regression for 24 registered firms from the Tunisian Stock Exchange for the period 2000 to 2005. His results indicate a strong relationship between governance and firm financial performance. Similarly, a study conducted by Abor (2007) using a sample of 22 listed firms on the GSE during 1998–2003 showed a significantly positive effect between board size, board composition, CEO duality and capital structure of firms. Similarly, Ehikioya (2009) examined 107 firms listed on the Nigerian Stock Exchange for the period 1998 to 2002 and the results revealed that ownership concentration and leverage had a positive impact on firm performance but CEO duality negatively impacted on firm performance. In Kenya, Mang'unyi (2011) studied ownership structure and firm performance using a survey sample of 40 bank managers from Kenyan and results indicate no significant relationship between type of ownership and financial performance of Kenyan banking firms. A major problem with these studies is they fail to control for endogenous effect between variables. More so, they also examined CG variables at a time when CG codes were still under development, and they are all single country studies. In addition, they used very few CG variables against one or two performance variables without testing for robustness and endogeneity.

However, Ntim (2012a) studied the relationship between director share-ownership and firm performance using 169 listed firms from 2002 to 2007 in South Africa. His results showed a statistically significant positive relationship between director share-ownership and firm performance. In another study, Ntim (2013c) used a sample of 169 South African listed firms in the period from 2002 to 2007 and showed positive association between a broad set of good CG practices and firm financial performance. More so, in one of the rare studies on board diversity in Africa, Ntim (2014) investigated the effects of board ethnic and gender diversity on market valuation. His results indicate that board diversity is positively linked to market valuation. A further study by Ntim et al. (2014a) examined the association between executive compensation and firm financial performance. Findings show insignificant executive pay and performance association based on OLS, but significant association based on 3SLS. In a more recent study, Ntim et al. (2015b) used 169 South African firms for the period 2002 to 2011 and reported positive board size–firm valuation association, with larger boards providing superior access to resources. Though the five former studies have

somewhat elucidated our understanding of some CG variables and firm performance, the studies are however limited to South Africa and measured CG variables in isolation to each other. More so, computation of CG indices is based on the King II report, hence a need for studies which investigate the CG indices in South Africa using the most recent King III guidelines. Furthermore, these studies were limited to non-financial firms. The current study includes both non-financial and financial firms and advances a comprehensive articulation of CG constructs and their impact on firm outcomes across more than one country and therefore enhances generalisation.

Table 4: Summary of Key Empirical Studies on CG and Performance Nexus in Africa

Study and Country	Sample	Period	Theoretical Lens	Analytical Approach	CG Mechanism Index	Performance Variables Unit	Results
(Sanda et al., 2005) Nigeria	93 listed firms	1996–1999	Agency Theory	Equilibrium Variable Model	NEDs, board size, CEO duality, ownership structure, leverage	ROA, ROE, PE ratio, Tobin's Q	• Positive effect between leverage and firm performance • Mixed results on board size, CEO duality, directors' shareholding and firm performance
(Kyereboah-Coleman and Biekpe, 2006a) Ghana	100 non-traditional export firms	1995–2004	Agency Theory	Equilibrium Variable Model	Board size, CEO duality, NEDs, ownership structure	ROA, Tobin's Q, sales growth	• Inconclusive results on the impact of CEO duality and board size on firm performance • Positive significant relationship between NEDs, ownership structure and firm performance
(Kyereboah-Coleman and Biekpe, 2006b) Ghana	16 listed non-financial firms	1990–2001	Agency Theory	Equilibrium Variable Model	Board size, CEO duality, NEDs	Tobin's Q, ROA, sales growth	• Inconclusive results on the impact of CEO duality and board size on firm performance
(Khanchel El Mehdi, 2007) Tunisia	24 non-financial firms listed on the Tunisian Stock Exchange	2000–2005	Agency Theory	Equilibrium Variable Model	NEDs, CEO compensation, CEO duality, board size, board meeting frequency	ROA, growth in total assets	• Positive significant relationship between board size, CEO compensation, NEDs and firm performance
(Abor, 2007) Ghana	22 listed firms	1998–2003	Agency Theory	Equilibrium Variable Model	CEO duality, board size, NEDs, CEO tenure	Capital structure	• Positive relationship between board size, NEDs, CEO duality and capital structure
(Kyereboah-Coleman, 2008) South Africa, Ghana, Nigeria and Kenya	103 listed firms	1997–2001	Agency Theory and RDT	Equilibrium Variable Model	NEDs, board size, board activity intensity, CEO duality, CEO tenure, audit committee, institutional ownership	ROA, Tobin's Q	• Large and independent boards, size of audit committees and the frequency of their meetings have positive influence on firm performance • CEO duality and tenure, board activity intensity had a negative relationship with firm performance
(Ehikioya, 2009) Nigeria	107 non-financial firms listed on the	1998–2002	Agency Theory	Equilibrium Variable Model	NEDs, CEO duality, NEDs, board size, ownership	ROA, ROE, PE ratio, Tobin's Q	• Positive significant relationship between ownership concentration, leverage and performance proxies

	Nigerian stock exchange						• Negatively relationship between CEO duality and Performance proxies.
(Ntim, 2012a) South Africa	169 non-financial listed firms	2002–2007	Agency Theory	Equilibrium Variable Model	Director shareholding structure	Tobin's Q, ROA, TSR	Positive impact of director ownership on firm performance
(Ntim, 2013c) South Africa	169 non-financial listed firms	2002–2007	Agency Theory	Compliance Index Model	Integrated CG indices	Tobin's Q, ROA, TSR	• Positive impact of integrated CG on firm performance
(Ntim et al., 2014a) South Africa	291 non-financial listed firms	2002–2007	Agency Theory	Equilibrium Variable Model	Executive compensation	TSR	• Positive impact of executive compensation and firm performance.
(Ntim, 2014) South Africa	291 non-financial listed firms	2002–2007	Agency Theory and RDT	Equilibrium Variable Model	Ethnic and gender diversity	Tobin's Q	• Positive impact of board ethnic and gender diversity on firm Financial performance.
(Ntim et al., 2015b) South Africa	169 non-financial listed firms	2002–2011	Agency Theory and RDT	Equilibrium Variable Model	Board size	Tobin's Q	• Positive impact of board size on firm financial performance.

3.7 Summary of Chapter

Building from Chapter 2, this chapter has presented the development of CG codes and governance institutions in South Africa and Nigeria and shows that CG regimes in these countries have been shaped by differences and similarities in economic institutions. Specifically, using NIE as a complementary theoretical angle to the earlier discussed theories in Chapter 2, this chapter has provided a robust articulation of the different governance institutions within the selected countries and how these various set-ups fit within the shareholder CG regime, the stakeholder CG regime, and or a blend of both.

Drawing from NIE and the contextual development of governance institutions and codes in both countries, the chapter has compared the different CG codes and justifies why these institutional contexts are significant in examining the main research question of the thesis. Finally, a discussion of key empirical works conducted in Africa was presented.

Developing from chapters 1, 2 and 3, the next chapter (Chapter 4) presents the various hypotheses to examine the research questions in Chapter 1. Specifically, hypotheses 1 to 9 and 11 examine the equilibrium variables model (sub-research question 2), whereas hypothesis 10a, b and c test the compliance index model (sub-research question 1).

CHAPTER 4

4.0 HYPOTHESIS DEVELOPMENT

4.1 Introduction

This chapter presents the hypotheses developed from the extant literature and developed from the theories discussed in chapters 2 and 3. It begins with section 4.2 which discusses literature leading to the development of three hypotheses (hypotheses 1a, 1b and 1c). Section 4.3 discusses extant literature on board leadership separation and hypothesis 2 is developed. 4.4 discusses extant literature on board size with its corresponding hypothesis (hypothesis 3). 4.5 presents prior research on board gender diversity and its consequent hypothesis (hypothesis 4). Section 4.6. develops a hypothesis for frequency of board meetings (hypothesis 5). 4.7 discusses ethnic diversity and development of hypothesis 6 based on evidence from the extant literature. Further, in section 4.8, theoretical and empirical debates on board interlocks and board busyness lead to the development of two hypotheses (hypothesis 7a and 7b). Extant literature on gearing as an internal CG mechanism is discussed in section 4.9 with its corresponding hypothesis (hypothesis 8). Corporate ownership literature covering literature on institutional shareholding and director ownership is presented in section 4.9 with two hypotheses (hypotheses 9a and 9b). Section 4.11 discusses the extant literature on compliance with corporate governance code. This section covers literature on compliance with country-composite CG code. CG compliance guidelines are further divided into shareholder compliance provisions and stakeholder compliance guidelines respectively and hypotheses 10a, 10b, 10c are developed. Finally, the hypothesis in section 4.12 is developed from the literature on board audit committee independence. Note that hypotheses 1 to 9 and hypothesis 11 are developed from internal CG structures endogenously (selected by firms internally) chosen by firms and measured by the equilibrium variable model. Hence hypotheses 1 to 9 and hypothesis 11 examine sub-research question two (see section 1.4.1.1) stated as 'Do endogenously generated alternative firm-level internal corporate governance mechanisms affect firm financial performance in Nigeria and South Africa?', whereas hypotheses 10a, 10b and 10c are developed from compliance with country-level CG code and measured by the compliance index model and examine sub-research question one stated as (section 1.4.1.1) 'How and in what ways does firm-level

compliance with exogenously developed corporate governance provisions impact on firm financial performance in Nigeria and South Africa?' Sub-research question three (3) stated as 'Are a firm's choices of individual internal CG structures as measured by the equilibrium variable model associated with better firm performance than firm-level compliance with CG provisions as measured by the compliance index model?' is examined by comparing the results of hypotheses 1 to 9 and 11 with those of hypotheses 10a, b and c.

4.2 Board Composition

The board composition construct signifies the balance between non-executive directors (outside directors) and executive directors (inside directors). It is operationalised traditionally in terms of percentage of non-executive directors (NED) on the board (Minichilli et al., 2012, Hearn, 2011, Miller and Del Carmen Triana, 2009, Kula, 2005, Nahar Abdullah, 2004, Kiel and Nicholson, 2003, Hillman and Dalziel, 2003, Erhardt et al., 2003). Grounded in agency theory, board independence is achieved when a majority of board members are non-executive directors (NEDs) (Kula, 2005, Adams and Mehran, 2005, Klapper and Love, 2004, Keenan, 2004). Therefore, by inference, NEDs are assumed to be more effective in monitoring top management of firms on behalf of the shareholders than executive directors. NEDs' effectiveness is attributed to their independence from the firm and CEO (Kula, 2005, Adams and Mehran, 2005, Klapper and Love, 2004, Keenan, 2004). In other words, the argument here is that inside or executive directors (EDs) may lack independence and objectivity from management of firms and thus are not capable of reducing agency cost and protecting shareholder value creation. In fact, members of a board of directors who are connected with the day-to-day management of the firm are less effective monitors and controllers of management as their position as inside directors perpetuates agency problems and may not enhance shareholder value (Kula, 2005, Adams and Mehran, 2005, Klapper and Love, 2004, Keenan, 2004). Consistent with preceding argument, firm performance can only be enhanced through the inclusion of more NEDs than executive directors on corporate boards. Indeed, agency theorists argue more outsiders on the board means monitoring and control will be effective, and this will therefore translate into shareholder value maximisation which will mean an increase in the firm's financial performance.

The relationship between NEDs and firm performance has often generated some evidence suggesting that increasing the number of NEDs enhances performance. In fact, some studies have found a positive relationship (e.g. Pearce and Zahra, 1992, Wagner III et al., 1998, Ibrahim and Samad, 2011, Kyereboah-Coleman, 2008, Dahya and McConnell, 2007), while other scholars have found no relationship between this nexus (e.g. Bhagat and Black, 2002, Vafeas and Theodorou, 1998, Weir et al., 2002, Sanda et al., 2005). Owing to these mixed empirical findings, this study proposes the following hypotheses:

$H_0$1a: There is a statistically significant positive relationship between the proportion of NEDs and firm financial performance as measured by ROCE and Q-ratio.

$H_1$1a: There is no statistically significant positive relationship between the proportion of NEDs and firm financial performance as measured by ROCE and Q-ratio.

Based on agency theory, most researchers have investigated the impact of NED on firm performance in both advanced and emerging African economies. However, very limited research has been conducted using stewardship theory recommendation for more executive directors than NEDs even in advanced economies and there seems to be nonexistence of this construct in an African milieu. Stewardship theorists advocate for an insider-dominated board for easy decision making. Advocates of this theory opine that increase in firm financial performance is associated with a majority of EDs who naturally work towards value maximisation for shareholders (Nicholson and Kiel, 2007). It is argued that since inside directors' work within the firm on a day-to-day basis, they understand the operation of the firm better than NEDs and so make superior decisions which enhance firm financial performance (Donaldson and Davis, 1994, Pearce and Zahra, 1992, Donaldson, 1990, Nicholson and Kiel, 2007). By inference, because EDs have a better knowledge of the firm, they inherently have superior access to relevant information and are therefore able to make better-informed decisions, which enhances financial performance.

However, very few studies have provided empirical evidence to support the EDs–firm financial performance nexus. Indeed, as Nicholson and Kiel (2007) noted, stewardship theorist literature has not established the processes which associate EDs with increased firm performance (attributed to favouritism towards agency theory), although by making superior decisions firm performance is affected positively. Hence, the following null and alternative hypotheses are proposed:

$H_0$1b: There is a statistically significant positive relationship between the proportion of EDs and firm financial performance as measured by ROCE and Q-ratio.

$H_1$1b: There is no statistically significant positive relationship between the proportion of EDs and firm financial performance as measured by ROCE and Q-ratio.

In addition to the proportion of non-executive directors and executive directors discussed above, there is a general agreement in CG scholarship, policy and practice that the presence of independent NEDs (referred to as non-executive directors who do not have a stake in the firm) increases board monitoring and controls and reduces agency cost (Nicholson and Kiel, 2007). Independent NEDs are unique from ordinary NEDs in that they have no link to any member of the company or shareholder of the company, whereas NEDs may have some stake in the company either as a shareholder or representative of shareholders, past employee of the firm or member of a special interest group etc. Therefore, independent NEDs (INEDs) will provide impartial judgements and may not suffer from conflict of interest (Terjesen et al., 2016). From agency theory perspective, INEDs curtail agency costs in corporations, which improves firm performance since these directors are impartial in their decision-making process (Ntim, 2011, pp.7). Similarly, INEDs are opined to be able to increase independence in their advice role and monitoring and are able to discipline managers. In addition, from a resource dependency perspective, INEDs act a resource because of their experience, business contacts and reputation, which enhances firm valuation and performance (Nicholson and Kiel, 2007, Ntim, 2011).

However, stewardship theory contends that, owing to the limited knowledge of INEDs, they are be unable to understand the complexities of a firm and therefore will be incapable of providing relevant advice to management of firms (Ntim, 2011, Weir and Laing, 2001). Others have argued that INEDs have limited time to perform their monitoring, control, advisory duties because they are part-timers and mostly are directors on other boards and may be too busy to serve (Haniffa and Hudaib, 2006, Lipton and Lorsch, 1992), which is detrimental to firm economic performance.

Drawing from the conflicting nature of the impact of INED, some studies have reported increase in firm performance (e.g. Kiel and Nicholson, 2003, Ntim, 2011, Weir et al., 2002) whereas others have reported negative associations (e.g. Agrawal and Knoeber, 1996, Mangena and Chamisa, 2008). In Africa, some authors have reported positive INED–firm performance relations. For example, Ghana Abor Abor (2007), Abor and Biekpe (2007) and Kyereboah-Coleman and Biekpe (2006b) reported positive associations. Khanchel El Mehdi (2007), Mangena et al. (2012) and Ntim (2011) also reported positive associations in Tunisia, Zimbabwe and South Africa respectively. However, Sanda et al. (2011) reported a negative association between INEDs and firm performance in Nigeria. A recent comparative study including Nigeria by Zattoni et al. (2017) reports that the effect of board independence on firm financial performance is contingent on the specific national context. Following from this mixed extant empirical literature, this study hypothesises that:

$H_0$1c: There is a statistically significant positive relationship between the proportion of INEDs and firm financial performance as measured by ROCE and Q-ratio.

$H_1$1c: There is no statistically significant positive relationship between the proportion of INEDs and firm financial performance as measured by ROCE and Q-ratio.

4.3 Board Leadership Structure (CEO/Chairman Separation)

The debate on board leadership (CEO duality) theorises the separation of the chairman of the board and CEO so as to balance power towards a powerful board, which limits insider dominance (Nicholson and Kiel, 2007, Kula, 2005). This argument is rooted with sympathisers of agency theory. The argument here is that separating the chairman of the board and CEO ensures the necessary independence of judgement which enhances more active debates and dialogue between executive management and the board (Nicholson and Kiel, 2007, Kula, 2005). Hence, by separating these functions, efficacy, accountability, transparency of the board are achieved (Nicholson and Kiel, 2007, Kula, 2005). In similar reasoning, the separation of the positions of CEO and chairman is a more effective measure of control. In relation to the preceding reasoning, the separation of the CEO and chairman positions is anticipated to enhance firm financial performance (Nahar Abdullah, 2004). Therefore, when there is CEO-chairman duality, the board's ability to monitor and control management decreases which consequently leads to lack of independence of the board and thus agency conflict may continue and negatively impact on shareholders' value maximisation goal. Similarly, some scholars have argued that CEO duality gives too much power to the CEOs to influence board decisions in a manner that suits them, which may not be in line with the interests of shareholders and therefore will adversely affect performance and thus increase agency cost. Hence, if leadership is concentrated in a single person, the duly empowered CEO will act as a superior ruler which compromises board independence in decision making (Nahar Abdullah, 2004). Thus, separating the positions will dilute the CEO's power and control over the board and thus reduce the potential for EDs dominating decision making of the board.

On a contrary view, stewardship theorists argue for the CEO to double as the chairman of the board. Proponents posit that a duly empowered CEO possesses the necessary technical and managerial competence that contributes to easy decision making (Hillman and Dalziel, 2003, Carter et al., 2003, Hermalin and Weisbach, 2001, Wagner III et al., 1998, Davis et al., 1997, Donaldson and Davis, 1994)). Furthermore, CEO duality provides a milieu/avenue for unified leadership of firms

which builds trust and stimulates the motivation to perform well and, thus, enhances organisational performance.

Like research on board composition, empirical results on CEO duality and firm performance nexus have generated inconclusive findings. For example, Baliga et al. (1996) investigated this nexus using Fortune 500 companies from 1980 to 1991. Their results indicate that a firm's performance is indifferent to changes in a firm's leadership duality. They also showed that there was limited evidence to link changes in CEO duality status and operating performance. Finally they argued that the evidence that shows CEO duality status of firms and its impact on firm performance was weak even after controlling for other factors (Baliga et al., 1996). Other studies, using stock market performance measures, have found no significant impact of leadership separation on firm performance (e.g. Baliga et al., 1996, Pearce and Zahra, 1992, Pearce and Zahra, 1991)). Thus, following the arguments for CEO duality, I propose the following hypotheses:

$H_0 2$: There is a statistically significant positive relationship between CEO/chairman role separation and firm financial performance as measured by ROCE and Q-ratio.

$H_1 2$: There is no statistically significant positive relationship between CEO/Chairman role separation and firm financial performance as measured by ROCE and Q-ratio.

4.4 Board Size

There has been considerable empirical research which focuses on the effect of board size on a firm's financial performance. However as Finegold et al. (2007) noted, many CG studies have the size of boards either as part of analysing the insider–outsider ratio or a control variable. The size of boards has predominantly been studied from two dissimilar perspectives (Van den Berghe and Levrau, 2004). To begin with, it has been opined that the number of directors on a board may influence the board functioning and hence firm financial performance (Van Den Berghe and Carchon, 2002, Hillman and Dalziel, 2003, Nahar Abdullah, 2004, Van den Berghe and Levrau, 2004, Kula, 2005). A key argument in this line of reasoning is rooted in organisation

theory. The theory opines that if the size of a group or team increases, it becomes very ineffective and difficult to coordinate (Pfeffer, 1972, Pfeffer, 1973). As a result, agency theorists have taken two opposing stands in relation to this reasoning. Drawing from organisational theory, some agency theorists have argued that smaller boards are more effective and efficient than larger boards in enhancing firm financial performance (Pearce and Zahra, 1992, Lipton and Lorsch, 1992, Jensen, 1993).

Indeed Lipton and Lorsch (1992) argue that while boards organise, plan, control, monitor and direct the firm, board size also has financial cost implications associated with it. Thus, all things being equal, a larger board consumes more financial and non-pecuniary resources of the firm in the form of privileges, bonuses and remuneration than smaller boards. More so, Jensen (1993, p.865) contends that when boards become too large, it is not only challenging and cumbersome to coordinate, it is comparatively very easy for the CEO to dominate and control the operations because directors become 'free riders'. Thus, it is inferred that there will be cohesiveness and more effective discussions and critical decisions with a smaller board. In fact, Lipton and Lorsch (1992, p.68) contend that smaller boards enable directors to unequivocally express and contribute their thoughts and views within the available limited time. Indeed, the argument is that bigger boards are prone to suffering from higher agency costs and are far less effective to monitor and control management compared to smaller boards.

Contrary to the preceding view, from another angle, some agency theorists and resource dependency theorists have promoted the idea of bigger boards, which are argued to contribute positively to firm financial performance. From a resource point of view, bigger boards are endowed with a greater variety of skills, experience, technical abilities and contacts than smaller boards, which consequently provides a milieu to secure critical resources needed by the firm (Lipton and Lorsch, 1992, Pearce and Zahra, 1992, Erhardt et al., 2003, Hillman and Dalziel, 2003, Kiel and Nicholson, 2003, Kula, 2005). More so, bigger boards are argued to be well positioned to provide access to corporate external environmental resources, which consequently reduces environmental uncertainties and helps in ensuring the safeguarding of critical environmental resources (e.g. finance, raw materials and contracts) (Huse, 2000, Bhagat and Black, 2002, Daily et al., 2003, Erhardt et al.,

2003, Nahar Abdullah, 2004, Florackis, 2005). Similarly, some agency theorists have contended that bigger corporate boards can monitor and control management. More so, Kiel and Nicholson (2003) opine that boards with a large number of directors with wide-ranging expertise are better placed to scrutinise and monitor managerial decisions.

While this area has been studied extensively in developed economies, most recently gaining momentum in developing economies, the empirical evidence related to board size and firm performance nexus is mixed (Hillman and Dalziel, 2003, Kiel and Nicholson, 2003, Nahar Abdullah, 2004, Adams and Mehran, 2005, Kyereboah-Coleman and Biekpe, 2006a, Khanchel El Mehdi, 2007). For example, with a sample of 452 large US industrial firms between 1984 and 1991, Yermack (1996) discovered an inverse relationship between the size of boards and firm value. Yermack (1996) study was criticised for using only large US firms, and it was argued that his results were inconsistent when applied to smaller firms. Eisenberg et al. (1998) estimated this construct using data for 1992 to 1994 with a sample of 879 small and medium-size Finnish firms. They also found a negative relationship between board size and firm performance. Similarly, Mak and Kusnadi (2005), using a sample of Singaporean and Malaysian firms, found the same negative results. In same construct, Guest (2009) used a sample of 2,746 UK listed firms covering the period 1981 to 2002 and also reported a negative relationship between the size of the board and firm performance. These studies thus provide empirical evidence that smaller boards may be more prone to effective executive monitoring, candid assessment of management performance and fast, effective and easy decision-making (Lipton and Lorsch, 1992, Pearce and Zahra, 1992, Jensen, 1993).

Contrary to the above studies, some scholars have reported a positive relationship between board size and performance construct. For example, a study by Adams and Mehran (2005) showed a positive relationship between the size of boards and firm performance. Kiel and Nicholson (2003) found similar results in Switzerland. This positive relationship is very visible in the few studies that have been conducted in Africa. For instance, Sanda et al. (2005), using a sample of 93 Nigerian-listed firms for the period 1996–1999, showed a positive relationship between board size and profitability (measured in terms of ROE). Similarly, using Ghanaian firms, Abor

(2007) showed a statistically significant and positive relationship between board size and firm performance. Recently Ntim et al. (2015b), using 169 South African firms from 2002 to 2011, showed a positive association between board size and firm valuation. In fact Ntim et al. (2015b) suggest that larger boards provide better access to external and internal resources. Following from the preceding arguments and noting that empirical research as discussed is mixed, the null and alternative hypotheses are proposed as follows:

$H_0$3: There is a statistically significant positive relationship between board size and firm financial performance as measured by both ROCE and the Q-ratio.

$H_1$3: There is no statistically significant positive relationship between board size and firm financial performance as measured by both ROCE and the Q-ratio.

4.5 Board Gender Composition (Gender Diversity)

The issue of diversity has attracted considerable attention especially after the most recent financial crisis. This construct goes beyond traditional board structure research constructs and looks more at board demographic characteristics. The study is rooted in Hambrick and Mason (1984) upper echelons theory. The theory was developed in the 1980s and aimed at explaining how corporate outcomes, strategic choices and firm performance levels are somewhat partially predicted by top managerial demographic characteristics (Hambrick and Mason, 1984). This reasoning has been borrowed and applied to the board of directors in recent years. In fact Tuggle et al. (2010) opine that board of directors' intellectual frames which may be attributable to gender differences play an essential function in board decision making and can positively impact firm outcomes. Daily and Schwenk (1996) noted that heterogeneity or homogeneity of teams such as boards has a bearing on firm financial outcomes.

One of the areas where the diversity contruct has been applied to board research is gender diversity. Until a decade ago, studies which had centred on diversity contructs and their impact on firm performance had largely concentrated on workforce diversity (Erhardt et al., 2003). Campbell and Mínguez-Vera (2008) contend that the presence of female directors on corporate boards has been a centre of attention and a high-

profile issue in the last decade. However, studies in this area have extensively focused on the Anglo-Saxon CG regimes. Gender representation on corporate boards has become a measure of board diversity. In the US for example , this is evident with the increasing numbers of black, Hispanic and Asian-American women in corporate boards (Campbell and Mínguez-Vera, 2008).

There exist two schools of thought regarding female representation on corporate boards. First, proponents of increased female representation argue that the presence of female directors in corporate boards can enhance the execution of board strategic function and increase firm outcomes (Fondas, 2000). Fondas (2000) contends that female directors have a slight edge over their male counterparts in relation to impacting a firm's strategic planning. Consequently, female directors can potentially enhance the board's performance of strategic role. Rose (2007) opines that female directors are more likely to express their opinion and confess ignorance during board discussions than male directors. Similarly, Dimovski and Brooks (2006) contend that including female directors on corporate boards bring additional viewpoints to board decision-making, which would not be possible in a board consisting of only men. However, it is argued that if women are appointed to boards just to motivate societal pressure for greater equality in gender, then female representation on boards will have a negative impact on firm performance (Ntim, 2015).

Empirical research on gender diversity in boards has also generated some mixed results. For example, Rose (2007) conducted a study of listed Danish firms during the period of 1998–2001 and she didn't find any significant relationship between gender diversity and firm performance. Similarly with a sample of Norwegian firms, Bøhren and Strøm (2010) showed no significant relationship between gender diversity and firm performance.

On the contrary, Carter et al. (2003) examined gender diversity based on data from Fortune 1000 firms and their results indicate that there is a significant positive association between gender diversity and firm performance (measured using Tobin's Q). Similarly, Erhardt et al. (2003) examined this construct based on US data and reported that gender-diverse boards have a statistically significant impact on firm performance. Adams and Ferreira (2004) found that less diverse boards are associated

with a more volatile stock price and that greater board diversity is associated with higher firm performance. Because of the mixed empirical results, the following hypotheses are proposed:

$H_0$4: There is a statistically significant positive relationship between board gender diversity and firm financial performance as measured by ROCE and Q-ratio.

$H_1$4: There is no statistically significant positive relationship between board gender diversity and firm financial performance as measured by ROCE and Q-ratio.

4.6 Frequency of Board Meetings

The frequency of board meetings in recent years has attracted considerable attention. The relationship between the frequency of board meetings and organisation financial outcomes has been echoed to be one of the internal corporate governance mechanisms that has attracted a lot of attention both for researchers and policy makers. There are two theoretical perspectives when it comes to this construct: those who favour frequent board meetings and those who do not favour frequent board meetings (Brick and Chidambaran, 2010, Vafeas and Theodorou, 1998, Jensen, 1993, Lipton and Lorsch, 1992)).

To begin with, those who advocate for frequent board meetings opine that meetings provide boards of directors time to monitor management and set strategy, while reducing agency cost (Vafeas, 1999 , p.118). The premise here is frequency of board meetings ensures board activity intensity, thereby enhancing effectiveness of monitoring and control of management behaviour (Vafeas, 1999). According to Lipton and Lorsch (1992), the most widely shared concern is directors lack of time to perform board tasks. Thus, frequent board meetings may assist directors to remain abreast and well-informed of essential developments within an organisation. As a result, directors will be better placed to follow up and take care of emerging issues affecting the firm. More so, from an agency theoretic angle, frequent board meetings are argued to be essential for the board to be able to protect shareholder value

maximisation by ensuring managers make decisions which do not stand in the way of shareholder expectations (Vafeas, 1999, Lipton and Lorsch, 1992). Indeed, Conger et al. (1998) add that the time directors spend in board meetings is an essential resource in improving board effectiveness which has a positive impact on firm performance. By inference, *ceteris paribus*, more frequent board meetings enhance the quality of decision-making, managerial monitoring and control, which affects firm financial performance positively.

Taking a contrary view, frequent board meetings are not essentially useful because the limited period directors spend together during board meetings is not necessarily utilised for the significant interchange of ideas with management or among themselves (Vafeas, 1999). As a result, the CEO virtually set the agenda for board meetings (Vafeas, 1999, Jensen, 1993). More so, board meetings are very expensive (e.g. directors' meeting fees, managerial time, travel expenses, refreshments and other related expenses) (Brick and Chidambaran, 2010, Vafeas, 1999, Lipton and Lorsch, 1992).

In relation to the preceding arguments, the empirical evidence on frequency of board meetings and firm financial performance is very limited, which does indicate that this is an important gap to fill as to date very little research has looked at this construct in an African context. In addition, the limited empirical evidence has generated conflicting results. For instance, Vafeas (1999) studied a sample of 307 US-listed firms over the period 1990–1994, and his results indicated a statistically negatively significant relationship between the frequency of board meetings and firm financial performance (Q-ratio). However, he discovered that firms' operating performance was significantly improved in years of abnormal/increase in board meetings.

On the contrary, Karamanou and Vafeas (2005) conducted another research using a sample of 275 US-listed firms from 1995–2000 and found a positive relationship between frequency of board meetings and firm financial performance. In an African context, Mangena and Tauringana (2006) studied a sample of 157 Zimbabwean-listed firms covering the period 2001–2003 and they found a positive relationship between firm performance and frequency of board meetings. In fact, their results support the premise that board oversight function is more intense in periods of crisis, and firms

who have frequent board meetings perform better. Following from the arguments and empirical findings, the following hypotheses are proposed:

$H_0$5: There is a statistically significant positive relationship between frequency of board meetings and firm financial performance as measured by ROCE and Q-ratio.

$H_1$5: There is no statistically significant positive relationship between frequency of board meetings and firm financial performance as measured by ROCE and Q-ratio.

4.7 Board Ethnic Composition (Ethnic Diversity)

Among the various underlying attributes of teams, ethnic diversity has been argued to be particularly relevant in corporate settings and has been used in the past to study top management team attributes, and this has been applied to corporate boards over the last two decades (Minichilli et al., 2009). The construct of ethnic diversity of organisational boards covers at least two important premises. First, that ethnic minorities with external networks, human capital, information and other relevant attributes merit opportunities to serve as directors on corporate boards (Carter et al., 2010). In line with this reasoning, understanding how homogeneous or identical forms of social capital grounded on common race and ethnic affiliations can supplement diverse forms that create wider relationships across margins and institutional corporations can provide needed support in an increasingly diverse business environment (Van der Walt and Ingley, 2003 , p.397). Second, ethnic diversity in boards results in better organisational governance, which enhances profitability for the business and increases shareholder value (Carter et al., 2010 ,p.397). Carter et al. (2010,p.397) contend that the business case for ethnic diversity implies that competent ethnic minority directors are not an alternative to traditional corporate directors with homogeneous abilities and aptitudes; nonetheless, qualified ethnic minority board members possess unique individualities which when mixed create additional value for the firm.

More so, resource dependency theory provides another angle to supplement the business case for ethnic diversity in boards. Indeed, ethnic diversity presents

opportunities for unique information sets, which are available to assist management of firms to make better decisions (Van der Walt and Ingley, 2003, Carter et al., 2010). More so, directors with different ethnic backgrounds provide access to and linkages to the external environment which a firm can harness to increase its performance by reducing external uncertainties (Carter et al., 2010, Van der Walt and Ingley, 2003). More so, ethnically diverse boards have the ability to provide legitimacy for firms with both internal and external communities in countries like South Africa because of increasing growth in post-apartheid proportion of ethnic minority groups. Nielsen and Nielsen (2008) add that boards with diverse ethnic backgrounds and skills are better placed to manage complex strategies, compared to boards with homogeneous backgrounds. The same authors contend that firms may boost their capability in confronting challenges in the international business environment by taking on directors with diverse ethnic origins who possess skills, characteristics and experiences which are needed for business survival. More so, ethnically diverse boards are argued to be better in contributing to board critical thinking and innovation (Carter et al., 2010, Van der Walt and Ingley, 2003, Brammer et al., 2007).

Taking an opposing view, though the presence of ethnic minorities on boards is often viewed favourably by some corporate stakeholders, the extant literature is more pessimistic on how ethnic-minority directors can successfully influence board decisions (Brammer et al., 2007, Carter et al., 2010, Carter et al., 2003). From a social psychological theory point of view, ethnic differences in boards reduce social cohesion during board meetings. As a result, this social barrier limits the likelihood that the point of view of ethnic minority directors will influence board decisions (Brammer et al., 2007, Carter et al., 2010). From a social impact theory point of view, directors who possess majority status have a tendency to exert an unequal amount of influence during board decision-making processes.

Empirical results on ethnic diversity and firm performance have been mixed. For instance, Zahra and Stanton (1988), with a sample of US firms, found no relationship between ethnic minorities on the board and firm performance using profit margin, return on assets, sales to equity, EPS and dividends as performance proxies. Similarly, Carter et al. (2010), using a sample of major US firms, did not find any significant association between ethnic diversity and firm performance. However, Carter et al.

(2003) showed a significantly positive relationship between ethnic diversity and firm performance (using Tobin Q's as a proxy) after controlling for other variables that can impact on firm performance. Similarly, Erhardt et al. (2003), using a sample of US firms, discovered a significant positive association between ethnic diversity and firm performance (using ROA and ROE as proxies). More so, in one of the rare studies which examined this construct in Africa, Ntim (2014) investigated the effect of board ethnic diversity on market valuation. His results indicate board ethnic diversity is positively linked to market valuation. Given the preceding discussions and cognisant that ethnic diversity-firm performance nexus is not well established in Africa, the following hypotheses are proposed:

$H_0$6: There is a statistically significant positive relationship between board ethnic diversity and firm financial performance as measured by both ROCE and the Q-ratio.

$H_1$6: There is no statistically significant positive relationship between board ethnic diversity and firm financial performance as measured by both ROCE and the Q-ratio.

4.8 Interlocking Directorates

One of the many areas with limited literature in emerging African economies relates to the concept of interlocking directorates. Significant empirical studies on interlocking directorate constructs have been carried out in the US, the UK, Europe, Canada and Australia. Thus far, the exact extent and structure of interlocking directorates among African firms is still unknown, nor have there been studies linking this construct to firm performance.

From a resource dependency view, boards of directors are potentially an essential strategic resource for the firm, particularly with relation to the firm's external resource needs. These linkages include networks/affiliations to business elite, competitors, banks, or market and industry intelligence (Van der Walt and Ingley, 2003, p.220 , Phan et al., 2003). Unlike agency theory, which asks for more NEDs for the purpose of monitoring management, resource dependency theory holds that

outside directors are interlocks between the firm and its external environment (Pfeffer, 1972, Pfeffer, 1973, Pfeffer and Salancik, 1978, Salancik and Pfeffer, 1978). In this context, diversity is seen as a broader range of backgrounds among outside directors in providing resources needed by the firm (Pfeffer, 1972, Pfeffer, 1973, Pfeffer and Salancik, 1978, Salancik and Pfeffer, 1978). In fact, resource dependence theory contends that organisations appoint NEDs to the board for the purpose of tapping into resources they bring from their external linkages (Pfeffer, 1972, Pfeffer, 1973, Pfeffer and Salancik, 1978, Salancik and Pfeffer, 1978, Peng, 2004). More so, Peng (2004) opines that more resource-rich NEDs are solicited on boards to help bring in needed external resources which enhance the firm's financial performance. It is argued that the size of a firm is directly connected to the number of board interlocks it has with other firms (Ong et al., 2003). In addition, the frequency of board interlocking with financial firms reflects dependency of the firm on the external sources of capital to finance its growth requirements (Ong et al., 2003). In addition, interlocking directors enable firms to acquire scarce resources and thereby assist in survival and growth of the firms. In fact Pfeffer and Salancik (1978) postulate that the principal role of outside directors is to provide the firm with external linkages (e.g. information and expertise), create channels of communication with related firms, provide support from external groups or organisations and legitimise the firm in its external environment. Thus, boards should be composed of members with both internal and external resource links. Internal resources may include executive directors who have knowledge of the firm, while external resources may include business experts, support specialists and community influencers. Therefore, the composition of the board should reflect its resource needs, which consequently enhances firm financial performance.

Contrary to the preceding arguments, from class hegemony theory, interlocks are formed to serve mutual protection of interest of a social class (Phan et al., 2003). Thus, the appointment of board members is driven by identification of similar backgrounds, political beliefs and characteristics within personal networks of existing board members, resulting in 'class hegemony'. As a result, the primary attention of directors will be to serve the purpose of protecting class welfare by extending the courtesy to persons who belong to the class. This has a detrimental effect on the firm performance as this limits criticality and independence in board discussions, leading

to lack of monitoring (Phan et al., 2003). In such a scenario, board members have a *laissez faire* attitude in their functions and as such will be ineffective monitors, and firm value maximisation will fall. In a nutshell, the inclusion of outside directors leads to more interlocks because directors favour nomination of individuals who belong to same social 'class', hence expanding board interlock but with negative effect on firm performance. A similar line of argument is rooted in institutional theory, which argues that appointing NEDs for their networks may merely represent an organisation's attempt to comply with institutional pressures and may not necessarily have a positive impact on firm performance (DiMaggio and Powell, 1983).

The empirical evidence on board interlock is also mixed. For example Fich and Shivdasani (2006) looked at the impact of interlocking directorates on firm performance and their results show an inverse statistically significant relationship to market-to-book ratio of firms. However, Ong et al. (2003) studied interlocking directorates among 295 listed Singaporean firms and found a positive relationship with firm performance (using total assets, ROA, return on sales and profit before tax as proxies). Peng (2004), using 405 publicly listed firms in China, suggests that interlocking directors affect sales growth positively. Fich and White (2005) studied reciprocal CEO interlocks and firm performance using data for 576 firms in 1991, and their results indicated a positive relationship between Tobin's Q and reciprocal CEO interlocks. Pombo and Gutiérrez (2011) also studied board interlocks and firm performance using 335 Colombian firms for the period 1996–2006. They reveal a positive relationship between board interlocks and firm performance (using ROA as a proxy). Following these empirical results, the following hypotheses is proposed in relation to interlocking directorate construct:

H$_0$7a: There is a statistically significant positive relationship between board interlocks and firm financial performance as measured by both ROCE and the Q-ratio.

H$_1$7a: There is no statistically significant positive relationship between board interlocks and firm financial performance as measured by both ROCE and the Q-ratio.

On the other hand, some scholars have argued that director busyness limits the ability of directors to perform their board tasks (Falato et al., 2014, Ferris et al., 2003, Jiraporn et al., 2009). Arguments for the busyness hypothesis suggest that directors holding more directorships outside a firm have less time to spend serving on board as a result of their commitment to attend board meetings in other firms (Jiraporn et al., 2009,pp.819). In addition, busy directors will not be able to monitor, control and evaluate management behaviour which may adversely impact on firm performance. As such, owing to lack of time, busy boards will allow managers to pursue their objectives at the expense of shareholders' interest (Di Pietra et al., 2008).

Conversely, a director's busyness may signal success to fund providers. As Di Pietra et al. (2008) posit, this is because efficient and successful directors tend to sit on other boards, which signals success. This arguably enhances increased equity valuation in the stock market and impacts positively on firm performance.

In Western economies, a limited number of studies had examined the impact of director busyness on firm financial outcomes. For example Di Pietra et al. (2008) and Field et al. (2013) reported a positive director busyness–firm performance association. However, Falato et al. (2014) reported a negative association. There is a dearth of research examining the director busyness–firm performance association. This study attempts to fill this gap by examining the following hypotheses:

H$_0$7b: There is a statistically significant negative relationship between director busyness and firm financial performance as measured by both ROCE and the Q-ratio.

H$_1$7b: There is no statistically significant negative relationship between director busyness and firm financial performance as measured by both ROCE and the Q-ratio.

4.9 Gearing (Debt to Equity)

Firm performance can be adversely affected by the equity to debt ratio which is essentially linked to agency costs (Jensen and Meckling, 1976, Jensen, 1986b). The

effect of firm leverage can be examined from two perspectives. According to Margaritis and Psillaki (2010), on the one hand there is efficiency risk where firms may choose higher debt to equity ratios. On the other hand is distress and franchise value where efficient firms choose lower equity to debt ratios to protect economic rents derived from the possibility of liquidation (Berger and Di Patti, 2006). Debt and equity trade off matter to the value firms. The weight of the trade-off differs from firms with more net present value projects than others (McConnell and Servaes, 1995). Managers take debt to equity ratios as signals of the fact that higher leverage implies higher risk and costs of bankruptcy for firms (Brealey et al., 1977), and debt structures are considered to be market signals. A similar conclusion was made by Krishnan and Moyer (1997), who found a negative relationship between debt to equity ratio and firm performance. In the case where a risk of default occurs, causing a conflict between equity and debt investors, this may create debt overhang where an increase in debt will have a negative effect on the firm value (Myers, 1977, Jensen, 1986b, Stulz, 1990). Therefore firms with lower debt perform better than firms with higher debt ratios because they can maximise their performance by having zero debt (Kinsman and Newman, 1998). Firms with the intention of maintaining high efficiency rates lower debt to equity ratios to reduce economic rents and the threat of liquidation (Berger and Di Patti, 2006).

Also researchers emphasise the importance for a firm to have an optimal capital structure (Brigham and Gapenski, 1994). The emphasis on optimal capital structure is in line with the trade-off theory. This theory argues for an optimal capital structure where the benefit of debt financing outweighs the costs associated with leverage. Thus firms should continue borrowing till the marginal costs of financial distress offset the marginal benefit of debt (Akinkoye and Olasanmi, 2014). On the other hand, agency theorist contend debt decreases agency costs as managers' efficiency increases owing to the requirement to pay interest and creditors on time, which enhances firm performance (Jensen, 1986b, Jensen and Meckling, 1976).

Based on most of the empirical literature and evidence, higher firm gearing (debt to equity ratio) reduces the value and performance of firms, which leads to the following null and alternative hypotheses:

H$_0$8: There is a statistically significant negative relationship between firm gearing and firm financial performance as measured by both ROCE and the Q-ratio.

H$_1$8: There is no statistically significant negative relationship between firm gearing and firm financial performance as measured by both ROCE and the Q-ratio.

4.10 Corporate Ownership Structure

It is argued that the conflict between the type of ownership (shareholders, corporate board/managers and debt holders) and control is the core (Jensen, 1986b) and the basis on which much of the research on corporate ownership is centred. The separation of ownership and control, according to Pradhan et al. (2011), is the central issues which justifies the need for corporate governance. Issues like ownership arrangements, ownership concentration and management ownership have been argued to be factors that mitigate agency conflict.

Jensen and Meckling (1976) and (Jensen, 1986b) stated more formally that ownership structure in favour of the manager reduces the incentives for managers to consume privileges, exploit shareholders' wealth or participate in other sub-optimal activities and thus helps in supporting the interests of both managers and shareholders which in turn lowers agency costs and increases performance. There have been empirical conclusions that manager/board ownership enhances firm performance as board members are encouraged to supervise managers in a more efficient way (Brickley et al., 1988, Chung and Pruitt, 1996, Jensen and Murphy, 1990, Mehran, 1995).

A vast amount of research – most of which is tied to agency theory – has examined the relationship between corporate board ownership and firm performance (Agrawal and Knoeber, 2012, Klein et al., 2005). However, some authors have a different view on board ownership-firm performance link. Morck et al. (1988) argue there is a negative relationship between board ownership structure and firm performance. Similarly Akhtaruddin and Haron (2010) examined the linkages between board ownership and firm performance and they concluded that board ownership increased agency costs as a result of information asymmetry between firm managers and outsider investors. These results are consistent with the entrenchment theory argument which stipulates that

managers with high levels of ownership tend to focus more on maximising the market share rather than profit maximisation and having directors as shareholders also has a negative effect on the value of the firm (Dwivedi and Jain, 2005). However, other studies have shown no statistically significant effect of board ownership on firm performance (Weir and Laing, 2001, Faccio and Lang, 2002). For instance Chen et al. (2008) conducted a study in New Zealand and concluded that neither management-controlled nor ownership-controlled boards had a significant effect on performance.

In a study conducted in Africa, Mangena et al. (2012) argued that the effect of board ownership on firm performance is dependent on the location and political circumstances. The conclusions of the latter authors varied from a negative relationship during post-presidential elections in Zimbabwe to a positive one during pre-presidential elections. Also, non-linear relationships have been found between board ownership and firm performance in developed countries like the US and the UK (Morck et al., 1988, McConnell and Servaes, 1990). In South Africa, Ntim (2012a) examined the relationship between director shareholding and corporate performance and reported a positive relationship. Based on empirical literature on director/board shareholding, the following sub-hypotheses are proposed:

$H_0$9a: There is a statistically significant negative relationship between director shareholding and firm financial performance as measured by both ROCE and the Q-ratio.

$H_1$9a: There is no statistically significant negative relationship between director shareholding and firm financial performance as measured by both ROCE and the Q-ratio.

On the other hand, from an agency theory position, the presence of institutional shareholders facilitates monitoring and control of management than disperse ownership. Shleifer and Vishny (1997) support this view by showing that large external equity holders can mitigate agency conflicts because of their strong incentives to monitor and discipline. Firms with higher levels of institutional ownership are better off as information asymmetry is reduced, which reduces agency cost and impacts positively on firm financial performance. A similar conclusion was made by Elyasiani

and Jia (2010), that independent shareholders have a positive effect on firm performance through the reduction of effects like information asymmetry. On the other hand, Klein et al. (2005) assert disperse ownership increases the probability of the positive relationship between measures of corporate governance and firm performance. Based on empirical literature, the presence of institutional ownership reduces agency cost and leads to better firm performance, which leads to the following two sub-hypotheses:

$H_0$9b: There is a statistically significant positive relationship between institutional shareholding and firm financial performance as measured by both ROCE and the Q-ratio.

$H_1$9b: There is no statistically significant positive relationship between institutional shareholding and firm financial performance as measured by both ROCE and the Q-ratio.

4.11 Compliance with Corporate Governance Codes

Corporate governance research experienced an important turn in the 1990s. Though corporate governance guidelines existed as embedded in company law in some countries, the introduction of CG code only started gaining momentum after the introduction of the Cadbury report in the UK in 1992 (Alves and Mendes, 2004). Following the Cadbury report, both national and international institutions have developed corporate governance standards to be complied with by firms. From a rational efficiency perspective, CG codes are essential in compensating for insufficiencies in the legal systems of countries with regard to investor protection (Alves and Mendes, 2004, Zattoni and Cuomo, 2008). According to Zattoni and Cuomo (2008) the effectiveness of CG systems is linked to the legal tradition of a particular country, but common law countries have stronger investor protection systems than civil law countries. Hence CG codes are therefore in place to increase a firm's transparency and accountability, which attracts both national and foreign investors. Firms that comply with CG provisions are seen to attract investors as such, increasing the liquidity of a compliant firm which enables such a firm to be able to invest in projects, which increases the firm's profitability. Hence compliance with

corporate governance provisions has been seen as a tool for prudent decision making and profit maximisation (Pradhan et al., 2011, Owusu and Weir, 2012).

In emerging economies, CG compliance is a prerequisite for capital market development where new investors would be encouraged to invest (Lishenga and Mbaka 2015). Thus, CG compliance is argued to positively affect the value and performance of the firm. Compliance with corporate governance leads to positive firm performance (Owusu and Weir, 2012, Lishenga and Mbaka 2015). Following the same reasoning, Ntim (2013c) argues that compliance with CG provisions curbs the cost of monitoring and bonding and makes investors enthusiastic about future cash flow of a firm.

Furthermore, compliance with corporate governance code, and its effect on firm performance, has been studied through its mechanisms and characteristics, such as frequency of board meetings, which increases monitoring and is seen as influential in improving operating performance (Vafeas, 1999, Vafeas, 2005). Others have investigated some CG provisions such as board composition by evaluating issues related to outside independent directors (Fama, 1980, Brickley et al., 1994).

The relationship between compliance with CG regulations and firm performance has been investigated extensively in most developed and Asian economies. For example, Wahab et al. (2007), Alves and Mendes (2004) and Goncharov et al. (2006) reported a positive relationship between corporate governance compliance and firm performance using a sample of Malaysian, Portuguese and German-listed firms respectively. Other cross-country studies by Durnev and Kim (2005) and Klapper and Love (2004) have also shown a positive relationship between CG compliance and firm performance. A few studies in Africa have also shown similar results in Ghana (Owusu and Weir, 2012), Kenya (Lishenga and Mbaka 2015) and South Africa (Ntim, 2013c). However, with the exception of Ntim (2013c), the few studies conducted in Africa used international corporate governance provisions rather than local corporate governance provisions. More so, all the studies conducted in Africa have been single-country studies. Hence, by comparing firm compliance with CG provisions as detailed in Nigeria's 2011 corporate governance code and South Africa's King III report, this study contributes immensely in our understanding of this nexus.

Despite the above evidence which has indicated that compliance with CG provisions has a positive effect on firm performance, other authors, e.g. Alves and Mendes (2004), contend that there is doubt as to the applicability of CG provisions in continental Europe and emerging economies where the enforcement of norms is very weak. Drawing from the preceding arguments and empirical findings, the following null and alternative hypotheses in relation to the corporate governance compliance construct are examined as follows:

$H_0$10a: There is a statistically significant positive relationship between compliance with country-level corporate governance code requirements and firm financial performance as measured by ROCE and Q-ratio.

$H_1$10a: There is no statistically significant positive relationship between compliance with country-level corporate governance code requirements and firm financial performance as measured by ROCE and Q-ratio.

In addition, prior studies suggest that compliance with integrated shareholder requirements as defined by corporate governance code impacts positively on firm financial returns (Cheung et al., 2010). However, most of these studies have been limited to developed economies and to a limited extent Asian economies (Ntim et al., 2012). For example, some authors in the US (Cremers and Nair, 2005), Europe (Beiner et al., 2006) and Asia (Leung and Horwitz, 2010) have examined the impact of shareholder CG disclosures and firm returns. In Africa, however, with the exception of (e.g. Ntim et al., 2012), who used King II, there is dearth of studies investigating shareholder disclosures and firm returns. Similar empirical investigation is non-existent in Nigeria and South Africa despite that fact that SEC 2011 CG code and King III substantially require disclosures aimed at protecting shareholders' interest. In addition, comparative studies are non-existent. It is expected high level of compliance/disclosure to shareholders requirement of SEC 2011 CG code and King III will signal to investors the presence of high-quality standards within listed firms in both countries. This will show greater transparency and accountability and is therefore expected to enhance firm financial returns. Therefore, the following hypotheses are proposed:

H₀10b: There is a statistically significant positive relationship between compliance with country-level shareholder corporate governance code requirements and firm financial performance as measured by ROCE and Q-ratio.

H₁10b: There is no statistically significant positive relationship between compliance with country-level shareholder corporate governance code requirements and firm financial performance as measured by ROCE and Q-ratio.

On the other hand, it has been debated whether complying and disclosing to stakeholder CG provisions as specified in CG codes impacts on firm returns (Ntim et al., 2012). However, there is a dearth of empirical research in this area as very few studies have investigated this relationship. With the exception of Ntim et al. (2012), who investigated this construct in South Africa, there is a paucity of similar single-country and comparative research in other emerging African economies. This study advances this line of research in Africa by investigating this relationship comparatively in Nigeria and South Africa.

From a legitimacy perspective, providing transparent information on stakeholder dealings by listed firms can enhance firm returns by reducing political cost (Chen et al., 2008, Ntim et al., 2012). Similarly, stakeholder disclosures/compliance signals that a firm is conforming to societal norms and expectations, which can enhance firm returns (Ntim et al., 2012). In addition, from a resource perspective, disclosure of stakeholder initiatives can facilitate access to critical resources needed by the firm, including finance, taxation and government and local government contracts, that contribute to increasing firm returns (Kiel and Nicholson, 2003). Similarly, as Ntim et al. (2012) observed, firms who provide stakeholder disclosure information (though involving huge financial cost) may signal to investors that a firm is committed to increasing accountability and good governance, which impacts positively on firm returns.

As noted earlier, because of high levels of corruption and historical readjustments after the military rule in Nigeria and apartheid in South Africa, SEC 2011 and King III incorporate provisions aimed at addressing stakeholder expectations, which are

embedded in the respective countries' institutional economic environments. This implies firm compliance with stakeholder engagements as required under the SEC 2011 and King III provisions at a minimum may allow firms access to relevant resources and to legitimise their operations, which can facilitate growth and improve firm returns. Therefore, the following hypothesises are examined:

$H_0$10c: There is a statistically significant positive relationship between compliance with stakeholder corporate governance code requirements and firm financial performance as measured by ROCE and Q-ratio.

$H_1$10c: There is no statistically significant positive relationship between compliance with stakeholder corporate governance code requirements and firm financial performance as measured by ROCE and Q-ratio.

4.12 Independent Audit Committee (IAC)

There is a growing literature suggesting that an independent audit committee (hereafter IAC) is essential for firm financial scrutiny, which affects positively firm economic returns. An audit committee (hereafter AC) is a sub-committee of the board which act as a medium of communication between the board, firm internal monitoring system, internal audit and external auditors. Bradbury et al. (2006,pp.4) contend that an AC has an oversight role in a firm's financial reporting process and therefore its independence is crucial in making sure firms are reporting a fair value of their performance. Chan and Li (2008) add that boards with IAC demand higher audit quality beyond the normal and standard expectations, which makes it difficult for management to manipulate the members of the committee. In addition, Klein (2002,pp.7) contends that independent audit committees are best suited as active overseers of the financial accounting process of a firm and as such can withstand pressure from management to manipulate earnings. Similarly, from an agency theory perspective, independent audit committees signal to shareholders that the firm's accounting and reporting information is being monitored and strengthen internal audit function (Aldamen et al, 2011). On the other hand, some authors have argued that owing to their complete separation from the day-to-day running of the company, IACs are less likely to understand industry issues and more likely to side with auditors,

signalling less negotiation and deliberation on accounting processes and thus fewer audit meetings (Aldamen et al., 2012, Sharma et al., 2009), which impacts negatively on AC monitoring role in financial reporting.

Some empirical research, mostly non-African studies, has shown that IACs enhance quality financial reporting (e.g. Carcello and Neal, 2003), increase firm performance (Chan and Li, 2008) and negatively impact on abnormal accruals (e.g.Klein, 2002). With the exception of Chan and Li (2008), very few studies in CG scholarship have examined the performance effect of IACs on firm performance. Studies on IACs-firm performance nexus is deficient within African context. This study attempts to extend the existing literature on IACs in CG scholarship and provide new evidence from a comparative context in Africa with the following hypotheses:

$H_0$11: There is a statistically significant positive relationship between independent audit committees (IACs) and firm financial performance as measured by ROCE and Q-ratio.

$H_0$11: There is no statistically significant positive relationship between independent audit committees (IACs) and firm financial performance as measured by ROCE and Q-ratio.

4.13 Summary of Chapter

The chapter has presented the extant theoretical and empirical CG literature on internal CG mechanisms and firm financial performance nexus. The objective was to link the existing theoretical foundations discussed in chapters 2 and 3 and how their empirical debates shape firm choices of internal CG structures and their impact on firm financial performance. The chapter recognises the complex and multi-theoretic nature of CG, and, consistent with prior studies, adopts a multi-theoretical perspective in constructing the complex CG–firm performance relationship.

The chapter has further built on the two main empirical models within the existing literature: the *compliance index model* and the *equilibrium variable model*. Hypotheses 1 to 9 and 11 are developed from internal CG structures endogenously chosen by firms

and measured by the equilibrium variable model. Hence, hypotheses 1 to 9 and hypotheses 11 examine sub-research question two (see section 1.4.1.1). Whereas hypotheses 10a, 10b and 10c are developed from compliance with country-level corporate governance code and measured by the compliance index model and examines sub-research question one. Sub-research question three is examined through a comparison of the results of hypotheses 1 to 9 and 11 with those of hypotheses 10a, b and c. Prior empirical results on the equilibrium variable model as discussed under its constituent hypothesis show mixed results compared to the reported results for the compliance index model in country-specific studies. It will be interesting to examine whether the findings of this research are consistent from a comparative perspective (discussed later in chapters 7 to 9). The next chapter presents the methodology adopted in this thesis. It specifically describes the research rationales, sample and data, variables, and model specifications.

CHAPTER 5

5.0 RESEARCH METHODOLOGY

5.1 Introduction

This study has premised on chapters 1, 2 and 3 that there is emerging evidence in the literature suggesting that CG practices in Africa are still developing and there is an absence of studies comparing the internal CG structure in different countries and its impact on firm financial outcomes. In addition, research comparing firm compliance with adopted Western-style CG codes in African economies and its impact on company performance is absent. Considering these gaps (see section 1.3 for detailed discussion), the researcher further noted that though CG codes operational in South Africa and Nigeria are somewhat similar in some respects owing to influences of Western CG provisions, there are considerable variations between the governance codes in both countries owing to different levels of maturity of governance institutions and hence variability in applicability and compliance. Thus, the researcher seeks to evaluate and compare if different internal CG mechanisms in South Africa and Nigeria as well as compliance with country CG codes have an impact on firm financial outcomes of listed firms in these countries. Thus, to fulfil the main objective and the sub-objectives highlighted in subsection 1.4.1.1, this research methodology chapter discusses the research methods, analytical approach and data collection methods employed to empirically examine the main research question (as in 1.4.1) and sub-research questions (as in subsection 1.4.1.1). The chapter outlines the research design, data set, variables and data analysis methods. It begins by discussing the ontological and epistemological position adopted for the thesis and its justification (5.2). Section 5.3 discusses the analytical methods and corresponding independent variables. Sections 5.4 and 5.5 present the dependent and control variables respectively. This is followed by data collection section (5.6). Section 5.7 summarises and justifies the methodological choices of the thesis.

5.2 Research Approach, Rationale and Philosophy

5.2.1 Ontological Position

Ontology is concerned with the nature of reality (Hammersley, 2002, Lewis et al., 2007, Bryman and Bell, 2011). According to Hammersley (2013), ontology is a theory about the nature of reality, as to whether it exists subjectively or objectively. Ontology raises the question as to the researcher's assumptions about the way the world operates and his or her particular view (Lewis et al., 2007, Bryman and Bell, 2011). There are two main ontological positions in research.

An objective ontological position views social entities' existence in reality as external to social actors (Saunders et al., 2012). Thus an objective ontology view argues that the world is 'out there', real and completely unconnected from human meaning-making (Hammersley, 2013, Saunders et al., 2012, Bryman and Bell, 2011, Lewis et al., 2007). This view holds that the world, whether physical or social, is an ordered system composed of separate and observable events which have objective reality and operate in a systematic manner (Hammersley, 2013, Saunders et al., 2012, Bryman and Bell, 2011, Lewis et al., 2007). Thus, objectivism is a major influence on quantitative research.

On the other hand, subjective ontology assumes that reality or constructs being researched is neither external nor unconnected from social actors or the researcher (Hammersley, 2013, Saunders et al., 2012, Bryman and Bell, 2011, Lewis et al., 2007). Thus, this ontological position contends that reality is emergent and socially constructed by humans through the ideas of multiple social actor's contingent on their lived experiences. Thus meanings of social constructs will differ from one actor to another (Hammersley, 2013, Saunders et al., 2012, Bryman and Bell, 2011, Lewis et al., 2007).

In view of the different ontological positions above, the researcher believes that an objective ontological perspective is suitable to investigate internal CG structures, firm regulatory compliance and its impact on firm financial performance. This position is consistent with research which has investigated similar constructs (see , Agyemang et al., 2015, Ntim, 2013c, Ntim, 2013d, Abor and Fiador, 2013, Samaha et al., 2012, Mangena et al., 2012). In addition, the outcomes of the research are not dependent on the interpretation of social actors, as data is collected from secondary sources. Thus, the results are not subject to multiple interpretations, as meanings are not constructed from social actors' interpretations. Thus, by measuring or examining individual internal

CG mechanisms such as board structure and firm compliance with country-specific CG codes through an objective method, the study permits generalisation. As mentioned earlier, an ontological view logically influences a researcher's epistemological perspective (discussed in the next subsection).

5.2.2 Research Epistemology

Epistemology is concerned with what constitutes acceptable knowledge in a field. While ontology is concerned with theory on the nature of reality, be it objective or subjective, epistemology is concerned with the theory of how knowledge of reality is to be obtained either through a positivist angle by objectively measuring constructs or through social constructions by subjectively interpreting the world (Saunders et al., 2012, Bryman and Bell, 2011). Thus, an ontological position logically influences a researcher's epistemological stands.

As a result, there are mainly two research philosophies in social science research: positivism and social constructivism. Positivist philosophy is consistent with the objective ontological position. According to the latter philosophy, the social world exists externally, and as such its properties can and should be measured through an objective method rather than subjectively inferred through sensation, intuition and reflection (Bryman and Bell, 2011, Easterby-Smith et al., 2012, Saunders et al., 2012). In fact, as Hammersley (2002) puts it, positivism philosophy seeks to employ scientific methods to study and understand social constructs, including human behaviour, organisational social constructs and history. Thus data collection is typically numerical in nature and also consists of large samples, as such studies are aimed towards generalisation of findings (Easterby-Smith et al., 2012). More so, the results of positivist research are usually intended to test theories and define cause and effect relationships between constructs (Easterby-Smith et al., 2012).

On the other hand, social constructivism or interpretivism contrasts the positivist view by contending that social science research deals with humans and humans are different from atoms or non-human forms of life (which is the centre of positivism). This is because humans actively interpret or make sense of the environment in which they live as such meanings can be subjectively inferred through intuition, sensation and

reflection (Bryman and Bell, 2011, Easterby-Smith et al., 2012, Saunders et al., 2012). Thus, according to social constructivism, people construct different types of knowledge, and each of these meanings is subject to human interpretations. In fact, this epistemology seeks to gain an understanding of human actions and considers the researcher as part of the phenomena under study in an attempt to gain accounts about a particular construct from social actors (Hammersley, 2013, Saunders et al., 2012, Easterby-Smith et al., 2012, Bryman and Bell, 2011, Lewis et al., 2007, Hammersley, 2002).

Given the above understanding in relation to the different epistemological positions in research, this thesis adopts a positivist perspective as the most appropriate approach to be able to answer the research questions of the study. The choice of a positivist epistemological position was weighed against social constructivism epistemology. Primarily, after the review of the literature (in chapters 2, 3 and 4), the bulk of extant empirical CG research aimed at understanding internal CG constructs predominantly adopts a positivistic perspective. More so, consistent with prior studies, this study aims to test theoretical internal CG mechanism constructs drawn from agency, stewardship and resource dependency theories, as such a positivist standpoint is selected as the most appropriate method to achieve these objectives. In addition, because this study is aimed at generalisation of results, a positivist approach of collecting rich quantitative data is adopted. Furthermore, to evaluate internal CG mechanisms such as board structure, the research uses numerical data from annual reports of firms to examine their impact on firm performance. Hence a positivist approach through development of testable hypotheses is chosen as more appropriate owing to the focus of the thesis.

5.3 Data Analysis Methods

As noted in section 1.3, this study uses two major contrasting positivist empirical corporate governance data analysis models: the *equilibrium variable model* and the *compliance index model*. Most researchers, especially in Africa, have often used the equilibrium variable model to investigate internal CG structures and firm performance nexus (Ntim et al., 2014b, Ntim et al., 2014a, Ntim, 2014, Abor and Fiador, 2013, Kyereboah-Coleman, 2008, Kajola, 2008). Meanwhile, just a few studies have investigated the compliance index model perspective (Ntim, 2013c, Barako et al.,

2006). However, the two data analysis models are based on different assumptions theoretically.

The next subsections discuss these two models alongside their theoretical assumptions and independent variables used in the models.

5.3.1 Equilibrium Variable Model

The equilibrium variable model (EVM) is developed from the argument that there were no mandatory CG provisions for organisations to comply with before the late 1980s. Since the 1980s, there has been an increasing propagation of CG provisions or codes to ensure managers of firms are acting in shareholders' interest (Danielson and Karpoff, 1998). Thus, before the proliferation of CG codes, internal CG mechanisms were driven by essential court decisions, firms' specific needs or requirements (e.g. environmental uncertainties, attracting skilled, well-educated and qualified directors and pressure from the owners), legal and business advice, peer industry behaviours etc. (Black, 1992, Danielson and Karpoff, 1998). Hence the EVM assumes that, without CG provisions, internal CG structures like the composition of the board and CEO duality are mainly derived within a firm (Agrawal and Knoeber, 1996, Demsetz and Lehn, 1985). More so, the model assumes that some CG structures are more important than others (Agrawal and Knoeber, 1996, Demsetz and Lehn, 1985, Memon et al., 2012, Mangena et al., 2012, Antwi et al., 2012, Mehran, 1995, Barako et al., 2006).

Second, the EVM assumes there will be varied agency problems across different firms as a result of variability in the ownership structure, size of the firm and other firm-specific idiosyncrasies (Gillan, 2006). Furthermore, external CG structures (e.g. legal and regulatory requirements and market for corporate control) are exogenously derived in such a manner that differences across the external environments in which firms operate may both help increase or decrease the value of a firm (Agrawal and Knoeber, 1996, Demsetz and Lehn, 1985). Last of all, the EVM assumes that the use of specific internal CG mechanisms is not automatically complementary. Thus the use of a particular internal CG mechanism more frequently than others may still equally lead to increase in firm financial performance (Vafeas and Theodorou, 1998, Danielson and Karpoff, 1998, Botosan, 1997, Agrawal and Knoeber, 1996, Demsetz and Lehn, 1985).

This therefore suggests that there is an optimal mix of internal CG structures which impacts positively on a firm's financial performance. By this reasoning, a firm will continue to put in place internal CG mechanisms to the point where marginal benefit will be equal to the marginal cost (Agrawal and Knoeber, 1996, Demsetz and Lehn, 1985).

In a nutshell, the EVM assumes an association between the implementation of internal CG mechanisms and firm financial outcomes. As such, it assumes that each firm has an optimal internal CG structure. Consequently, each firm should be able to make choices regarding its internal CG structures without any interference from the outside. Thus firms' internal CG mechanisms are internally generated (Vafeas and Theodorou, 1998, Danielson and Karpoff, 1998, Botosan, 1997, Agrawal and Knoeber, 1996, Demsetz and Lehn, 1985). Hence a firm will continue to put in place internal CG structures to the point where the cost associated with a marginal increase in its internal governance structure will be lower than an increase in the financial outcomes (i.e. at a point such a firm is in equilibrium in its internal CG structure).

This means for example that, while increase in director and managerial ownership to align the interest of executives with that of shareholders may effectively increase the firm's financial performance in one firm, it may not necessarily be effective for another firm because of variability in the size of the firm, ownership structure of the firm and other firm-level idiosyncrasies. This is the oldest approach and most popular approach researchers have used to investigate internal CG and firm performance nexus even after the proliferation of good CG codes around the world (Ntim, 2013c, Danielson and Karpoff, 1998, Agrawal and Knoeber, 1996, Demsetz and Lehn, 1985). This model therefore is used to examine research sub-question two: 'Do endogenously generated alternative firm-level internal corporate governance mechanisms affect firm financial performance in Nigeria and South Africa?' The EVM for this study is stated as follows:

▶ Equilibrium Variable Model:

$$P_{it} = \delta_{it} + \beta_1 BSZ_{it} + \beta_2 NED_{it} + \beta_3 INED_{it} + \beta_4 ED_{it} + \beta_5 GDIV_{it} + \beta_6 EDIV_{it} + \beta_7 DUAL_{it} + \beta_8 GEAR_{it} + \beta_9 FRE\text{-}M_{it} + \beta_{10} ILOCK_{it} + \beta_{11} INST\text{-}SH_{it} + \beta_{12} D\text{-}SH_{it} + \beta_{13} IAC_{it} + \beta_{14} BNESS_{it} + \beta_{15} CONTROLS_{it} + U_{it} \dots (1)$$

Where $i=1\dots180$, $t=\dots5$ and P_{it} is performance measures of ROCE (Return on Capital Employed) and Q-ratio for firm i at time t, β_1 to β_{14} are the vectors of individual internal CG variables, board size (BSZ), non-executive directors (NED), independent non-executive directors (INED), executive directors (ED), gender diversity (GDIV), ethnic diversity (E-DIV), gearing (GEAR), frequency of board meetings (FRE-M), board interlock (ILOCK), institutional shareholding (INST-SH), director shareholding (D-SH), audit committee independence (IAC), board busyness (BNESS) as independent variables plus the control variables (CONTROLS) and U_{it} is the error term.

5.3.1.1 Independent Variables for the Equilibrium Variable Model

I. *Board size:* Measured by the total number of directors who serve on a board.

II. *Board structure (proportion of NEDs):* A variable which measures percentage of non-executive directors to total number of directors who serve on a board.

III. *Proportion of EDs (Executive Directors):* A variable which measures percentage of executive directors to total number of directors who serve on a board.

IV. *Proportion of independent NEDs:* A variable which measures percentage of independent non-executive directors to total number of directors who serve on a board.

V. *Frequency of board meetings:* A variable which measures number of board annual meetings.

VI. *CEO/Chairman role separation:* Measured by a dummy with '1' when the positions of board chairman and CEO are held by separate individuals and '0' when the positions are held by an individual.

VII. *Board gender composition (gender diversity):* A variable which measures percentage of women to total number of directors who serve on a board.

VIII. *BOD ethnic composition (ethnic diversity):* A variable which measures the percentage of black directors to total number of directors who serve on a particular board.

IX. *Interlocking directorates:* Measured by average number of boards the directors of a firm sit on outside the firm.

X. *Board busyness:* Measured as the average firm-level number of board meetings multiplied by average firm-level board interlock.

XI.   *Gearing (debt to equity):* A variable which measures total debt, divided by total equity.

XII.   *Institutional shareholding:* Measured by the percentage of institutional shareholders and block holders to the total shares of a firm.

XIII.   *Director shareholding:* Measured by the number of shares held by directors (both executive and non-executive) to the total shares of a firm as a percentage.

XIV.   *Independent audit committee:* Percentage of independent non-executive directors to total number of directors who serve on the audit committee.

5.3.2 Compliance Index Model (CIM)

Contrary to the EVM, which assumes an endogenous generation of internal CG mechanisms, the *compliance index model* (CIM) assumes that internal CG structures are externally enforced, as such organisations tend to select internal CG structures as a set or bundle (Gillan, 2006, Danielson and Karpoff, 1998). The CIM thus assumes that the financial performance of a firm is likely to be influenced by a collection of internal CG mechanisms derived from CG provisions or codes instituted and backed by statutory legislations. Furthermore, as a result of external influence on internal CG mechanisms, there exists possible interdependence between internal CG structures (Gillan, 2006, Danielson and Karpoff, 1998, Agrawal and Knoeber, 1996). Owing to this possible interdependence of various CG structures, rather than looking at them as individual CG mechanisms often in isolation to each other, the CIM advocates for a construction of compliance index which is based on a set of CG provisions to empirically investigate internal CG and firm financial performance nexus. This model therefore is used to examine research sub-question one: 'How and in what ways does firm-level compliance with exogenously developed corporate governance provisions impact on firm financial performance in Nigeria and South Africa?' Following from the preceding argument, the compliance index model is stated as follows:

Compliance Index Model:

$$P_{it} = \delta + \beta_1 CGI_{i,\,t-1} + \beta_2\, CONTROLS \ldots\ldots\ldots\ldots\ldots\ldots\, (2)$$

P$_{it}$ is performance measures of *ROCE* and *Q-ratio* for firm *i* at time *t*, $\boldsymbol{\beta}$ is a vector of compliance index (*CGI*), and CONTROLS represents control variables and **U$_{it}$** is the error term.

5.3.2.1 Independent Variables for the Compliance Index Model (CIM)

I.   *Composite/Integrated Corporate Governance Index (CGI):*

Independent variables for the CIM for both countries is represented by the South African Corporate Governance index (SACGI), which is a composition of CG provisions outlined in King III which firms are required to apply or explain reasons for non-application. Similarly, the Nigerian Corporate Governance Index (NICGI) is composed of the provisions of SEC 2011 CG code expected to be complied with by listed firms or reasons given for non-compliance. Consistent with prior research (Ntim, 2013a, Ntim, 2013c, Black et al., 2006), a binary coding scheme is adopted to construct a firm-level compliance index in each country. This involves awarding '1' where a firm complies with an internal CG provision of the country code in the annual report and '0' where it does not. The CG provisions composed in the SACGI (South Africa) and NICGI (Nigeria) are based on provisions of SA (2009) King III and Nigeria's (2011) CG code. The scoring involves manually reading firms' annual reports and awarding one point where a firm discloses/complies with/applies a CG provision and zero when it does not. For example, South Africa's King III report has 84 CG provisions required to be applied by listed firms; thus, a firm's total compliance score for the year ranges from zero (0%), indicating no compliance, to 84 (100%), indicating full compliance. Similarly, in Nigeria, the NICGI is composed of 75 CG provisions as stated in the SEC 2011 CG code. Therefore, a firm will score between '0' (0%) for non-compliance and 75 (100%) for full compliance.

The CG indices for Nigeria and South Africa are broken down into two indices. One captures provisions aimed to protect shareholder value creation and the other incorporates affirmative country-level stakeholder provisions. These sub-indices are presented below.

II.   *Shareholder compliance index (Shareholder–NICGI and Shareholder–SACGI):*

To test hypothesis H10b, an index for shareholder disclosures includes 61 shareholder provisions (shareholder–NICGI) in Nigeria as specified in the SEC 2011 CG code. These disclosures include traditional corporate governance requirements aimed at increasing shareholders' returns by reducing agency cost. Shareholder provisions scores (shareholder–NICGI) vary from zero (0%) to 61 (100%) in Nigeria.

In South Africa, the shareholder–SACGI (shareholder provisions) captures 71 conventional corporate governance provisions borrowed from the Anglo-American CG model with the premise of reducing agency cost and increasing shareholders' return. Shareholder provisions scores for South Africa (shareholder–SACGI) vary from zero (0%) to 71 (100%).

III.   *Stakeholder Compliance Index (Stakeholder–NICGI and Stakeholder–SACGI):*

On the other hand, to test H10c, the South African Stakeholder–SACGI (stakeholder provisions) have thirteen (13) contextual inclusive actions and stakeholder provisions as stated in King III, whereas the Nigerian stakeholder disclosure requirement (Stakeholder–NICGI) is composed of fourteen (14) contextual inclusive actions and stakeholder provisions of SEC 2011 CG code. Similarly, the stakeholder provisions score for Nigeria (Stakeholder–NICGI) ranges from zero (0%) to 14 (100%), and in South Africa it ranges from zero (0%) to 13 (100%).

5.3.2.2 Limitation/Choice of Weighted Index (SACGI and NICGI)

The various country CG compliance indices (SACGI and NICGI) are coded using a binary coding scheme and the indices are unweighted. As noted by Barako et al. (2006), Ntim (2009) and Ntim et al. (2012), unweighted indices are not able to capture important groups of requirements as they treat all CG provisions as equal in importance, which may be inconsistent in theory and practice. However, empirical research in CG suggests that weighted and unweighted indices give similar results, especially where CG provisions are large (e.g. Barako et al., 2006, Ntim et al., 2010, Ntim et al., 2012, Ntim, 2013c). Specifically, this study did not use weighted indices as it would have meant some CG provisions are given more weight than others, which would not be an accurate representation of respective country CG regulations. More

so, the use of an unweighted index in this study is consistent with prior research (Ntim, 2013a, Ntim, 2013c, Black et al., 2006).

5.3.3 Synopsis of Data Analysis Models

To date, no researcher has investigated internal CG mechanisms and firm performance using these two analytical approaches (i.e. the equilibrium variable model and the compliance index model) within cross-country comparative studies in different contexts. From a methodological standpoint, there may be serious empirical questions to be answered in relation to both models. For example, results from the EVM may be spurious, as it ignores the possibility of interactions among CG structures (Core et al., 1999, Danielson and Karpoff, 1998). In addition, the possibility of omitted variables bias in the equilibrium variable model implies that cross-sectional regression using a single internal CG variable may result in misleading interpretation of regression coefficients (Black et al., 2006, Core et al., 1999, Danielson and Karpoff, 1998, Agrawal and Knoeber, 1996). More so, while it may be easy theoretically for a firm to determine an optimal internal CG structure, the practicality of unravelling this is very difficult.

On the other hand, a compliance constructed index is argued to be able to enhance the explanatory power through aggregation (Core et al., 1999). However, if the compliance index model assumes that a firm's internal CG structures are exogenously determined by regulatory frameworks, then the model fails to provide strong explanations as to the reason why prior cross-sectional studies show considerable differences in the use of internal CG structures by firms (Ntim, 2013c, Core et al., 1999).

The preceding arguments for both models lead to a key methodological question as to whether the use of the *equilibrium variable model* or the *compliance index model* has influence on the interpretations of research results (research sub-question three), (Ntim, 2013c, Core et al., 1999); in other words, if individual internal CG structures as measured by the *equilibrium variable model* is associated with better firm performance than firm level compliance with CG provisions as measured by *the compliance index model.* Another critical question may be this: if both models show similar results, is it valuable to construct a compliance index given that it is time consuming and labour

intensive? If they show similar results, at firm level, will it be essential for firms to comply with CG provisions given that it will be more expensive than choosing an optimal internal CG mechanism that will generate similar results? For example, if empirical results in South Africa based on the EVM show there is a positive relationship between CEO duality and firm performance but NEDs do not impact positively on firm performance; then it will be costly for firms to comply with King III recommendation for majority NEDs. This is because complying with this provision does not have a value relevance impact on firm financial performance.

The preceding argument therefore establishes the foundation to compare the explanatory power and empirical validity of both models at a cross-country level. Most studies in Africa have investigated internal CG mechanisms and firm nexus using principally the equilibrium variable model (Ntim et al., 2015b, Agyemang et al., 2015, Ntim et al., 2014a, Ntim, 2014, Ntim, 2012a, Ehikioya, 2009, Kyereboah-Coleman, 2008, Khanchel El Mehdi, 2007). However, Ntim (2013c) constructed a compliance index based on the South African King II report. His results show positive impact of compliance with the South African King II provisions on firm performance. However, Ntim (2013c) results were based on the King II provisions; as of yet, no research has been done to show compliance with the King III provisions. No study yet has compared both models across different African countries. Hence, based on the respective theoretical and empirical validity of both models and given that corporate governance studies in Africa are still embryonic, the *equilibrium variable model* and *compliance index model* are independently examined in both South Africa and Nigeria and results are compared. Therefore, the relationship between firm-specific individual internal CG structures and their impact on firm performance is examined using the *equilibrium variable model*, while a constructed firm compliance index to country-specific CG provisions is assessed using the *compliance index model*.

5.4 Dependent Variables

5.4.1 Firm Financial Performance

Firm financial performance has been used a considerable amount in accounting, economic and finance research to assess the fulfilment of a firm's economic objectives and has long been considered the main research focus on firm performance

(Gentry and Shen, 2010, Hult et al., 2008, Richard et al., 2009). Owing to the influence of organisational economics before the mid-1980s, researchers typically used accounting-based financial performance measures as an economic measurement of firm profitability (Gentry and Shen, 2010, pp.516). These accounting-based performance measures are historical and so involve more backward- and inward-looking emphasis (Kiel and Nicholson, 2003). These measures also represent the effect of many factors, including board advisory to the management team, and are the traditional mainstay of corporate financial performance measures (Kiel and Nicholson, 2003 ,pp.10). However, the influence of finance theories in the 1980s led to the introduction of market-based financial performance measures (Gentry and Shen, 2010, pp.516). More so, the rise of shareholder activism in the 1980s and 1990s pushed firms to adopt shareholder value maximisation objectives using market-based performance measures in addition to accounting-based measures (Gentry and Shen, 2010, pp.516). As such, market-based financial performance measures incorporate overall value placed on a firm by the market and may not bear any association with valuation of asset, firm historical profitability and or its current operations. Therefore, market valuations emphasise and incorporate the firm's expected future earnings and as such are considered as forward-looking measures that reflect firms' current plans and strategies.

There has been considerable debate within accounting and finance literature on the value relevance of each financial performance measure. For example, proponents of market-based financial performance measures argue that they include all relevant information. Hence, different from accounting measures, market-based financial performance measures are not limited to a single aspect of firm financial performance (Gentry and Shen, 2010, Lubatkin and Shrieves, 1986). More so, accounting performance measures have been criticised for their susceptibility to managerial distortions and manipulation (Agarwal and Taffler, 2008, Gentry and Shen, 2010). As a result, market-based performance measures have been proposed as an appealing alternative and a complement to accounting-based performance.

Within extant CG literature, one of the reasons for inconclusive research findings in CG–performance nexus is attributed to restrictive use of one performance measure in isolation to the other (Gani and Jermias, 2006, Kyereboah-Coleman, 2007).

Recognising that both accounting and market measures are not perfect, many researchers examining CG–performance nexus have accepted both measures as valid proxies of firm financial performance (Ntim et al., 2015b, Agyemang et al., 2015, Ntim et al., 2014a, Ntim, 2014, Ntim, 2012a, Ehikioya, 2009, Kyereboah-Coleman, 2008, Khanchel El Mehdi, 2007). Consequently, this study employed the widely used Q-ratio as a proxy for market returns and Return on Capital Employed (ROCE) as a proxy for accounting returns to measure firms' financial performance (Pit). These two financial returns variables are employed to provide robust results for alternative firm performance measurements.

   I.   *Return on Capital Employed (ROCE):*

An accounting-based measure calculated by earnings before interest and tax (EBIT) divided by capital employed (equity plus long-term loans).

   II.   *Q-ratio:*

Consistent with prior research (Ntim et al., 2015b, Agyemang et al., 2015, Ntim et al., 2014a, Ntim, 2014, Ntim, 2012a, Ehikioya, 2009, Kyereboah-Coleman, 2008, Khanchel El Mehdi, 2007), the study employs Tobin's q (Q-ratio) as the empirical measure for the size-normalised market value of a firm. It shows the ratio of a firm's market value (i.e. market value of its outstanding stock and debt) to its replacement value of assets (book value).

5.5 Control Variables

According to Black et al. (2006), studies which omit relevant economic variables to predict firm performance could generate wrong empirical interpretations and conclusions. Consequently, to overcome omitted variable bias, this study included several control variables, which can potentially impact on firm performance (please see appendix B for measurement of all variables). These variables include:

5.5.1 Sales Growth

Considerable research on CG scholarship has argued that firms with higher investment opportunities are more likely to grow faster (Ntim et al., 2010, Ntim, 2013c). In addition, high growth potential firms may receive higher market valuation and are expected to experience increase in future financial performance. Hence, firm performance is impacted positively by sales growth (S-growth) because, with

increasing firm turnover, these firms have higher ability to invest relatively faster than firms with limited growth in turnover (Ntim et al., 2010, Ntim, 2013c). Consequently, sales growth is controlled for. It is measured as firm's percentage change of current year's sales minus previous year's sales divided by previous year's sales.

5.5.2 Capital Expenditure (CAPEX)

Firms with higher capital expenditure in technology and innovation are theoretically argued to be more competitive through the launching of new products, services and processes than firms with low innovation prospects (Ntim, 2009). Thus, such firms are expected to experience premium prices and are expected to generate long-term performance owing to intensive investments (Durnev and Kim, 2005). However, because capital expenditure in each year will generate future performance in subsequent years, it may impact adversely in a firm's current year performance. Following previous research (e.g. Durnev and Kim, 2005, Ntim, 2009, Ntim et al., 2010), capital expenditure is expected to affect firm performance either negatively or positively. It is measured as a percentage of total capital expenditure to total assets of a firm.

5.5.3 Firm Size

Prior literature suggests that firm size is likely to affect both the quality of CG systems and firm performance (e.g. Beiner et al., 2006, Ntim et al., 2010, Ntim et al., 2012). This suggests that larger firms may receive higher valuation than smaller firms and enjoy lower costs of raising external capital (Beiner et al., 2006, Ntim et al., 2010, Ntim et al., 2012). However, according to Klapper and Love (2004,pp.713), smaller firms tend to have better growth prospects than larger firms and therefore will need external sources of capital. This implies that smaller firms may have to show a better CG system to be able to attract cheaper sources of external finance. In addition, as suggested earlier, faster growth will mean increase in firm financial performance (Black et al., 2006). Following prior CG research (e.g. Agrawal and Knoeber, 1996, Beiner et al., 2006, Haniffa and Hudaib, 2006), this study controls for three variables of firm size: market value, total asset and local stock market size rating of firms. Hence, the study hypothesis that firm total asset (TA), firm stock market size rating (F-SIZE)

and market value (MV) affect either positively or negatively on firm returns. Hence these variables are controlled for in each panel estimation.

5.5.4 Dual Listing

Firms strategically choose to secondarily list their shares in a foreign market which may or may not involve initial public offering (IPO) or raising additional capital. The benefits of cross-listing have been argued to include financial gains, increase in liquidity, increased shareholder base, visibility and market motivation (Licht, 2004). Cross-listing of firms can serve as a bonding structure to corporate managers to gain the trust of investors and show investors they are committed to sound CG disclosure practices which may increase market valuation (Siegel, 2009).

Some studies have investigated cross-listing firm economic performance nexus and have shown consistency with the bonding hypothesis. For example, some scholars have reported larger stock reactions (Miller, 1999), higher valuation (Doidge et al., 2004), increased financial analyst scrutiny (Lang et al., 2003), better environmental information (Bailey et al., 2006) and increased access to external finance (Reese and Weisbach, 2002). Dual-listed (DUA-LIST) firms are argued to have more transparency as a result of high scrutiny in different markets, which may attract investors and hence impact on firm returns (Ntim, 2012b, Ntim et al., 2012). Hence, the study predicts an association between dual listing and firm financial returns.

5.5.5 Industry (Indus) and Year Dummies (YD)

As a result of differences in the complexity of business lines, operations, capital requirements, growth opportunities, access to markets, innovation, ownership structures, corporate governance practices and firm performance may vary between industries (Ntim, 2012b, Ntim et al., 2012). In addition, local and global economic conditions and developments may affect different industries in different ways. For example, while most industries were affected by the 2008 financial crisis, financial firms were more affected than other industry firms. More so, owing to innovation in the telecom industries, they are expected to grow faster than manufacturing or agricultural firms, and therefore telecom firms may experience greater financial returns than other firms.

Thus, following prior literature, industry (six industry dummies in both South Africa and Nigeria) effect can impacts on firm performance either negatively or positively. Thus, industry individualities are controlled.

Similarly, there is general consensus that corporate governance practices and firm performance vary and change over time (Henry, 2008,pp.933). Some scholars have shown that firm year is associated positively with firm financial outcomes. More so, current financial outcomes can influence future financial returns and corporate governance practices (e.g. Henry, 2008, Ntim, 2012b, Ntim et al., 2012). Following these prior studies, this study predicts that year dummies (YD) for the five firm years in each country impact differently on firm performance.

5.5.6 Audit Firm Size (Big 4 Auditors)

Extant literature suggests that the size of an audit firm matters in determining CG systems, quality of annual reports and firm valuation (El Ghoul et al., 2016, Ntim, 2013c, Ntim et al., 2010). Particularly, literature suggests that the extent to which an auditor is independent and audit quality are dependent on the size of the audit firm. This is because the size of an audit firm determines its access to resources (e.g. human capital, internationalisation, information, knowledge and finance), its reputation, and independence (Young et al., 2008,pp.1108) . This implies that large and international audit firms such as Deloittes, PricewaterhouseCoopers (PwC), KPMG and Ernst and Young (EY) enjoy size advantage over smaller firms that may not be able to resist management pressure in conflict situations (Ntim, 2009).

Literature suggests that audit firm size positively correlates with audit fees (Alsaeed, 2006, Francis, 1984) . This implies that firms are more likely to employ the big four audit firms as they are expected to have access to resources in addition to both local and international reputation. Consequent firms who employ these large firms are willing to adhere to stringent CG standards and quality financial reporting, which enhances firm valuation. However, the associated increase in audit fees as a result of employing a large audit firm suggests that there is an inverse relationship with accounting returns of firms. The study predicts that audit firm size (AF-SIZE) impacts on the quality of financial reports and as such larger firms tend to use the big four

auditor firms (i.e. PricewaterhouseCoopers, Deloitte Touche Tohmatsu, KPMG and Ernst and Young) who are perceived as trustworthy (El Ghoul et al., 2016). In this study, a dummy variable '1' is used if a firm is audited by a top big four firm (i.e. PricewaterhouseCoopers, Deloitte Touche Tohmatsu, KPMG and Ernst and Young), otherwise '0'.

5.6 Data Collection and Sample Selection

5.6.1 Source of CG Information: Annual Reports

Data for internal CG variables and compliance index are collected principally based on firm's CG information provided annual reports. Annual reports are chosen as the main source of information for this thesis due to the following reasons First, it has been contended that the compulsory nature of annual reports for listed firms across the globe makes them a consistent and reliable source to collect CG and financial information (Stanton and Stanton, 2002, Cooke, 1989). This is because firms can be sanctioned and sued for disclosing misleading information in annual reports. Furthermore, evidence from prior research suggests that annual report disclosure levels are positively associated with lower cost of equity capital (Wallace et al., 1994, Botosan, 2000, Botosan, 1997). Third, the weight of annual report disclosures used by many major corporate governance independent professional research and ratings agencies (e.g. CLSA, AIMR/AFAF/ SEC, S&P) ranges between 40%–50% of the overall firm disclosure scores while quarterly and other information published by firms ranges between 30%–40% (Botosan and Plumlee, 2002). Following from Botosan and Plumlee (2002), the weight attached to annual reports shows their importance as one of the most essential sources of corporate governance information. In addition, as some authors contend (e.g., Botosan and Plumlee, 2002, Botosan, 2000, Botosan, 1997), a firm's annual report is a principal firm reporting document; as such, any other financial report is in some respects a subordinate or an add-on to it. More so, given unavailability of CG information in most financial data sources such as DataStream and Compustat for African countries, annual reports are considered the natural choice for corporate governance information. Finally, the use of annual reports is consistent with previous CG studies conducted in Africa, which have principally used annual reports (e.g. Ntim

et al., 2014b, Ntim et al., 2014a, Ntim, 2014, Akinkoye and Olasanmi, 2014), and thus will allow for direct comparison of the study results.

Though the preceding discussion contends that annual reports are the main source of data for the research, other sources of data are used to supplement data from the annual reports. For example, data from other sources such as DataStream, Compustat, company websites and other relevant sources where available are used to triangulate with the information available on annual reports. By employing other data sources to complement the main data source, this study uses data triangulation as a strategy whereby multiple perspective of the same phenomena are considered through analysis of different data sources. According to Bryman and Bell (2011), richness and depth are gained with an analysis of multiple sources of data available to the researcher for each of the variables under study.

5.6.2 Sample Selection

As mentioned earlier, included in the research are Nigeria and South Africa. The sampled firms included in this study are drawn from firms listed on the Johannesburg Stock Exchange (JSE) and the Nigerian Stock Exchange (NSX). Data for this study covers a five-year period (2010–2015). The choice of listed companies and period is because of the following reasons:

First, the possibility of data availability and completeness for listed firms included in the study. Second, the CG codes operational in these countries were implemented before this period and therefore compliance with these codes can only be measured in the post-implementation era. Third, using the same period and type of firms allows for comparison across both countries. In addition, a five-year period meets the requirements for a dynamic panel data analysis (to be discussed in next section). More so, a five-year data set with both cross-sectorial and time series properties assists in ascertaining if the perceived cross-country and sectorial internal CG structures and firm financial performance nexus are consistent over time. In addition, sufficient time series data for five years is necessary to permit statistical and robustness analyses such as the test of endogeneity. Finally, using listed firms and a five-year period is consistent with prior studies in Africa which have typically used listed firms covering a five-year period

(Ntim et al., 2015b, Ntim et al., 2014b, Ntim et al., 2014a, Ntim, 2014, Ntim, 2013a, Abor and Fiador, 2013, Ehikioya, 2009, Kyereboah-Coleman, 2008, Khanchel El Mehdi, 2007, Sanda et al., 2005).

As of 31 December 2015, there were 188 listed firms on the Nigerian stock exchange (NSX), and South Africa (JSE) had 402 companies. The study first adopts a purposive sampling strategy to maximise representativeness of the sample in relation to the number of listed firms. Purposive sampling is used to select 80 firms from Nigeria and 100 firms from South Africa covering five-year period. Therefore, the sample size after purposive sampling gives a total of 500 firm-years (2010–2014) for South Africa and 400 firm years (2011–2015) for Nigeria, with a total of 900 firm years of data (i.e. 900 annual reports).

Following purposive sampling above, the next step captures a representative sample of listed firms for the 80 firms included in the final sample for Nigeria and 100 for South Africa. In this regard, a stratified quota sampling technique was adopted to include a representative sample from major industries in the respective stock markets.

In South Africa, all 402 listed firms on the JSE belong to one of the ten major industries, namely financials, oil and gas, consumer goods, consumer services, health care, industrials, technology, telecommunications, basic materials and utilities (see table 5, panel A). Health care, oil and gas, utilities and telecommunications industries where distributed to similar industry class because they each have less than ten listings and these firms represent less than 5% of the total of listed firms (see table 5, panel A and B). For example, health care is added to consumer services, and oil, gas and utilities are added to basic materials while telecoms IS added to technology (table 5, see panel B). For the final 100 sampled firms from South Africa, quota sampling is based on the quota of the resulting six industries, which gives a representation of 25% of the total sample of firms listed on the JSE.

Table 5: Summary of the South African Sample Selection Procedure

Panel A: Industrial composition of all listed firms as of 31/12/2014	No. of listed firms in each industry	Percentage (%) of total 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	0.7%
Utilities	2	0.5%
Total Sample	402	100%

Panel B: Industrial composition of companies available to be sampled	No. of listed firms in each industry	Percentage (%) of total population
Financials	109	27.1%
Industrials	81	20.1%
Basic Materials/Oil and Gas/Utilities	72	17.9%
Consumer Services/Health Care	69	17.2%
Consumer Goods	36	9.0%
Technology/Telecommunications	35	8.7%
Total sample	402	100%

Panel C: Final 100 stratified quota-sampled firms	No. of listed firms in each industry	Final no. of stratified quota sample	Final sample percentage of total listed population	Final sample percentage (%) of industrial sample
Financial Services	109	27	6.7%	25%
Industrials	81	20	5.0%	25%
Basic Materials /Oil and Gas /Utilities	72	18	4.5%	25%
Consumer Services / Health Care	69	17	4.3%	25%
Consumer Goods	36	9	2.2%	25%
Technology /Telecommunications	35	9	2.2%	25%
Total Sample	402	100	25%	

Like South Africa, all the 188 listed firms in the NSX were sampled to select 80 firms which are representative of the stock exchange listing. Listed firms in the NSX are categorised into 11 major industries, namely, financials, industrial goods, oil and gas, construction/real estate, natural resources, consumer goods, conglomerates, health care, telecommunications, agriculture and services (see table 6, panel A). Owing to fact that there were fewer than ten listings in each of the categories of construction/real estate, natural resources, conglomerates, telecommunications and agriculture (see table 6, panel A below), these categories were distributed to industries with similar characteristics (see table 6, panel B below). To enable classification into related industries, a description of the various industries in the NSX was used as a guide to make sure industries which are put together are more similar than any other industry classification. Thus, conglomerates were added to industrial goods; natural resources was added to oil and gas; agriculture was added to consumer goods; health care was added to services; and construction/real estate and ICT/telecommunications were added together (see panel B, table 6 below). For the final 80 firms used in the sample from Nigeria, quota sampling based on resulting six industries gives a representation of 43% of the total sample of listed firms in the NSX.

To be included in the sample across both countries, a mixture of both large and small firms was chosen based on the average market capitalisation of firms in an industry as reported in the respective stock exchanges. All firms sampled must have full annual report for the period 2010–2014 for South Africa and 2011–2015 for Nigeria. This must be available either through the respective stock exchange information centre, DataStream or Compustat, or available via another media site such as INET-Bridge electronic database, the African Securities Exchanges Association (ASEA), AfricanFinancials.com or the company website.

Table 6: Summary of Nigerian Sample Selection Procedure

Panel A: Industrial composition of all listed firms as of 31/12/2015	No. of listed firms in each industry	Percentage (%) of total population
Financials	57	30.3%
Industrial Goods	21	11.2%
Construction/Real Estate	9	4.8%
Natural Resources	5	2.7%
Consumer Goods	28	14.9%
Conglomerates	6	3.2%
Health Care	11	5.9%
Telecommunication /ICT	9	4.8%
Oil and Gas	14	7.4%
Agriculture	5	2.7%
Services	23	12.1%
Total population	188	100%
Panel B: Industrial composition of companies available to be sampled	No. of listed firms in each industry	Percentage (%) of total population
Financials	57	30.3%
Industrials/Conglomerates	27	14.3%
Natural Resources/Oil and Gas/Utilities	19	10.1%
Consumer Services/Health Care	34	18.0%
Consumer Goods/Agriculture	33	17.6%
ICT/Real Estate	18	9.6%
Total population	188	100%

Panel C: Final 80 stratified quota-sampled firms	No. of listed firms in each industry	Final no. of stratified quota sample	Final sample percentage of total listed population	Final sample percentage (%) of industrial sample
Financials	57	31	17%	54%
Industrials/Conglomerates	27	6	4%	22%
Natural Resources/Oil and Gas/Utilities	19	9	5%	47%
Consumer Services Health Care	34	12	6%	35%
Consumer Goods/Agriculture	33	16	9%	48%
ICT/Real Estate	18	6	4%	33%
Total population	188	80	45%	

5.7 Summary of Chapter

To examine the main research question and sub-research questions highlighted in section 1.4.1.1, this chapter has presented, discussed and justified the chosen research methodology. Specifically, the chapter clearly articulates the research methods, analytical approaches, variables, data collection methods employed to examine the main research question (1.4.1) and sub-research questions (1.4.1.1). More importantly, the chapter develops model specification for the compliance index model and the equilibrium variable model. Hence, the chapter overlays the foundation within which Chapter 6 (descriptive for country-level CG compliance) and Chapter 7 (descriptive for country-level CG alternative internal mechanisms and correlation results) are developed.

CHAPTER 6

6.0 DESCRIPTIVE STATISTICS: COMPLIANCE WITH COUNTRY-LEVEL GOVERNANCE REGULATIONS (NICGI & SACGI)

6.1 Introduction

As discussed in Chapter 5, two main CG models are employed to examine sub-research questions 1 and 2. This chapter presents the descriptive statistics for country-level compliance with CG provisions which is the descriptive for the independent variables in the compliance index model. To begin with, section 6.2 presents comparative descriptive statistics for level of compliance with Nigeria's SEC 2011 corporate governance code (measured by the index NICGI) and South Africa's King III code (measured by the index SACGI). These descriptives are reported in table 7 (Panel A) and represented diagrammatically in figure one (Fig 1). The next section (6.3) presents the descriptive statistics for country-level compliance with shareholder CG provisions and as reported in table 7 (Panel B) and in figure one (Fig 1). Section 6.4 presents the descriptive statistics for country-level institutional stakeholder CG provisions as shown in figure three (Fig 3) and reported in table 7 (Panel C). 6.5 compares the level of compliance between firms cross-listed in other stock markets (dual list) and firm who are not cross-listed (non-dualist) in both countries and reported in panel A in table 8. Section 6.6 compares the level of compliance between firms audited by the top four international auditors (Deloittes, PricewaterhouseCoopers (PwC), KPMG and Ernst and Young) and those audited by non-top four auditors and the descriptives are presented in panel B in table 8. Similarly, 6.7 discusses CG compliance descriptives between large and small firms as shown in table 9, panel A. The next section (6.8) presents comparative compliance descriptives between financial and non-financial firms as shown in table 9, panel B. Finally, 6.9 presents the conclusion of the chapter.

6.2 Descriptive Statistics: Compliance with Country-level Corporate Governance Provisions

As noted earlier, countries have developed CG regulations based on the institutional realities of conducting business in these countries. For example, South Africa as discussed in Chapter 3 (section 3.3) has developed the King III report with provisions

aimed at eradicating the problems caused by apartheid, whereas Nigeria's CG code is geared towards alleviating inequalities and corruption, attracting foreign investors and reducing the problems faced during the military era. As such, the next few paragraphs present and compare how firms have complied with these CG provisions in the respective countries. Table 7, panel A reports the mean, standard deviation, minimum, maximum and percentage increase in country-level CG compliance by listed firms in Nigeria and South Africa.

From panel A on table 7 below, there has been an increasing trend of compliance with country-level CG codes in both Nigeria and South Africa. The average compliance by Nigerian firms to the SEC 2011 CG code ranges from 63.9% (i.e. 48 out of 75) in 2011 to 79.92% (i.e. 60 out of 75) in 2015, with a pooled average of 71.38% (i.e. 54 out of 75), whereas in South Africa, firm application of King III CG code ranges from 80.39% (i.e. 66 out of 84) in 2010 to 89.16% (i.e. 75 out of 84) in 2014, with a pooled average of 86.05% (i.e. 72 out of 84). The average level of compliance with King III within the 5-year period (86.05%) surpasses the compliance level of 61.34% reported by Ntim (2012; p.45; 2013, p.13), who used the King II CG code for the period 2002 to 2006 and 2002 to 2007 respectively. However, the average compliance with SEC 2011 CG code (71.38%) is like the 72% level of compliance reported by Akinkoye and Oladsnmi (2014) using SEC 2003 CG code for the period 2003–2010.

Furthermore, from figure 1 below, comparatively, South African firms comply more with the country-level CG provisions than Nigerian firms. This is because South African firms have reached a level of maturity in CG regulatory compliance since they started reporting on CG practices in 1994 after the King I report, whereas Nigerian firms may still be getting accustomed to CG compliance as its first CG code was introduced in 2003. However, over the five-year sampled period, Nigerian firms seem to be increasing their compliance level over the years more than South African firms. The average increase within the five-year period in Nigeria ranges from 2.90% in 2013 to the highest of 5.68% in 2015, with five-year pooled average of 4.01%, whereas, in South Africa, average compliance by listed firms ranges from 0.58% in 2014 to a high of 4.52% in 2011, with a pooled average of 2.19%. These figures suggest that, after the introduction of King III, firms increased their CG compliance in

2011, but, beyond that, compliance levels have increased at a decreasing rate. In Nigeria, however, listed firms are on average increasing their CG compliance levels.

In addition, there is high variability in compliance with country-level CG provisions. However, Nigerian firms show higher variations in their CG compliance than South African firms. For example, the standard deviation for CG compliance in Nigeria is approximately 16.71% (i.e. 13 out of 75), with a pooled maximum of 98.87% (i.e. 74 out of 75) and minimum of 16% (i.e. 7 out of 75). But in South Africa, compliance with King III has an average variation of 7.88% (i.e. 7 out of 84), with a minimum of 52% (i.e. 44 out of 84) and a maximum of 98% (i.e. 82 out of 84). This suggests that, in Nigeria, despite the increasing demand for compliance with CG provisions across the globe, some firms comply with less than 50% of the SEC 2011 CG requirements, whereas listed South African firms comply with more than 50% of King III CG requirements.

Fig. 1: Compliance with Country-level Corporate Governance Provisions

Firm Years	All Firm Years	2010	2011	2012	2013	2014	2015
Nigeria	71	0	64	68	71	74	80
South Africa	86	80	85	87	89	89	0

Table 7: Descriptive Statistics – Compliance with Country-level Corporate Governance Index (NICGI & SACGI), Shareholder and Stakeholder Corporate Governance Provisions

	Nigeria (400 firm years, i.e. 2011–2015)					South Africa (500 firm years, i.e. 2010–2014)				
Year	Mean	SD	Min	Max	% Increase	Mean	SD	Min	Max	% Increase
Panel A: Compliance with Country-level Corporate Governance Provisions (NICGI & SACGI)										
Nigerian Corporate Governance Index (NICGI)						South African Corporate Governance Index (SACGI)				
All Firm Years	71.38	16.71	16.00	98.67	4.01	86.05	7.88	52.00	98.00	2.19
2010	-	-	-	-	-	80.39	8.68	52.00	94.00	-
2011	63.90	17.09	16.00	96.00	0.00	84.91	7.27	54.00	98.00	4.52
2012	67.98	17.32	16.00	96.00	4.08	87.21	6.89	55.00	98.00	2.30
2013	70.88	15.77	16.00	96.00	2.90	88.58	6.73	55.00	98.00	1.37
2014	74.23	14.91	16.00	97.33	3.35	89.16	6.39	55.00	98.00	0.58
2015	79.92	14.00	21.33	98.67	5.68	-	-	-	-	-
Panel B: Compliance with Country-level Shareholder Corporate Governance Provisions										
Nigerian Shareholder Corporate Governance Index (Shareholder–NICGI)						South African Shareholder Corporate Governance Index (Shareholder–SACGI)				
All Firm Years	72.71	15.45	18.03	98.36	3.86	87.36	8.24	54.00	100.00	2.27
2010	-	-	-	-	-	81.41	9.12	54.00	94.00	-
2011	65.61	15.91	18.03	95.08	-	86.36	7.65	55.00	99.00	4.95
2012	69.39	15.97	18.03	95.08	4.08	88.60	7.23	56.00	100.00	2.24
2013	72.13	14.44	18.03	95.08	2.90	89.96	7.01	56.00	100.00	1.36
2014	75.39	13.43	18.03	96.72	3.35	90.47	6.63	56.00	100.00	0.51
2015	81.05	12.99	24.59	98.36	5.66	-	-	-	-	-
Panel C: Compliance with Country-level Stakeholder Corporate Governance Provisions										
Nigerian Stakeholder Corporate Governance Index (Stakeholder–NICGI)						South African Stakeholder Corporate Governance Index (Stakeholder–SACGI)				
All Firm Years	65.59	26.41	0	100.00	4.64	79.43	10.12	23.00	100.00	1.80
2010	-	-	-	-	-	75.21	10.96	23.00	100.00	-
2011	56.43	26.93	0	100.00	-	77.78	9.43	46.00	92.00	2.57
2012	61.88	27.46	0	100.00	5.45	80.07	9.22	46.00	100.00	2.29
2013	65.45	25.85	0	100.00	3.57	81.67	9.39	46.00	100.00	1.60
2014	69.20	25.81	7.14	100.00	3.75	82.40	9.95	46.00	100.00	0.73
2015	75.00	22.50	7.14	100.00	5.80	-	-	-	-	-

6.3 Descriptive Statistics: Compliance with Country-level Shareholder Corporate Governance Provisions

As noted earlier in 5.2.4.1 (Chapter 5), two sub-indices are developed in the respective countries with one containing provisions aimed at protecting shareholder value whereas the other captures context-specific stakeholder issues. This section therefore discusses and compares the distributional characteristics of firm-level compliance with 61 provisions in Nigeria (Shareholder–NICGI) and the 71 conventional shareholder corporate governance requirements in South Africa (Shareholder–SACGI) aimed at protecting shareholder value maximisation in both countries. The essence is to ascertain whether firm-level compliance with country-level CG requirements (NICGI and SACGI) observed in the preceding section also exists in terms of compliance with shareholder requirements. As noted earlier in section 4.11 in Chapter 4, it is expected that a high level of compliance with shareholder requirements of SEC 2011 CG code and King III will signal to investors the presence of high-quality standards within listed firms in both countries, which will show greater transparency, accountability and commitment to reducing information asymmetry.

Panel B on table 7 above and figure 2 (Fig.2) below report the pooled average and annual aggregate levels of compliance with Shareholder–NICGI and Shareholder–SACGI in Nigeria and South Africa respectively. Several patterns can be observed in Panel B and figure two. First of all, consistent with the level of compliance with NICGI and SACGI, there is evidence of wide variability in the level of compliance with shareholder provisions in both countries. The scores in Nigeria range from 65.61% (i.e. 40 out of 61) in 2011 to 81.05% (i.e. 49 out of 61) in 2015, with a pooled average of 72.71% (i.e. 44 out of 61). Similarly, Shareholder–SACGI scores in South Africa range from 81.41% (i.e. 57 out of 71) in 2010 to 90.47% (i.e. 64 out of 71) in 2014, with a pooled aggregate of 87.36% (i.e. 62 out of 71). This suggests that firms in both countries comply with shareholder CG provisions in the same manner as they comply with the composite country-level provisions (NICGI and SACGI). However, on average in both countries, compliance with shareholder requirements is higher than compliance with the composite index. For example, in Nigeria, on average firms' compliance with Shareholder–NICGI is at 72.71% whereas it is at 71.38% for NICGI.

Similarly, in South Africa, firm compliance with Shareholder–SACGI is on average 87.36% compared to 86.05% for SACGI. Like SACGI, Shareholder–SACGI aggregate compliance results are higher than those reported by Ntim, (2012, p.19; 2013, p.13).

In addition, as with NICGI and SACGI, there is an increasing trend in compliance with shareholder provisions in both countries. The pooled average increase in compliance with Shareholder–SACGI is 2.27%, with a maximum increase of 4.95% in 2011 and a minimum of 0.51% in 2014. Similarly, Shareholder–NICGI shows an aggregate increase of 3.86%, ranging from 2.90% in 2013 to 5.66% in 2015. Comparatively, the average percentage increase in Shareholder–SACGI (2.27%) is higher than for the SACGI (2.19%). On the contrary, in Nigeria, Shareholder–NICGI has a lower aggregate percentage increase (3.86%) as compared to NICGI (4.01%).

Similar to NICGI and SACGI, from figure two below, comparatively, South African firms on average comply more with shareholder CG provisions than Nigerian firms. However, consistent with the respective compliance levels for NICGI and SACGI reported earlier, on average, over the five-year sampled period in both countries, Nigerian firms are increasing their shareholder requirement compliance level more year-on-year than South African firms. Aggregate shareholder CG compliance increased in the five-year period in Nigeria, ranging from 2.90% in 2013 to the highest level of 5.66% in 2015, with a pooled average of 3.86%. While in South Africa, average compliance with shareholder CG requirements by listed firms ranged from 0.51% in 2014 to a high of 4.95% in 2011, with a pooled average of 2.19%. Hence, similar to NICGI, listed firms in Nigeria are on average increasing their compliance with shareholder CG provisions. On the contrary but consistent with SACGI, after the introduction of King III, firms increased their shareholder CG compliance in 2011, but, beyond that, compliance levels to shareholder requirements have increased at a decreasing rate.

Fig. 2: Compliance with Country-level Shareholder Corporate Governance Provisions

Compliance to Country-level Shareholder Corporate Governance Provisions

☐ Nigeria ☐ South Africa

	All Firm Years	2010	2011	2012	2013	2014	2015
☐ Nigeria	73	0	66	69	72	75	81
☐ South Africa	87	81	86	89	90	90	0

Compliance Level(%) — (y-axis: 0, 20, 40, 60, 80, 100)

Firm Years

6.4 Descriptive Statistics: Compliance with Country-level Stakeholder Corporate Governance Provisions

As earlier discussed, countries have incorporated stakeholder inclusive practices in CG codes, requiring firms to comply with them. As noted earlier, these contextual/institutional stakeholder inclusive provisions in the respective countries are reflective of the prevailing economic, political, socio-cultural and historical processes.

As mentioned earlier, SACGI and NICGI were split into two, with one containing provisions aimed at protecting shareholder value (descriptive discussed in 6.3) whereas the other captures country-specific stakeholder issues. As such, this section discusses and compares the distributional features of firm-level compliance with 13 provisions in South Africa (Stakeholder–SACGI) and 14 stakeholder inclusive requirements in Nigeria (Stakeholder–NICGI) aimed at protecting stakeholder expectations in both countries. The reason for this is to ascertain whether firm-level compliance with country-level and shareholder CG requirements discussed in 6.2 and 6.3 respectively exists in terms of compliance with institutional stakeholder provisions. As mentioned in section 4.11 (Chapter 4), it is expected that a high level of compliance with stakeholder requirements of SEC 2011 CG code and King III signals that a firm is conforming to societal norms and expectations in respective countries, which shows greater transparency and accountability beyond shareholder expectations.

Descriptive results for pooled average and annual combined levels of compliance with Stakeholder–NICGI and Stakeholder–SACGI in Nigeria and South Africa respectively are reported in Panel C in table 7 above and figure three (Fig.3) below. Interesting distributional properties can be observed in figure 3 and panel C. To begin with, like the levels of compliance with NICGI and SACGI, there is an indication of wide heterogeneity in the levels of compliance with stakeholder provisions in both countries. The scores in South Africa range from 75.21% (i.e. 10 out of 13) in 2010 to 82.40% (i.e. 11 out of 13) in 2014, with a pooled average of 79.43% (i.e. 10 out of 13). However, in Nigeria, Stakeholder–NICGI scores vary with a maximum of 75% (i.e. 11 out of 14) in 2015 and a minimum of 56.43% (i.e. 8 out of 14) in 2011, with a combined average of 65.59% (i.e. 9 out of 14). These results imply that listed firms in Nigeria and South Africa are compliant with institutional/contextual stakeholder CG practices in the same way that compliant with both the composite country-level provisions (NICGI and SACGI) as well as the shareholder provisions. However, contrary to the descriptive observed with compliance with shareholder requirements, compliance with country-specific stakeholder requirements is less than compliance with the composite index (SACGI and NICGI) and shareholder provisions in both South Africa and Nigeria. For instance, in South Africa, on average firm compliance with Stakeholder–SACGI is at 79.43% whereas compliance with SACGI and Shareholder–SACGI are at 86.05% and 87.36% respectively. Equally in Nigeria, firm compliance with Stakeholder–NICGI is on average 65.59% compared to 72.71% for Shareholder–NICGI and 71.38% for NICGI. Interestingly, Stakeholder–SACGI average compliance results are similar those reported by Ntim et al. (2012,pp.19), Ntim (2013a,pp.13) in South Africa using stakeholder provisions from the King II CG code.

More so, both countries show similar increasing trends in compliance with context-specific stakeholder provisions. In Nigeria, the pooled average increase in compliance with stakeholder requirements is 4.64%, with a maximum increase of 5.80% in 2015 and a minimum of 3.57% in 2013. Likewise, compliance with the King III CG provisions displays a pooled average increase of 1.80%, with a minimum of 0.73% in 2014 and a maximum of 2.57% in 2011.
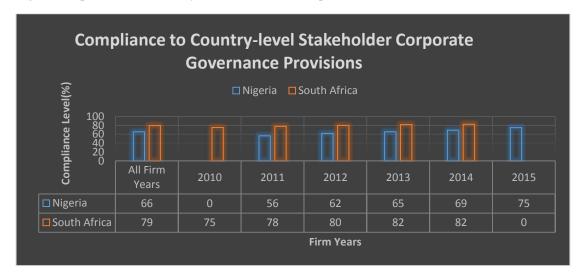
Fig. 3: Compliance with Country-level Stakeholder Corporate Governance Provisions

Interestingly, year-on-year average increase in compliance with stakeholder CG provisions in Nigeria is on average higher (4.64%) than for the composite index, i.e. NICGI (4.64%) and shareholder index (3.86%). In contrast, aggregate percentage increase in Stakeholder CG practices in South Africa is lower (1.80%) as compared to shareholder CG compliance (2.27%) and the composite index, i.e. SACGI (2.19%). This suggests that, while compliance with country-specific CG practices in both countries is increasing, Nigerian firms are continuously improvising on their disclosure of stakeholder CG practices year-on-year whereas South African firms are increasing their stakeholder CG practices but at a decreasing rate. This suggests that, consistent with SACGI and Shareholder–SACGI, after the introduction of King III, firms increased compliance with South African contextual stakeholder practices in 2011, but beyond that, compliance levels with contextual stakeholder practices have increased at a decreasing rate.

However, consistent with the results reported for the composite indices in both countries as well as the shareholder indices, comparative examination from figure three above (Fig.3) shows that, on average, South African-listed firms comply more with South African context stakeholder CG provisions than Nigerian firms. Worthy of note is that in both countries, while some firms comply with stakeholder provisions fully across all firm years, some firms do not or comply partially with stakeholder CG practices. For example, from 2011 to 2013, some firms in Nigeria have a zero score (non-compliance), 7.14% in 2014 and 2015, whereas in South Africa, the least score

for stakeholder compliance in 2010 was 23% and increased to 46% in the subsequent years to 2014. This low level of compliance with country-specific CG provisions in both countries suggests that some firms may not see the value of disclosing or complying with stakeholder expectations.

Following CG compliance literature (e.g. v Werder et al., 2005, Ntim et al., 2012, Ntim et al., 2015b), the pooled samples in both countries are split into sub samples on the basis of listing, external auditor size, firm size and industry. The aim of these splits is to verify whether the observed variability in country-level composite CG indices and sub-indices can be explained by firm-level characteristics. In addition, the sample is divided into these different groups because these firm-level characteristics (e.g. firm size and industry) are the main criteria for stratified sample (discussed in 5.6.2) of 100 firms and 80 firms selected in South Africa and Nigeria respectively. Therefore, the next section further examines the distributional properties of the country-level CG index and the sub-composite indices (shareholder and stakeholder indices) across these firm- and industry-level peculiarities.

6.5 Descriptive Statistics: Country-level Compliance Between Dual- and Non-Dual-Listed Firms

As discussed in 5.5.4, dual listing can serve as a bonding structure used by corporate managers to gain the trust of investors and show investors they are committed to sound CG disclosure practices which may increase market valuation (Siegel, 2009). In addition, dual-listed firms are argued to have more CG transparency owing to high scrutiny (Ntim, 2012b, Ntim et al., 2012). To ascertain whether dual-listed firms are more likely to comply with CG provisions in respective countries, the sample was split between dual-listed and non-dual-listed firms.

Panel A in table 8 and figure four (Fig.4) below show the levels of compliance between dual-listed firms and non-dual-listed firms based on the pooled mean. Firm-level compliance with the Nigerian Corporate Governance Index (NICGI) for dual-listed-firms displays an average of 82.04% (i.e. 62 out of 75), with a maximum of 98.67% (i.e. 74 out of 75) and a minimum of 42.67% (i.e. 32 out of 75), with a standard deviation of 7.58%. However, non-dual-listed firms on average comply with

NICGI at 69.12% (i.e. 52 out of 75), with the most compliant firm scoring 96% (i.e. 72 out of 75) and the least compliant score of 16% (i.e. 12 out of 75), with a variation of 16.45%. Similarly, on average, dual-listed South African firms comply with 88.74% (i.e. 75 out of 84) of the King III CG provisions, with a high of 98% (i.e. 82 out of 84), a low of 69% (i.e. 58 out of 84) and a variation of 4.96%. In contrast, non-dual-listed South African firms on average comply with 85.5% (i.e. 72 out of 84) of SACGI, with a minimum of 52% (i.e. 44 out of 84), a maximum of 98% (i.e. 82 out of 84) and a variation of 8.25%. These results suggest cross-listed firms in both countries comply with country-level CG requirements more than non-dual-listed firms. These results support the bonding hypothesis argument that dual listing subjects firms to more rigorous CG requirements, which enhances their ability to comply with country-level CG practices, especially for firms from weak institutional environments (see, Charitou et al., 2007, Coffee Jr, 2002, Lel and Miller, 2008).
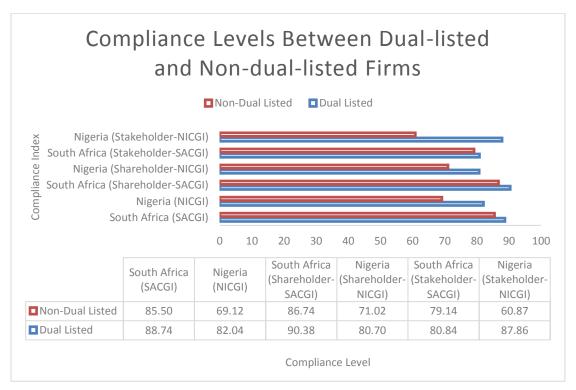
Fig. 4: Compliance level between dual-listed and non-dual-listed firms

Compliance Levels Between Dual-listed and Non-dual-listed Firms

	South Africa (SACGI)	Nigeria (NICGI)	South Africa (Shareholder-SACGI)	Nigeria (Shareholder-NICGI)	South Africa (Stakeholder-SACGI)	Nigeria (Stakeholder-NICGI)
Non-Dual Listed	85.50	69.12	86.74	71.02	79.14	60.87
Dual Listed	88.74	82.04	90.38	80.70	80.84	87.86

Compliance Level

However, comparatively, there is considerable heterogeneity between South Africa and Nigeria regarding compliance by dual-listed firms. For example, the mean difference in compliance between dual- and non-dual-listed firms is significant at 1% in both countries, but there is a higher variation in Nigeria (12.914***) than in South

Africa (3.242***). This suggests more symmetry in compliance between cross-listed and non-cross-listed South African firms whereas there is more dispersion between these groupings in Nigerian. The low level of compliance heterogeneity between non-dual-listed and dual-listed firms in South Africa can be attributed to the fact that South African firms have been accustomed to CG regulations since 1994. Accordingly, irrespective of dual listing, most firms have attained some level of maturity and are accustomed to CG compliance as it has become a culture embedded with firm CG practices irrespective of cross-listing status. However, the high variation between cross-listed Nigerian firms and non-cross-listed firms can be attributed to limited exposure to good CG practices, since firms were exposed to CG regulations only in 2003 and as such may be getting used to the compliance process. Consequently, cross-listed firms that are exposed to CG regulations in more stringent stock markets comply more to the SEC 2011 CG than non-dual-listed firms.

Interestingly, there are non-cross-listed firms that comply with CG provisions more than some cross-listed firms in both countries. For example, the average compliance of non-cross-listed firms of 69.12% in Nigeria and 85.50% in South Africa compared to the minimum of 42.67% in Nigeria and 69% in South Africa for dual-listed firms suggests that some non-dual-listed firms comply with CG provisions more than some dual-listed firms.

Similar to compliance with respective country CG indices (NICGI and SACGI), the level of compliance with shareholder and stakeholder CG provisions in both countries is higher for dual-listed firms than non-dual-listed firms. However, the mean variation in compliance with stakeholder CG practices in Nigeria shows a higher statistical significance (1%) than in South Africa (10%). Interestingly, there is almost an equal level of compliance with South African contextual CG provisions between dual-listed firms (80.84%) and non-dual-listed firms (79.14%). More so, consistent with country CG index, the compliance with shareholder and stakeholder CG provisions is higher in South Africa than in Nigeria, indicating South African firms comply with institutional CG expectations better than Nigerian firms.

6.6 Descriptive Statistics: Country-level Compliance Between Firms with Big 4 Auditors and Firms with Non-Big 4 Auditors

As noted earlier in subsection 5.5.6, extant CG literature suggests that the size of an audit firm matters in determining CG systems, quality of annual reports and firm valuation (Ntim et al., 2010, Ntim, 2013a, El Ghoul et al., 2016). Particularly, literature suggests that the extent of an auditor's independence and audit quality is dependent on the size of the external audit firm. Literature suggests that audit firm size is positively correlated with audit fees (Francis, 1984; Alsaeed, 2006). This implies large firms are more likely to employ the big four audit firms, as they expect to have access to resources in addition to both local and international reputation. Consequently, firms who employ these large audit firms are seen to be willing to adhere to stringent CG standards and quality financial reporting which enhances firm valuation. Thus, it is expected that firms who employ the top four audit firms (i.e. PWC, Deloitte Touche Tohmatsu, KPMG and Ernst and Young) are more likely to comply with CG provisions.

External auditors in both the South African King III and Nigerian SEC 2011 CG are expected to certify the annual reports of firms to be of 'true and fair' value to the firms. In addition, audit firms in both countries are expected to comment on the level of existing CG systems in firms. Following from extant literature and the recommendation of the respective country-level CG codes, the sample was split into firms with top big four auditors and those audited by non-top big four auditors.

Panel B on table 8 shows the distributional properties between firms audited by the big four auditors and those audited by non-big four auditors. The table shows that, on average, 87.15% (i.e. 73 out of 84) of firms audited by the big four auditors comply with King III CG provisions (SACGI), whereas firms with non-big four auditors comply at 84.39% (i.e. 71 out of 84). Similarly, in Nigeria, firms audited by the big four auditors comply with 75.92% of the SEC 2011 CG provisions (i.e. 56 out of 75) whereas firms audited by non-big four auditors comply with 62.57% (i.e. 47 out of 75) of the SEC 2011 CG provisions. There is a statistically significant mean difference in compliance with respective country CG codes between firms audited by top four auditors and those not audited by top four auditors

Table 8: Compliance Levels between Dual- and Non-Dual-Listed Firms (Panel A) and between Firms with Big 4 Auditors and Firms with Non-Big 4 Auditors (Panel B)

	Panel A: Level of Compliance – Dual-Listed versus Non-Dual-Listed Firms									
	Nigeria (400 firm years, i.e. 2011–2015)				South Africa (500 firm years, i.e. 2010–2014)				Mean Comparison (T-Test)	
	Dual-Listed Nigerian Firms (70 firm years)				**Dual-Listed South African Firms (85 firm years)**				**Nigeria**	**South Africa**
Variable	Mean	SD	Min	Max	Mean	SD	Min	Max		
Corporate Governance Index (NICGI & SACGI)	82.04	13.58	42.67	98.67	88.74	4.96	69.00	98.00	(12.914) ***	(3.242) ***
Shareholder Corporate Governance Index	80.70	12.78	45.90	98.36	90.38	5.05	69.00	99.00	(9.684) ***	(3.634) ***
Stakeholder Corporate Governance Index	87.86	19.66	28.57	100.00	80.84	9.91	54.00	100.00	(26.991) ***	(1.698) *
	Non-Dual-Listed Nigerian Firms (330 firm years)				**Non-Dual-Listed South African Firms (315 firm years)**					
Corporate Governance Index (NICGI & SACGI)	69.12	16.45	16.00	96.00	85.50	8.25	52.00	98.00		
Shareholder Corporate Governance Index	71.02	15.45	18.03	95.08	86.74	8.62	54.00	100.00		
Stakeholder Corporate Governance Index	60.87	25.23	0.00	100.00	79.14	10.15	23.00	100.00		
	Panel B: Level of Compliance – Firms with Big 4 Auditors versus Firms with Non-Big 4 Auditors									
	Nigerian Firms with Big 4 Auditors (264 firm years)				**South African Firms with Big 4 Auditors (301 firm years)**					
Corporate Governance Index (NICGI & SACGI)	75.92	14.78	22.67	98.67	87.15	6.36	65.00	98.00	(13.556)***	(2.762)***
Shareholder Corporate Governance Index	76.21	13.72	22.95	98.36	88.51	6.68	66.00	99.00	(10.287)***	(2.901)***
Stakeholder Corporate Governance Index	74.68	23.78	21.43	100.00	80.28	9.65	23.00	100.00	(26.7234)***	(2.135)**
	Nigerian Firms with Non-Big 4 Auditors (136 firm years)				**South African Firms with non-Big 4 Auditors (199 firm years)**					
Corporate Governance Index (NICGI & SACGI)	62.57	16.75	16.00	94.67	84.39	9.51	52.00	98.00		
Shareholder Corporate Governance Index	65.92	16.39	18.03	93.44	85.61	9.92	54.00	100.00		
Stakeholder Corporate Governance Index	47.95	22.01	0.00	100.00	78.14	10.69	38.00	92.00		

This supports extant literature that the size of an audit firm is important in increasing CG compliance practices in both countries (Ntim et al., 2010, Ntim, 2013a, El Ghoul et al., 2016).

In addition, like dual listing, the variation between compliance by firms audited by the big four auditors is high in Nigeria compared to South Africa. The mean difference in South Africa is 2.762*** but 13.556*** in Nigeria. Again, this suggests that South African firms on average irrespective of auditor's size have less heterogeneity in their CG compliance than Nigerian firms. In addition, South African firms audited by both the big four auditors and non-big four auditors on average comply with SACGI (South Africa) better than Nigerian firms comply with NICGI.

In addition, consistent with compliance with respective country compliance indices (NICGI and SACGI), compliance with shareholder and stakeholder CG requirements in Nigeria and South Africa is generally higher for firms with big four auditors than those with non-big four audit firms. The average variation in country-level stakeholder and shareholder CG requirements in both countries is statistically significant. Nevertheless, like dual listing, the heterogeneity in compliance with stakeholder CG practices by firms with top four auditors and those with non-top four auditors is higher in Nigeria (26.72***) than in South Africa (2.14***). Like dual listing, there is almost an equal level of compliance with South African contextual CG provisions for firms with top four auditors (80.28%) and non-top four audit firms (78.14%). More so, analogous with dual listing, compliance with shareholder and stakeholder CG provisions is higher in South Africa than in Nigeria. Again, this suggests that, irrespective of audit firm size, South African firms comply with stakeholder and stakeholder institutional CG expectations better than Nigerian firms.

Following the above discussions, figure five (Fig.5) below shows the distributional properties between firms with top four auditors and firms with non-big four auditors in South Africa and Nigeria.
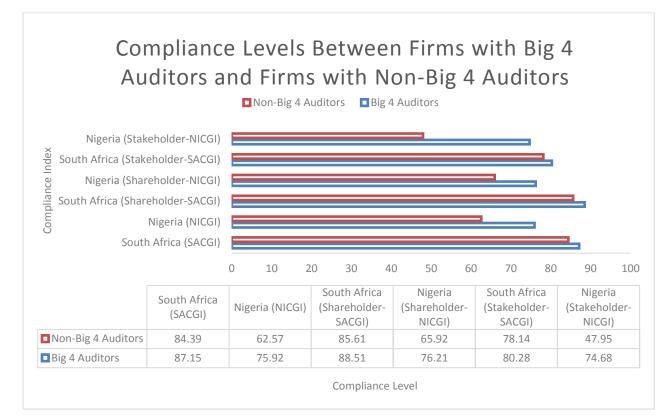
Fig. 5: Compliance Levels Between Firms with Big 4 Auditors and Firms with Non-Big 4 Auditors

Compliance Levels Between Firms with Big 4 Auditors and Firms with Non-Big 4 Auditors

□ Non-Big 4 Auditors   □ Big 4 Auditors

	South Africa (SACGI)	Nigeria (NICGI)	South Africa (Shareholder-SACGI)	Nigeria (Shareholder-NICGI)	South Africa (Stakeholder-SACGI)	Nigeria (Stakeholder-NICGI)
□ Non-Big 4 Auditors	84.39	62.57	85.61	65.92	78.14	47.95
□ Big 4 Auditors	87.15	75.92	88.51	76.21	80.28	74.68

Compliance Level

6.7 Descriptive Statistics: Country-level Compliance Between Large and Small Firms

As noted earlier in 5.5.3, existing literature suggests the size of a firm is likely to affect both the quality of CG systems and firm performance (e.g. Beiner et al., 2006, Ntim et al., 2010, Ntim et al., 2012). Some authors have argued that, owing to the need to mitigate agency problems and reduce agency cost, large firms are likely to comply with country-level CG disclosure requirements (e.g. Beiner et al., 2006; Ntim et al., 2012, p.17). However, other scholars (e.g. Klapper and Love, 2004, p.713) posit that smaller firms tend to have better growth prospects than larger firms and will need external capital to finance growth. Thus, small firms will comply with CG requirements, as it signals commitment to transparency which attracts external financing. Moving away from prior studies using total assets (e.g. Ntim et al., 2012,pp.17, Dauth et al., 2017,pp.77) as firm size proxy, this study adopts respective stock market rating of firm size to capture institutional classification of size. The following figure (Fig.6) displays the distributional compliance characteristics between large and small firms in both countries.

Fig. 6: Compliance Levels between Large and Small Firms

Compliance Levels Between Large and Small Firms

	South Africa (SACGI)	Nigeria (NICGI)	South Africa (Shareholder-SACGI)	Nigeria (Shareholder-NICGI)	South Africa (Stakeholder-SACGI)	Nigeria (Stakeholder-NICGI)
Small Firms	83.81	64.08	85.04	66.94	77.58	51.62
Large Firms	88.29	79.22	89.68	78.91	81.27	80.57

Compliance Level

Panel A in table 9 displays the descriptive features of compliance levels between large and small firms in the respective countries. To begin with, on average, large firms in Nigeria comply with 79.22% (i.e. 59 out of 75) of the SEC 2011 provisions whereas small firms comply with 64.08% (i.e. 48 out of 75), with a significant mean difference of 15.142*** at 1%. Similarly, in South Africa, small firms' compliance with King III CG provisions on average is at 83.81% (i.e. 70 out of 84), compared to 88.29% (i.e. 74 out of 84) for large firms, with significant mean difference of 4.484*** at 1%. This suggests that, like dual listing and big 4 auditors, large firms in both Nigeria and South Africa comply with country-level CG requirements more than small firms. This lends support to the argument that large firms are more likely to highly comply with country-level CG disclosure requirements to mitigate agency problems and reduce agency cost than smaller firms. In addition, the sample t-test for equality of means in both countries between small and large firms (Panel A, table 9, column 10 & 11) rejects the null hypothesis that the means are equal at 1% significance level.

Comparatively, there is at least twice the level of heterogeneity in CG compliance between small and large firms in Nigeria than in South Africa. For example, the mean

level of variation in Nigeria between large and small firms is at 15.14% compared to 4.48% in South Africa. In addition, between large firms, the level of variation in South Africa is at 5.22%, whereas in Nigeria it is at 14.24%. Similarly, small firms in South Africa vary in their compliance by 9.33%, while in Nigeria it is at 15.51%. This evidences that South African firms are improving their CG standards more symmetrically than Nigerian firms irrespective of size. In fact, the average compliance with King III CG provisions in South Africa by small firms (83.81%) is higher than the average compliance with SEC 2011 CG regulations by large firms in Nigeria (79.22%).

Furthermore, consistent with compliance with respective country compliance indices (NICGI and SACGI) discussed in the preceding paragraphs, compliance with shareholder and stakeholder CG requirements by large firms is higher than for small firms. There is consistent statistically significant average variation in country-level stakeholder and shareholder CG requirements in both countries. Nonetheless, similar to dual listing and audit firm size, the level of compliance with country-level stakeholder CG practices by large firms compared to small firms is eight times as large in Nigeria (28.95***) than in South Africa (3.69***). In addition, comparable with dual listing and audit firm size, compliance with shareholder and stakeholder inclusive CG provisions by both large and small firms in South Africa is higher than in Nigeria. This implies that, irrespective of firm size, South African firms comply with institutional stakeholder CG expectations better than Nigerian firms. However, interestingly, large firms in Nigeria comply with institutional stakeholder (80.57%) provisions better than they do with the composite CG provisions (79.22%) and shareholder CG provisions (78.91%) of the SEC 2011 CG code, but the reverse is true for South African firms. The high level of compliance by large firms with institutional stakeholder provisions (though this involves huge financial cost) in both countries may signal to investors that they are committed to increasing accountability and good governance.

Table 9: Compliance Levels between Large and Small Firms (Panel A) & between Financial and Non-Financial Firms (Panel B)

Panel A: Level of Compliance – Large versus Small Firms										
	Nigeria (400 firm years, i.e. 2011–2015)				South Africa (500 firm years, i.e. 2010–2014)				Mean Comparison	
	Nigerian Large Firms (200 firm years)				South African Large Firms (250 firm years)				Nigeria	South Africa
Corporate Governance Index (NICGI & SACGI)	79.22	14.24	24.00	98.67	88.29	5.22	68.00	98.00	(15.142)***	(4.484)***
Shareholder Corporate Governance Index	78.91	13.03	22.95	98.36	89.68	5.48	66.00	99.00	(11.973)***	(4.648)***
Stakeholder Corporate Governance Index	80.57	23.58	14.29	100.00	81.27	8.75	54.00	100.00	(28.948)***	(3.692)***
	Nigerian Small Firms (200 firm years)				South African Small Firms (250 firm years)					
Corporate Governance Index (NICGI & SACGI)	64.08	15.51	16.00	92.00	83.81	9.33	52.00	98.00		
Shareholder Corporate Governance Index	66.94	15.32	18.03	95.08	85.04	9.75	54.00	100.00		
Stakeholder Corporate Governance Index	51.62	20.64	0.00	100.00	77.58	11.04	23.00	92.00		
Panel B: Level of Compliance – Financial versus Non-Financial Firms										
	Nigerian Financial Firms (155 firm years)				South African Financial Firms (135 firm years)					
Corporate Governance Index (NICGI & SACGI)	77.14	14.04	28.00	98.67	84.16	10.54	52.00	98.00	(9.391)***	(2.584)***
Shareholder Corporate Governance Index	77.84	12.33	27.87	98.36	85.34	10.82	54.00	100.00	(8.374)***	(2.766)***
Stakeholder Corporate Governance Index	74.06	24.58	21.43	100.00	77.82	12.80	23.00	100.00	(13.822)***	(2.197)**
	Nigerian Non-Financial Firms (255 firm years)				South African Non-Financial Firms (365 firm years)					
Corporate Governance Index (NICGI & SACGI)	67.74	17.25	16.00	96.00	86.75	6.51	63.00	96.00		
Shareholder Corporate Governance Index	69.47	16.34	18.03	95.08	88.11	6.92	62.00	97.00		
Stakeholder Corporate Governance Index	60.23	26.17	0.00	100.00	80.02	8.88	54.00	100.00		

6.8 Descriptive Statistics: Country-level Compliance Between Financial and Non-Financial Firms

As earlier mentioned, most of the studies conducted in Africa have used a sample of non-financial firms (see 3.6 and table 4). Our understanding of single-country and multi-country CG compliance within the financial sector in Africa is still limited. Extant literature suggests that financial firms are heavily regulated, which may impact positively on their CG compliance (Yermack, 1996,pp.189, Chen et al., 2008,pp.12, Ntim, 2009,pp.134). According to Adams and Mehran (2003,pp.124), financial firms are unique from non-financial firms in that the number of stakes in financial firms complicates the governance structure and the health of the whole economy depends on the financial sector. There seems to be a consensus in CG scholarship that financial firms will comply with CG provisions better than non-financial firms, as regulators place additional expectations on them. Consequently, regulatory oversight is seen as an additional CG mechanism for financial firms (Adams and Mehran, 2003,pp.124).

In both Nigeria and South Africa, this seems to be the case. For example, in addition to King III CG requirements, South African financial firms are mandated by the South African Reserve Bank Act, 1989 (Act No. 90 of 1989), the Financial Intelligence Centre Act, 2001 (Act No. 38 of 2001), the Companies Act, 2008 (Act No. 71 of 2008) and the Postbank Limited Act, 2010 (Act No. 9 of 2010). Similarly, in Nigeria, financial firms are mandated by other regulations in addition to the SEC 2011 CG requirements, including the Central Bank of Nigeria (CBN) 2006 code of CG for banks and the 2009 NAICOM code of good CG for insurance firms. Drawing on these evidences of more scrutiny in the finance sector, compliance for financial firms is compared with those of non-financial firms. The descriptive features are presented below. This will assist in ascertaining whether financial firms comply more with CG regulations than non-financial firms. Figure 7 (Fig.7) below captures the distributional compliance individualities between financial and non-financial firms in Nigeria and South Africa.

Panel B in table 9 above summarises the compliance distributional properties between financial and non-financial firms in both countries. Reading from Panel B, financial

firms in Nigeria comply with 77.14% (i.e. 58 out of 75) of the SEC 2011 CG provisions compared with 67.74% (i.e. 51 out of 75) for non-financial firms, with a significant average variation of 9.39%.
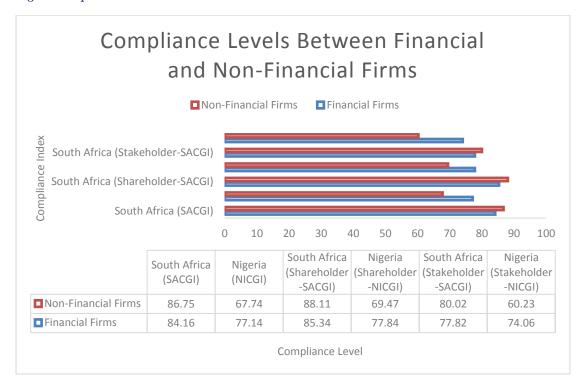
Fig. 7: Compliance Levels between Financial and Non-Financial Firms

	South Africa (SACGI)	Nigeria (NICGI)	South Africa (Shareholder-SACGI)	Nigeria (Shareholder-NICGI)	South Africa (Stakeholder-SACGI)	Nigeria (Stakeholder-NICGI)
Non-Financial Firms	86.75	67.74	88.11	69.47	80.02	60.23
Financial Firms	84.16	77.14	85.34	77.84	77.82	74.06

Contrary to theoretical expectations and the compliance level in Nigeria, non-financial firms in South Africa comply with 86.75% (i.e. 73 out of 84) of the King III CG provisions, which is more than the compliance level for financial firms of 84.16% (i.e. 70 out of 84), with a mean significant difference of 2.584***. Furthermore, the sample t-test for equality of means in both countries between financial and non-financial firms (see Panel B, table 9, columns 10 & 11) rejects the null hypothesis that the means are equal at 1% significance level.

The results for Nigerian financial firms compared to non-financial firms confirm the general consensus in CG scholarship that regulatory oversight is an additional CG mechanism (Yermack, 1996,pp.189, Adams and Mehran, 2003,pp.124, Chen et al., 2008,pp.12, Ntim, 2009,pp.134) which improves CG compliance of financial firms in Nigeria, but the results in South Africa are in contrast to this contention. This suggests that, while additional regulatory oversight of the financial sector may coerce and

reinforce country-level CG regulatory compliance in some countries compared to non-highly regulated industries, in other countries, additional regulatory oversight may not necessarily improve country-level CG compliance of financial firms compared to non-financial firms.

Similar to comparison by firm's size, listing and audit firm size, there is at least thrice as much level of variation in CG compliance between financial and non-financial firms in Nigeria compared to South Africa. For a case in point, the mean deviation in compliance between financial and non-financial firms is at 9.39% for Nigeria compared to 2.58% in South Africa. Additionally, within financial firms, the level of heterogeneity in CG compliance in South Africa is at 10.54% but in Nigeria it is at 14.04%. Likewise, non-financial firms in South Africa have a compliance deviation of 6.51% while in Nigeria it is at 17.25%. Like firm-size comparison, these indicate that, in South Africa, both financial and non-financial firms are improving their CG standards more symmetrically than Nigerian firms. In effect, the average compliance with SEC 2011 CG regulations by financial firms in Nigeria is 77.14%, which is lower than the 84.16% compliance with King III CG provisions in South Africa. Worthy of note is that the level of deviation in country-level CG compliance of financial firms in Nigeria is 14.04% and in South Africa is 10.54%, with a mean difference of 3.5%, which is less than for non-financial firms in Nigeria (17.25%) compared to South Africa (6.51%), with an aggregate difference of 10.74%. This also implies that, in South Africa, there is higher deviation in compliance with King III CG provisions within financial firms as opposed to non-financial firms and vice versa for Nigeria.

What's more, consistent with compliance with country-level CG provisions discussed above, compliance with shareholder and contextual stakeholder CG provisions by financial firms is higher than for non-financial firms in Nigeria, whereas, in South Africa, non-financial firms comply with shareholder and contextual stakeholder CG provisions more than financial firms. Similarly, there is statistically significant average deviation between financial and non-financial firms in country-level stakeholder and shareholder CG requirements across both countries. Nonetheless, comparable to dual listing, audit firm size and firm size, the level of compliance with institutional stakeholder CG practices by financial firms compared to non-financial

firms is about six times as large in Nigeria (13.82***) as it is in South Africa (2.20***). However, analogous with dual listing, audit firm size and firm size, compliance with shareholder- and stakeholder-inclusive CG provisions irrespective of whether financial or non-financial firms is higher in South Africa than in Nigeria.

6.9 Summary of Chapter

In conclusion, the descriptive statistics show that CG codes operational in these countries which are developed to capture shareholders, historical, societal and institutional needs have shaped firm-level behaviour as opined by NIE theory. As such, there are some similarities and differences in firm-level CG compliance practices in both Nigeria and South Africa. Notably, the differences in the level of compliance in the two countries show how firms relate institutionally to the SEC 2011 code in Nigeria and King III respectively. For example, as noted earlier, whereas some firms in Nigeria comply with the maximum requirements, other firms do not comply with up to a quarter of the SEC 2011 provisions, but in South Africa, on average, firms comply with more than 50% of the King III CG provisions.

More so, the level of compliance with country-specific shareholder and stakeholder CG requirements is similar to the level compliance with the overall corporate governance indices in both countries (NICGI and SACGI). This suggests that any financial performance consequence of compliance with country-level or contextual shareholder and stakeholder CG requirements can be expected to be in the same direction as the composite country-level CG provisions (NICGI and SACGI). In other words, if firms with better CG standards (as measured by compliance with King III in South Africa, i.e. SACGI, and SEC 2011 CG code, i.e. NICGI) do generate increase in financial performance of listed firms, then it is expected that compliance with country-specific shareholder and stakeholder CG requirements will generate higher firm returns.

More so, splitting of compliance distributional properties in both countries according to dual listing, audit firm size, firm size and sector indicates that there are considerable differences in compliance in both countries because of these firm-level individualities. Generally, in both countries, dual-listed firms, firms audited by big

four auditors and large firms comply with country-level CG provisions and sub-provisions better than non-dual listed firms, firms not audited big four auditors and small firms. However, with regard to distinction between financial and non-financial firms, the former complies with country-level CG provisions and sub-provisions better in Nigeria, whereas the latter complies with these provisions better in South Africa. In addition, splitting firms with respect to these firm-level individualities shows considerable differences within groups and across groups. These differences justify the use of these firm-level individualities as extraneous/control variables (discussed in 5.5) in this study, as will be seen in the regression results in chapters 8 to 9.

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CHAPTER 7

7.0 DESCRIPTIVE STATISTICS: FIRM-LEVEL INTERNAL CORPORATE GOVERNANCE MECHANISMS & CORRELATION RESULTS

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7.1 Introduction

The previous chapter discussed and compared the descriptive properties in relation to country-specific CG compliance (i.e. compliance index model) in Nigeria and South Africa. This chapter presents (section 7.2) the descriptive statistics for country-level individual corporate governance mechanisms (i.e. independent variables in the equilibrium variable model). In addition, the chapter discusses (in section 7.3) the distributional properties of the control/extraneous variables as well as the performance variables (dependent variables) (discussed in 5.4 and 5.5 respectively).

More so, given that multivariate Ordinary Least Squares (OLS) regression technique is the main model of estimation of the relationship between internal CG variables based on the compliance index model and the equilibrium variable model (as stated in the model specification), the assumptions of multi-collinearity and normality are tested. Multi-collinearity is tested using correlation matrix among variables (section 7.4 and 7.5). As Cameron and Trivedi (2005,pp.23) opine, the choice of model used in research is very critical in the interpretation of result. Correlation was therefore used to verify the OLS assumption of absence of multi-collinearity among variables. To achieve robustness of results, both Pearson parametric and Spearman non-parametric correlation results for internal corporate governance variables based on the compliance index model are reported in table 12 (for Nigeria) and 13 (for South Africa) in section 7.4, while the correlation results for variables in the equilibrium variable model are reported in tables 14 and 15 for Nigeria and South Africa respectively in section 7.5. This is followed by discussion of normality assumption and dealing with outliers in section 7.6. The chapter ends with a summary in section 7.7.

7.2 Descriptive Statistics: Country-/Firm-level Internal Corporate Governance Mechanisms

Pooled firm-/country-level distributional properties for independent/alternative internal CG mechanisms (as measured in the equilibrium variable model) are presented in table 10 below for both countries (for brevity reasons, year-on-year descriptives are not shown in the table).

To begin with, the proportion of NEDs in Nigerian corporate boards ranges from 44.44% to 100%, with a pooled average of 71.32%, whereas in South Africa the minimum proportion of NEDs is at 36% while the maximum is at 100% with an aggregate of 69.66%. This suggests that on average Nigerian boards have more NEDs than South African boards, but both countries have boards which are entirely made up of NEDs. Both countries meet the requirements of respective country CG codes that the majority of the board should be made up of NEDs, even though the minimum number of NEDs in both countries shows that some firms do not meet this requirement. The proportion of NEDs in this study surpasses those reported by earlier studies in South Africa: Ho and Williams (2003) reported 52%, Mangena and Chamisa (2008) 57% and Ntim and Soobaroyen (2013b) 45.28%. Similarly, in Nigeria, the proportion of NEDs exceeds the 54% reported by Uadiale (2010). On the other hand, in Nigeria, the proportion of executive directors is at 28.68%, whereas it is 30.42% in South Africa. Given the earlier studies discussed above for NEDs, the proportion of EDs has declined over the years to achieve board independence as required by the respective country-level CG code. Interestingly, the average proportion of independent NEDs (INEDs) is at 52.92% in South Africa and 9.01% in Nigeria. This suggests that there are more INEDs in South Africa than Nigeria. However, this is not surprising given that King III requires the majority of NEDs to be independent whereas SEC 2011 stipulates at least one. This implies that, because of the difference in board compositional provisions in CG codes at country level, there are considerable firm-level differences in board composition. In fact, the descriptive suggests that Nigerian firms are meeting just the minimum requirement of SEC 2011 code with respect to INEDs, whereas South African firms are exceeding the requirements of King III in relation to director independence. In addition, it is also clear from table 10 that some Nigerian firms do not meet the minimum requirements

of SEC 2011 code with respect to INEDs, with some firms having zero independent NEDs.

Furthermore, CEO/Chairman separation descriptive indicates that 98% (0.98) of Nigerian boards have separate individuals as CEO and chairman, whereas it is 95% (0.95) in South Africa. These aggregates show that firms in both countries have met the requirements of respective country-level CG in relation to board leadership. However Nigerian firms have higher levels of separation of leadership positions than South African firms. Nevertheless, the absence of 100% separation of leadership role suggests that some firms in both countries are not meeting the requirements of the respective country CG codes. The separation of leadership position in South Africa exceeds the 64.2% reported by Mangena and Chamisa (2008), whereas the Nigerian results exceed those of prior research, e.g. 86% Sanda et al. (2005), 86% Kajola (2008), 91% Ehikioya (2009), 87% Uadiale (2010), 56% Ujunwa et al. (2012). Hence, compared to prior studies in both countries, leadership separation has increased over time.

With regard to board size, on average Nigerian boards are composed of approximately ten (9.8) persons whereas South African boards are made up of approximately 11 (10.62) directors. The aggregate board size in Nigeria over the five-year period meets and exceeds the recommendation of SEC 2011 code which stipulates that the board should be made up of at least five directors. Worthy of note is that, in Nigeria, the minimum number of board members over the period is three (3), suggesting that some firms within this period did not meet SEC 2011 code requirements. However, a specific number of board members is not mandated in King III as the latter requires that the number of board members should be reflective of firm-specific needs. Similar to leadership separation, the board size in this study exceeds those reported by prior studies in Nigeria, e.g. Kajola (2008) and Uadiale (2010), who reported nine members, whereas in South Africa, Mangena and Chamisa (2008) reported seven, with ten reported by Ntim (2009), Ntim et al. (2013).

As shown in table 10, 17.52% of corporate boards in Nigeria are composed of female directors (gender diversity) as compared to 12.83% in Nigeria. Though corporate governance codes in both countries require women to be part of the management of

firms, they do not stipulate any definite number or proportion to meet female representation. However, compared with prior studies in both countries, the proportion of female directors has increased, indicating that firms are responding to calls to increase female representation on boards. For example, female representation was reported at 4.6%, 10.74% by Ujunwa et al. (2012,pp.612) and Akpan and Amran (2014,pp.84) in Nigeria respectively. Whereas in South Africa, 5.4% was reported by Terjesen et al. (2016,pp.61) and 16.75% by Ntim (2015,pp.32). This shows some level of growth in female representation, but it is still below the female population composition. As of 2015, 49.5% of the Nigerian population was female (Nigeria National Bureau of Statistics, 2016,pp.2), with 51.7% for South Africa (Statistics South Africa, 2016,pp.1). This suggests that women are underrepresented in corporate boards in both countries. In addition, while some firms in Nigeria and South Africa have a maximum of 42.86% and 57.14% of female directors respectively, some firms still have zero female directors.

Furthermore, on average, corporate boards in Nigeria meet approximately five (5.07) times annually but in South Africa, it is 6 (5.58) times annually. This indicates that, on an aggregate level, firms in both countries meet at least quarterly as required by the respective country CG codes. However, though some firms go beyond the expectation of CG requirements in both countries, with a maximum of 15 and 18 meetings in Nigeria and South Africa respectively, other firms meet twice in both countries, which is less than the requirements of normative guidelines. The frequency of board meetings in this study, however, exceeds those reported by Ntim and Oseit (2011,pp.93) (four meetings) in South Africa.

Similar to gender diversity, ethnic diversity showed wide spreads in both Nigeria and South Africa. As reported in table 10, 84.75% (i.e. 15.25% are white) of Nigerian boards are made up of non-white directors (native Nigerians), whereas, in South Africa, 19.37% of boards are made up of non-white directors. The high level of non-white directors in Nigeria is not surprising, given that racial history in Nigeria is different from that in South Africa. Also, owing to need for consistency in measurement across both countries (as noted in Chapter 5), ethnic diversity was measured as percentage of non-white directors to total board size. Interestingly, despite the continuous encouragement for firms to increase non-white representation

in South African corporate entities with laws such as the 2008 company act, Broad-Based Black Economic Empowerment (B-BBEE) of 2003 and Broad-Based Black Economic Empowerment Amendment Act, 2013 (Act No. 46 of 2013), non-white ethnic groups are still underrepresented on South African boards. South African non-white ethnic groups make up approximately 92% of the population (Statistics South Africa, 2016, p.2.), which suggests that the 8% minority white population represents 80.63% of the South African board directorship. However, the descriptive also shows that non-white directors make up 90.91% of some boards in South Africa whereas other boards have zero non-white representation. Interestingly, owing to the historical differences between Nigeria and South Africa, the minimum non-white representation in Nigeria is 28.57% whereas it is zero (0%) in South Africa.

With respect to board interlocks, on average at least one (0.87) director in Nigeria sits on other boards whereas in South Africa at least two directors occupy directorship positions in another board. This suggests that South African boards are on average more interlinked than Nigerian boards. Similarly, there are boards in both countries with no interlocks but there are others with an average maximum of nine directors (8.63) in South Africa sitting on other boards and six (5.71) in Nigeria. The corporate CG codes in both countries do not limit number of interlocks but caution against high levels of board interlocks which may limit directors effectively in performing board duties. Similarly, with regard to board busyness, it is not surprising that an average director attends at least five (4.58) and eight (8.48) board meetings in Nigeria and South Africa respectively. In addition, some boards have board members attending up to 50 (49.77) and 35 (35.00) board meetings out of the firm. It will be interesting to see (in Chapter 8) whether the busyness hypothesis, which suggests directors holding more directorships outside a firm have less time for board activities owing to their commitment to attend board meetings in other firms which may impact negatively on firm performance is confirmed (Jiraporn et al., 2009,pp.819).

Furthermore, the debt to equity ratio (gearing) shows that 40.38% of Nigerian firms compared to 33.08% of South African firms are financed through debt. This implies that Nigerian firms on average depend more on debt finance than South African firms. Similarly, while there are firms in both countries with no debt finance, there are 100% highly geared firms in both countries. The 33% gearing ratio in South Africa is

generally consistent with the 34.78% reported by Ntim (2015,pp.32) for the period 2003 to 2007. However, the 40.38% gearing in Nigeria exceeds the 29.16% reported by Ehikioya (2009,pp.236).The Nigerian results suggest that firms have increased their debt finance over the years as compared to South Africa, which has had a mild decrease compared to the findings from prior studies.

Director shareholding descriptive indicates an average of 19.55% of shares are held by directors in South Africa compared to 26.75% in Nigeria. This indicates that both executive directors and NEDs of firms own more shares in Nigeria than in South Africa. Remarkably, there is almost equal maximum ownership of shares by directors in Nigeria (97.16%) and South Africa (98%). Compared to prior country-specific research, the reported director share ownership exceeds the 15.35% reported by Ehikioya (2009,pp.236) in Nigeria, but it is similar to the 19.24% reported by Ntim (2012a,pp.20) in South Africa.

Institutional shareholding in Nigeria is on average 52.48% compared with 62.26% in South Africa. This implies South African firms are on average owned by institutional shareholders compared to Nigerian firms. However, the above 50% institutional shareholding is consistent with observations in extant literature that African countries have concentrated ownership structures (Ntim, 2012a, Ntim, 2013d, Ntim et al., 2014a, Ntim et al., 2010, Ntim et al., 2015b, Ogbechie, 2010, Okeahalam, 2004, Rwegasira, 2000, Sanda et al., 2005). Indeed, in both countries, there are firms with a maximum of 99% institutional ownership. However the level of institutional shareholding reported for South Africa is less than the 78.30% reported by Ntim et al. (2013,pp.42) for the period 2002–2011. This may suggest that South African firms are moving towards dispersed ownership.

Finally, distributional properties for audit committee independence indicate that 88.59% of audit committees in Nigeria are made up of independent members compared to 96.93% in South Africa. This implies South African firms have more independent audit committees than Nigerian firms. This can be explained by the fact that King III expressively defines the composition of independent audit committees, whereas, in Nigeria, it is not well defined. It is therefore left to the discretion of firms to choose and interpret as they see fit.

Table 10: Descriptive Statistics: Country-/Firm-Level Internal Corporate Governance Mechanisms

Variable	Nigeria (2011–2015)				South Africa (2010–2014)			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Prop. NED (%)	71.32	12.31	44.44	100.00	69.66	12.11	36.00	100.00
Prop. ED (%)	28.68	12.31	0.00	55.56	30.42	12.10	0.00	63.64
Prop. INED (%)	9.01	10.58	0.00	62.50	52.92	14.32	20.00	100.00
CEO/Chairman Role Separation (Units)	0.98	0.13	0.00	1.00	0.95	0.21	0.00	1.00
Board Size (Units)	9.80	3.03	3.00	19.00	10.62	3.33	4.00	23.00
Gender Diversity (%)	12.83	10.95	0.00	42.86	17.52	12.08	0.00	57.14
Frequency of Board Meetings (Units)	5.07	1.68	2.00	15.00	5.58	1.96	2.00	18.00
Ethnic Diversity (%)	84.75	18.62	28.57	100.00	37.82	19.37	0.00	90.91
Board Interlock (Units)	0.87	1.01	0.00	5.71	1.50	1.20	0.00	8.63
Board Busyness (Units)	4.58	5.37	0.00	35.00	8.48	7.59	0.00	49.77
Gearing (%)	40.38	39.11	0.00	101.23	37.35	33.08	0.00	100.00
Director Shareholding (%)	26.75	27.70	0.00	97.16	19.55	24.68	0.00	98.00
Institutional Shareholding (%)	52.48	22.88	0.00	99.00	62.56	17.44	7.00	99.00
Audit Committee Independence (%)	88.59	18.09	0.00	100.00	96.93	9.31	50.00	100.00

Therefore, it is unsurprising that, whereas the minimum audit committee independence in South Africa over the period is at 50%, in Nigeria it is at 0%. The next section discusses the descriptive statistics for control variables.

7.3 Descriptive Statistics: Country-/Firm-Level Performance & Control Variables

Distributional properties for control and dependent variables are presented in table 11 below for both countries. To begin with, the aggregate mean after winsorisation (discussed in 7.6) for ROCE in Nigeria is 12.83%, with a minimum of -100.61% and a maximum of 102%. In South Africa, average ROCE is 17.69%, with a minimum of -99% and maximum of 99%. This implies that South African firms are on average performing better than Nigerian firms. However, the deviation of 12.31 and 12.11 in Nigeria and South Africa respectively suggests that there is similar wide variation in accounting performance of firms in both countries. Similarly, Q-ratio in Nigeria ranges from a maximum of 1.87 to a minimum of -0.52 with a mean of 1.50, whereas it ranges from 0.00 to 10.00 with a mean of 1.59 in South Africa. This suggests that South African firms are more fairly valued by the market than Nigerian firms. Similar to ROCE, this shows significant variation in market performance between firms in both countries. These variations in performance are similar to those reported in governance studies (e.g. Ehikioya (2009).

For the controls, table 11 shows that on average 18% (0.18) of Nigerian firms sampled are duallisted, whereas 17% of South African firms are cross listed. In addition, firm size according to respective stock market classification shows that the sample is split between 50% large and 50% small firms in both countries, therefore indicating a balance sample representation by firm size. Audit firm size shows that 66% (.66) of Nigerian firms are audited by the big four auditors, whereas it is 60% in South Africa. Similarly, capital expenditure after winsorisation shows that on average Nigerian firms spend 6.24 million Naira on investment in innovation compared to 207 million Rand spent by South African firms. Total asset of firms in South Africa after winsorisation shows an average of 53 billion Rand worth of assets compared to 2.7 billion Naira for Nigerian firms. Similarly, market value after winsorisation shows that, on average, Nigerian firms are valued at 1.15 billion Naira compared to South African firms, valued at 3.8 billion Rand.

Table 11: Descriptive Statistics – Performance & Control Variables

Variable	Nigeria (2011–2015)				South Africa (2010–2014)			
	Mean	SD	Min	Max	Mean	SD	Min	Max
ROCE	12.83	23.25	-100.61	102.00	17.69	25.98	-99.00	99.00
Q-ratio	1.50	1.87	- 0.52	17.06	1.59	0.98	0.00	10.00
Dual Listing	0.18	0.38	0.00	1.00	0.17	0.38	0.00	1.00
Firm Size	0.48	0.50	0.00	1.00	0.50	0.50	0.00	1.00
Audit Firm Size	0.66	0.47	0.00	1.00	0.60	0.49	0.00	1.00
Capital Expenditure	6,242,644.00	18,800,000	0.00	207,000,000	1,550,901	4,103,389	0.00	52,000,000
Total Assets	2,704,966.00	46,900,000	68.48	938,000,000	53,000,000	191,000,000	32,545	1,800,000,000
Market Value	115,901.60	353,086.60	58.72	3,800,000.00	29,456	59,381	38	497,883
Sales Growth	8.99	20.51	- 99.00	99.89	12.41	27.42	-87.00	100.00

Finally, sales growth after winsorisation shows that, on average, South African firms grow their sales revenue by 12.41% over the five-year period, whereas Nigerian firms' sales growth is 8.99%.

7.4 Test of Multi-Collinearity and Bivariate Correlations for Variables in the Compliance Index Model

As noted above, the compliance index model variables are reported in table 12 (for Nigeria) and 13 (for South Africa) below. The bottom left of each table shows Pearson parametric coefficients, while the top right shows Spearman non-parametric correlation coefficients. Triple, double and single asterisks denote Pearson Parametric and Spearman non-parametric correlations significant at 1%, 5% and 10% respectively. Correlation coefficients among the independent variables, dependent and control variables in both models range from -0.105 to 0.983 for Nigeria and -0.359 to 0.834 for South Africa.

The highest correlation between independent variables (Nigerian Corporate Governance Index 'NICGI') and dependent variables (ROCE, Q-ratio) is 0.130*** between NICGI and ROCE, while in South Africa it is -0.065 between South African Corporate Governance Index (SACGI) and the Q-ratio. More so, in Nigeria, compliance with stakeholder provisions (Stakeholder–NICGI) has a positive significant association with both ROCE and the Q-ratio. Similarly, compliance with shareholder provisions (Shareholder–NICGI) has a positive association with both performance measures, but significantly only with ROCE. This suggests, on average, a positive significant relationship between both performance measures and the Nigerian Corporate Governance Index (NICGI) and NICGI sub-indices, whereas, in South Africa, there is a weak insignificant negative relationship between (the South African Corporate Governance Index) SACGI, shareholder provisions (Shareholder–SACGI) and both performance measures. However, stakeholder provisions in South Africa (Stakeholder–SACGI) are negative and significantly related to both performance measures. As expected in both countries, there is a high positive relationship between the CG composite indices (NICGI and SACGI) and their respective sub-indices. This indicates that increased firm compliance with the composite index leads to an increase in the compliance with both sub-indices in both countries.

The highest correlation between independent variables and control variables can be seen between NICGI and market value (0.531***) for Nigeria and SACGI and total asset for South Africa (0.370***). In brief, this relationship suggests that, as market capitalisation/value of listed firms in Nigeria increases, the compliance with the Nigerian CG code increases. Meanwhile, in South Africa, as the value of total asset increases, compliance with King III CG code increases. As expected, the highest correlation between control variables was seen between capital expenditure (CAPEX) and market value (MV), with r=0.834*** in South Africa and r=.880*** in Nigeria. Increase in market capitalisation is associated with increase in capital expenditure and vice versa in both countries. With regard to dependent and control variables, the highest correlation is between ROCE and market value for Nigeria (r=0.525***), while, in South Africa, Q-ratio and market value/capitalisation showed the highest correlation (r=0.407***).

As expected, there is significantly high correlation between the various compliance indices NICGI & SACGI and their respective sub-indices. Apart from this, the correlations among variables are generally low to moderate, with a high not up to 90% (0.90) in both countries, which suggests that multi-collinearity may not be an issue in the compliance index model and therefore model specification can be conducted.

Table 12: Nigerian Correlations Matrix Between NICGI, Performance and Control Variables – 400 Firm Years

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. ROCE		.174**	0.091*	0.062	.147***	0.057	0.083*	.244***	.197***	.091*	-.168***	0.066	.252***
2. Q-ratio	.248***		.170***	.145***	.186***	-0.033	0.035	.285***	.324***	.179***	.098**	.332***	.489***
3. NICGI	.130***	0.07		.975***	.897***	-0.003	.146***	.396***	.496***	.533***	.241***	.504***	.531***
4. Shareholder–NICGI	0.097**	0.039	.983***		.782***	-0.025	.116**	.334***	.430***	.460***	.218***	.438***	.455***
5. Stakeholder–NICGI	.192***	.138***	.883***	.782***		0.035	.169***	.467***	.544***	.589***	.241***	.548***	.589***
6. S-GROWTH	.102**	-0.045	-0.023	-0.036	0.013		0.047	0.044	0.091*	.158***	.149***	.138***	.109**
7. DUA-LIST	.123**	-0.04	.128**	.102**	.175***	0.043		.185***	.264***	.223***	.101**	.267***	.233***
8. AF-SIZE	.237***	.227***	.379***	.316***	.480***	0.043	.185***		.409***	.503***	.248***	.503***	.516***
9. CAPEX	.103**	.199***	.165***	.153***	.167***	0.033	0.079	.193***		.774***	.435***	.621***	.769***
10. TA	0.006	-0.028	0.084*	0.083*	0.072	-0.002	-0.011	0.04	-0.003		.517***	.734***	.815***
11. GEAR	-.105**	0.043	.212***	.184***	.250***	.137***	.105**	.260***	.169***	0.082*		.408***	.336***
12. F-SIZE	.105**	.168***	.453***	.388***	.548***	.114**	.267***	.503***	.293***	0.059	.424***		.750***
13. MV	.143***	.305***	.175***	.152***	.206***	0.048	0.024	.213***	.880***	0.02	.099**	.317***	

***, **, * denote Pearson Parametric and Spearman non-parametric correlations, significant at 1%,5% and 10% respectively. Spearman correlation coefficients are at the top right of the table while Pearson correlation coefficients are at the bottom left of the table. The variables are defined as follows: the Nigerian Corporate Governance Index (NICGI), compliance with shareholder provisions (Shareholder–NICGI), compliance with stakeholder provisions (Stakeholder–NICGI), return on capital employed (*ROCE*), Tobins-q (*Q-ratio*), sales growth (*S-Growth*), dual listing (*DUA-LIST*), size of audit firm (*AF-SIZE*), capital expenditure (*CAPEX*), total asset (*TA*), gearing/capital structure (*GEAR*), firm size (*F-SIZE*).

Table 13: South African Correlations Matrix between SACGI, Performance and Control Variables – 500 Firm Years

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. ROCE		.456***	-0.065	-0.036	-.120***	.137***	-.168***	-.167***	.083*	-.096**	-.089**	0.063	.276***
2. Q-ratio	.303***		-.090**	-0.078*	-0.084*	.105***	-0.048	-.235***	.246***	0.033	-0.032	.130***	.407***
3. SACGI	-0.027	-0.065		.972***	.640***	0.028	.137***	-.113**	.097**	.370***	0.079*	.226***	.094**
4. Shareholder–SACGI	-0.013	-0.054	.984***		.464***	0.021	.142***	-.118***	.091**	.342***	0.069	.226***	.104**
5. Stakeholder–SACGI	-0.075*	-0.086*	.663**	.528**		0.05	0.078*	-.089**	0.062	.309***	.094**	.167***	0.03
6. S-GROWTH	.089**	.112**	0.034	0.029	0.032		-0.043	-0.016	-0.067	0.033	0.02	0.004	0.026
7. DUA-LIST	-.177***	-0.026	.155***	.166***	0.063	-0.04		-.216***	.168***	.366***	0.029	.293***	0.079*
8. AF-SIZE	-.144***	-.232***	-.172***	-.173***	-.103**	0.011	-.216**		-.207***	-.545***	-0.043	-.813***	-.287***
9. CAPEX	0.066	.127***	0.024	0.042	-0.053	-0.05	.109**	-.122***		.214***	-0.014	.137***	.834***
10. TA	-0.042	-0.072*	.165***	.162***	.105**	0.041	.102**	-.207***	0.028		.177***	.761***	.261***
11. GEAR	-.108**	-0.026	0.082*	0.081*	0.031	0.046	0.036	-0.057	-0.024	.208***		0.082*	-0.032
12. F-SIZE	0.043	.100**	.285***	.282***	.183***	-0.02	.293***	-.813***	0.028	.258***	.088**		.217***
13. MV	.154***	.280***	0.016	0.034	-0.072*	-0.030	0.080	-.212***	.750***	.115**	-0.043	0.052	

***, **, * denote Pearson Parametric and Spearman non-parametric correlations, significant at 1%, 5% and 10% respectively. Spearman correlation coefficients are at the top right of the table while Pearson correlation coefficients are at the bottom left of the table. The variables are defined as: South African Corporate Governance Index (SACGI), compliance with shareholder provisions (Shareholder–SACGI), compliance with stakeholder provisions (Stakeholder–SACGI), return on capital employed (ROCE), Tobin's-q (Q-ratio), sales growth (S-Growth), dual listing (DUA-LIST), size of audit firm (AF-SIZE), capital expenditure (CAPEX), total asset (TA), gearing/capital structure (GEAR), firm size (F-SIZE).

7.5 Correlations Between Variables in Equilibrium Variable Model

Correlation results of alternative internal corporate governance variables, including board size (*B-SZ*), non-executive directors (*NEDs*), independent non-executive directors (*INEDs*), executive directors (*EDs*), gender diversity (*GDIV*), ethnic diversity (*EDIV*), CEO/Chairman separation (*DUAL*), gearing/capital structure (*GEAR*), board meetings (*FRE-M*), board interlocks (*ILOCK*), institutional shareholding (*INST-SH*), director shareholding (*D-SH*), audit committee independence (*IAC*) and board busyness (*Bness*), as well as dependent and control variables, are reported in table 14 for Nigeria and 15 for South Africa. Correlation among dependent and independent variables in this model ranges from -0.351 to 0.382 in Nigeria, with the highest correlation between Q-ratio and institutional shareholding (r=0.382***). In South Africa, correlation between independent and dependent variables ranges from -0.354 to 0.131, with the highest correlation between CEO duality and Q-ratio (r=0.131***). This shows that, in Nigeria, performance of firms as measured by Q-ratio increases with an increase in institutional shareholding, while, in South Africa, the results suggest that performance increases with the separation of CEO and chairperson positions.

The correlation between independent variables and control variables ranges from -0.402 to 0.728 in South Africa, with the highest correlation between board size and total asset (r=0.728**), while, in Nigeria, it ranges between -0.295 and 0.489, with the highest correlation between board size and firm size. This suggests that, in South Africa, increase in total assets is associated with increase in board size. However, in Nigeria, large firms are associated with increase in board size. Correlation between independent variables in both Nigeria and South Africa showed serious negative multi-collinearity between the proportion of NEDs and executive directors (EDs), with values above 0.95. This is to be expected, as the total of both the proportion of NEDs and proportion of EDs adds up to one (100%). To prevent this from affecting the OLS results, three regressions are estimated using the process of elimination within the equilibrium variable model. The first regression was conducted with both NEDs and EDs in the model to confirm the tolerance results and the VIF scores (see detailed discussion in Chapter 8). The subsequent regression was conducted by

eliminating executive director variable from the regression and the last regression eliminates NEDs in the estimation.

7.6 Dealing with Outliers/Extreme Values of Control and Performance Variables (OLS Normality Assumption)

The initial descriptive showed there existed extreme values in both performance and control values in the sample data, which violates the OLS assumption of normality and may impact on the regression results. The descriptive statistics did not show large anomalies with the independent variables in the data set, especially when looking at the aggregate level. However, there are variables which showed some level of skewness, especially capital expenditure, sales growth and market value. Thus, the initial descriptive (not included for brevity reasons) for control and dependent variables showed that there are some outlier concerns. For example, the average kurtosis for ROCE and Q-ratio in all firm years was 17.48 and 9.096 respectively. Similarly, sales growth values of -240% and above were recorded, which does not make any theoretical or economic sense. Thus following Klapper and Love (2004,pp.704) winsorisation was conducted on these variables to remove the top and bottom outliers at 5% and 95% levels. Specifically, in South Africa, both control and performance variables with outliers were ranked in a descending order and the bottom and top 25th values for these variables were replaced with the 26th and 475th values respectively. Similarly, for Nigeria, the top and bottom 20th values were replaced with the 21st and 380th values respectively. Hence the values reported in section 7.3 for control and performance descriptive are values after winsorisation. Excluding outliers or extreme values which may affect OLS results is a practice that is common in CG scholarship (see e.g. Durnev and Kim, 2005,pp.1473, Black et al., 2006,pp.379, Fan et al., 2007pp.336, Ntim, 2009,pp.235, Black et al., 2012,pp.15, Gupta et al., 2013,pp.11, Ararat et al., 2017,pp.15).

7.7 Summary of Chapter

This chapter focused on describing the data for the alternative internal CG structures in South Africa and Nigeria in addition to testing OLS assumptions of normality and multi-collinearity. The chapter meets three main objectives. First, the chapter provides a detailed comparative description of the alternative internal CG mechanisms

(independent variables in the equilibrium variable model), performance (dependent variables) and control variables. The second objective was to test OLS assumption of multi-collinearity. The test of multi-collinearity shows that generally there are no serious violations of OLS assumptions in the compliance index model and as such it will be appropriate to carry out OLS regressions. However, multi-collinearity could be present in the equilibrium variable model. Procedures to eliminate this multi-collinearity are presented briefly but will be discussed in more detail in the next chapter. Finally, the chapter clearly explains how outliers and extreme values in the control and performance variables were treated.

The next chapter (8) reports the main results of OLS estimation. Specifically, it discusses OLS results based on the compliance index model and the equilibrium variable model.

Table 14: Nigerian Correlations Matrix between Alternative Internal Corporate Governance Variables, Performance and Control Variables – 400 Firm Years

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. ROCE		.174***	0.000	-0.04	0.09*	0.04	.109**	-.172***	-.129***	-.168***	-0.03	0.08*	.147***	.103**	-.107**	0.04	0.08*	0.07	.197***	0.09*	.252***	0.06	.244***
2. Q-ratio	.248***		0.09*	-0.03	0.03	0.03	0.08*	-.351***	-0.04	.098**	0.03	0.07	.382***	0.10**	-0.07	0.08*	0.04	.332***	.324***	.179***	.489***	-0.03	.285***
3. BSZ	-0.04	-.113***		-.160***	.306***	.160***	.117**	-0.10**	.162***	.304***	.333***	.181***	-.128**	-.137***	.158***	.270***	.128***	.449***	.546***	.631***	.475***	.103**	.183***
4. NED	-0.05	-0.03	-.220***		-0.03	-1.00***	-.227***	-.193***	.201***	-.213***	-0.06	0.09*	.120***	.125***	.295***	0.07	-.103**	-.152***	-0.09*	-.157***	-.124**	-0.08*	-0.09*
5. INED	0.01	-0.07	.219***	-0.04		0.03	.272***	0.00	0.07	0.04	.117**	.168***	-0.09	-0.04	.135***	.181***	-0.04	.285***	.310***	.392***	.336***	0.00	.201***
6. ED	0.05	0.03	.220***	-1.000***	0.04		.227***	.193***	-.201***	.213***	0.06	-0.09*	-.120***	-.125***	-.295***	-0.07	.103**	.152***	0.09*	.157***	.1248*	0.08*	0.09*
7. GDIV	.151***	0.05	.145***	-.211**	.236***	.211***		.160***	0.000	.144***	.141***	.180***	-.107**	-.106**	-0.01	.205***	.169***	.303***	.242***	.281***	.296***	0.09*	.180***
8. EDIV	-.156***	-.309***	-0.03	-.204**	-0.01	.204***	.136***		.170***	-0.02	-0.01	-.195***	-.509***	-.305***	.133***	-.191***	-.121***	-.265***	-.291***	-.197***	-.337***	.109***	-.258***
9. DUAL	-.135***	0.01	.136***	.221**	0.07	-.221***	0.01	.182***		0.07	.109**	0.04	-0.06	-.162***	.199***	0.05	-.359***	-0.06	-0.04	0	-0.05	0.04	-0.108
10. GEAR	-.105***	0.04	.374***	-.212**	0.06	.212***	.159***	0.03	.105**		.133***	.152***	-0.05	-0.07	-.117**	.176***	.101**	.408***	.435***	.517***	.336***	.149***	.248***
11. FRE-ME	-0.03	-0.06	.386***	-0.05	.10**	0.05	.132***	0.03	0.08*	.129***		.218***	0.00	-.140***	.116***	.417***	.102**	.244***	.285**	.348***	.296**	.107**	.209***
12. ILOCK	0.03	0.05	0.09*	.147**	.099**	-.147***	.206***	-.276***	0.04	.099**	0.09*		.126***	-0.01	.129***	.959***	.167***	.190***	.320***	.263***	.261***	-0.01	0.08*
13. INST-SH	0.09*	.349***	-.173***	.140**	-0.09*	-.140***	-.140***	-.463***	-0.06	-0.07	-0.08*	.153***		.409***	-.202***	0.08*	0.02	0.04	0.01	0.01	.149***	-.123***	.139***
14. D-SH	0.05	.161***	-.183***	.110*	-0.04	-.110***	-.104**	-.333***	-.156***	-0.06	-.142***	0.08*	.476***		-.230***	-0.07	0.05	-.118**	-.112**	-0.08	-0.07	-.161***	.148***
15. IAC	-0.05	-.214***	0.09*	.301**	.175***	-.301***	0.09*	0.06	.162***	-.185***	.134***	.156**	-.232***	-.217***		.140***	-0.08*	-0.07	0.06	-0.06	-0.05	0.02	-.141****
16. Bness	0.01	0.04	.171***	.124*	.114***	-.124***	.258***	-.246***	0.06	.139***	.329***	.938***	.120***	0.05	.150***		.180***	.244***	.359***	.330***	.313***	0.02	.121***
17. DUA-LIST	.123***	-0.04	.130***	-.108*	0.01	.108**	.159***	-.125***	-.359***	.105**	0.09*	0.09*	0.01	0.04	-0.03	.136***		.267***	.264***	.223***	.233***	0.05	.185***
18. F-SIZE	.105***	.168***	.489***	-.150**	.238***	.150***	.292***	-.219***	-0.06	.424***	.235***	.154***	0.04	-0.07	-0.04	.220***	.267***		.621***	.734***	.750***	.138***	.503***
19. CAPEX	.103***	.199***	.210***	0.09	.104**	-0.09*	-0.06	-.101**	0.02	.169***	.146***	0.03	.184***	.107**	0.07	0.06	0.08*	.293***		.774***	.769***	0.09*	.409***
20. TA	0.01	-0.03	0.01	0.07	0.06	-0.07	.128**	-0.01	0.01	0.08*	0.09*	.167***	0.02	0.08*	0.03	.273***	-0.01	0.06	0.00		.815***	.158***	.503***
21. MV	.143***	.305***	.195***	0.00	.100**	0.00	0.00	-.117***	0.00	.099**	.107**	0.01	.175***	.110**	0.04	0.03	0.02	.317***	.880***	0.02		.109***	.516***
22. S-GROWTH	.102***	-0.05	0.08*	-0.04	-0.04	0.04	.106**	0.07	0.02	.137***	0.06	-0.04	-0.06	-0.08*	-0.03	-0.01	0.04	.114**	0.03	0.00	0.05		0.04
23. AF-SIZE	.237***	.227***	.206***	-0.09	.180***	0.09**	.178****	-.196***	-0.10**	.260***	.163***	0.04	.146***	.213***	-.108**	0.10**	.185***	.503***	.193***	0.04	.213**	0.04	

***, **, * denote Pearson Parametric and Spearman non-parametric correlations significant at 1%, 5% and 10% respectively. Spearman correlation coefficients are at the top right of the table, while Pearson correlation coefficients are at the bottom left of the table. The variables are defined as follows: return on capital employed (*ROCE*), Tobins-q (*Q-ratio*), board size (*B-SZ*), non-executive directors (*NED*), independent non-executive directors (*INED*), executive directors (*ED*), gender diversity (*GDIV*), ethnic diversity (*EDIV*), CEO/Chairman Separation (*DUAL*), gearing/capital structure (*GEAR*), board meetings (*FRE-M*), board interlocks (*ILOCK*), institutional shareholding (*INST-SH*), strategic/director shareholding (*D-SHD*), audit committee independence (IAC), board busyness (*Bness*), dual listing (*DUA-LIST*), firm size (*F-SIZE*), capital expenditure (*CAPEX*), total asset (*TA*), market value (*MV*), sales growth (*S-GROWTH*) and size of audit firm (*AF-SIZE*).

Table 15: South African Correlations Matrix between Alternative Internal Corporate Governance Variables, Performance and Control Variables – 500 Firm Years

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1.	ROCE	***	.456***	-.049	-.066	-.047	.066	.131***	.003	.020	-.089**	-.081*	-.072*	-.063	-.105**	-.060	-.068	-.168***	.063	.084*	-.096**	.276***	.137***	-.146***
2.	Q-ratio	.303***		.032	-.053	.027	.053	.028	.027	.133***	-.032	.117***	-.001	.066	-.086*	.002	-.036	-.048	.130***	.246***	.033	.407***	.105**	-136***
3.	BSZ	-.087*	-.046		.333***	.038	-.334***	.105**	.046	.198***	.156***	.264***	.028	.018	-.036	-.002	.130***	.170***	.611***	.166***	.728***	.193***	-.010	.325***
4.	NED	-.078*	-.049	.270***		.346***	-1.000***	.172***	.180***	.187***	0.05	.371***	.283***	0.05	.168***	0.01	.392***	.188***	.244***	0.042	.402***	0.018	.102**	.267***
5.	INED	-.046	.016	.024	.376***		-.346***	.251***	.170***	.155***	-.013	.141***	.219***	-.053	-.338***	.302***	.245***	.183***	.179***	.126***	.210***	.129***	-.032	.167***
6.	ED	.077*	.047	.270***	1.000***	-.375***		.172***	.179***	.187***	-.049	.371***	.282***	-.050	-.168***	-.011	-.392***	.188***	-.244***	-.042	-.402***	-.018	-.103**	-.267***
7.	GDIV	.105**	-.007	.073*	.179***	.234***	-.179***		.504***	-.022	.117***	.040	.110**	-.074*	-.015	.049	.111**	.004	.181***	-.046	.105**	.034	-.067	.093**
8.	EDIV	.015	.044	-.017	.164***	.144***	-.163***	.528***		.079*	-.018	.190***	.110**	-.140***	-.024	-.019	.142***	-.008	.074*	.035	.057	.035	-.001	-.112**
9.	DUAL	-.018	.112**	.175***	.205***	.161***	-.203***	-.012	-.104**		.129***	.090**	-.019	.151***	.096**	-.045	.044	.099**	.200***	.080*	.252***	.038	.090**	.134***
10.	GEAR	-.108**	-.026	.138***	.029	-.009	-.027	.143***	-.038	.122***		.168***	.012	.098**	-.007	-.004	.062	.028	.082*	-.014	.177***	-.032	.021	.053
11.	FRE-ME	-.110**	-.075*	.161***	.355***	.141***	-.354***	.043	.159***	.108**	.131***		.192***	-.005	-.010	-.003	.501***	.234***	.222***	.130***	.395***	.033	.010	.158***
12.	ILOCK	-.028	.020	-.027	.113**	.147***	-.113**	.161***	.027	.130***	-.043	.127***		.144***	.003	.227***	.880***	.384***	.131***	.135***	.184***	.111***	-.019	.063
13.	INST-SH	-.094**	.079*	.044	.055	-.009	-.055	-.090**	-.093**	.212**	.107**	.018	.159***		.193***	.087*	.124***	.183***	-.003	.072*	-.003	0024	-.022	-.102**
14.	D-SH	-.128***	-.035	-.029	.220***	-.246***	-.219***	-.006	0.011	.097**	.007	.054	.103**	.302***		-.113***	.010	-.092**	-.037	-.164***	-.047	.194***	.032	-.140***
15.	IAC	-.010	.005	.032	.054	.337***	-.053	.041	-.005	.047	-.011	-.001	.205***	.057	-.041		.187***	.139***	.071	.039	-.006	.041	-.092**	.135***
16.	Bness	-.098**	004	.044	.267***	.202***	-.266***	.154***	.101**	-.065	.015	.552***	.838***	.173***	.139***	.166***		.384***	.200***	.162***	.300***	.110**	-.016	.116***
17.	DUA-LIST	-.177***	-.026	.145***	.182***	.200***	-.183***	-.017	-.029	.099**	.036	.212***	.261***	.169***	.000	.135***	.363***		.293***	.168***	.3668**	.079*	-.043	.144***
18.	F-SIZE	.043	.100**	.574***	.241***	.191***	-.242***	.145***	.062	.200***	.088**	.188***	.029	.005	-.029	.112**	.146***	.293***		.137***	.761***	.217***	.004	.292***
19.	CAPEX	.066	.127***	-.009	.085*	.089**	-.087*	.057	.156***	-.039	-.024	.118***	.132***	.080*	-.061	.057	.174***	.109**	.028		.214***	.834***	-.067	-.115**
20.	TA	-0.04	-0.07	.394***	.255***	.140***	-.254***	.010	.026	.058	.208***	.128***	.088**	-.068	-.024	.000	.127***	.102**	.258***	.029		.261**	.034	.341***
21.	MV	.154***	.280***	.073*	.048	.070	-.049	.062	.125***	-.074*	-.043	.040	.158***	.052	-.096**	.013	.157***	.080	.052	.750***	.115***		.026	-.108***
22.	S-GROWTH	.089**	.112**	-.009	.110**	-.042	-.110**	-.025	.003	.057	.046	.005	-.055	-.029	.025	-.120***	-.058	-.037	-.020	-.049	.041	-.030		-.007
23.	AF-SIZE	-.147***	-.182***	.304***	.284***	.166***	-.283***	.101**	-.127***	.134***	.046	.143***	-.009	-.109**	-.102**	.166***	.043	.144***	.292***	-.138***	.093**	-.236***	-.007	

***, **, * denote Pearson Parametric and Spearman non-parametric correlations significant at 1%, 5% and 10% respectively. Spearman correlation coefficients are at the top right of the table while Pearson correlation coefficients are at the bottom left of the table. The variables are defined as follows: return on capital employed (*ROCE*), Tobins-q (*Q-ratio*), board size (*B-SZ*), non-executive directors (*NED*), independent non-executive directors (*INED*), executive directors (*ED*), gender diversity (*GDIV*), ethnic diversity (*EDIV*), CEO/Chairman Separation (*DUAL*), gearing/capital structure (*GEAR*), board meetings (*FRE-M*), board interlocks (*ILOCK*), institutional shareholding (*INST-SH*), strategic/director shareholding (*D-SHD*), audit committee independence (IAC), board busyness (*Bness*), dual listing (*DUA-LIST*), firm size (*F-SIZE*), capital expenditure (*CAPEX*), total asset (*TA*), market value (*MV*), sales growth (*S-GROWTH*) and size of audit firm (*AF-SIZE*).

CHAPTER 8

8.0 EMPIRICAL RESULTS: OLS REGRESSION

8.1 Introduction

The previous chapter has demonstrated that both the compliance index model and equilibrium variable model are statistically appropriate to be estimated using OLS regression. Drawing from the preliminary chapters, this chapter reports the main result of the thesis based on OLS estimation of the compliance index model and the equilibrium variable model using ROCE as the accounting measure of profitability and Q-ratio as a market measure of profitability. Each of the models has two sub-models. In the first sub-model (Model I), ROCE and Q-ratio are estimated using control variables only, while in the second model (Model II), ROCE and Q-ratio are evaluated with the independent variables in addition to the control variables. Both ROCE and Q-ratio results are reported in the same table. Triple, double and single asterisks denote statistical significance at 1%, 5% and 10% respectively.

The research questions and hypotheses examined in each of the chapter sections are stated at the beginning of each section. Specifically, the chapter presents a set of eight results in eight tables. The first set of results discussed in 8.2.1 and 8.22 as reported in tables 16 and 17 present results for the compliance index model for Nigeria (NICGI) and South Africa (SACGI) respectively and provide empirical evidence to test hypothesis 10a and sub-research question 1 stated as '*How and in what ways does firm-level compliance with exogenously developed corporate governance provisions impact on firm financial performance in Nigeria and South Africa?*' Subsections 8.3.1 and 8.3.2 discuss the results of the alternative internal CG mechanisms and firm performance nexus as measured by the equilibrium variable model (hypotheses 1 to 9 and 11) and shown in tables 18 and 19. These results answer sub-research question 2 stated as '*Do endogenously generated alternative firm-level internal corporate governance mechanisms affect firm financial performance in Nigeria and South Africa?*' The next two sets of results discussed in 8.4.1 and 8.4.2 and reported in tables 20 and 21 provide the OLS estimation of the sub-CG compliance indices in Nigeria (Shareholder–NICGI and Stakeholder–NICGI) and South Africa (Shareholder–SACGI and Stakeholder–SACGI) respectively. These results provide a test of hypotheses 10b and 10c and answer sub-research question 1. Subsections 8.5.1 and 8.5.2 report a comparison of results of the compliance

index model and the equilibrium variable model (tables 22 and 23) in Nigeria and South Africa respectively. These comparisons provide evidence for sub-research question three (3) stated as '*Are firms' choices of alternative internal CG structures as measured by the equilibrium variable model associated with better firm performance than firm-level compliance with country-level CG provisions as measured by the compliance index model?*' The results discussed in the various sections and sub-research questions provide evidence to answer the main research question stated as 'Why, and in what ways, do the choices of internal corporate governance mechanisms and compliance with corporate governance provisions affect firm financial performance of listed firms in Nigeria and South Africa?' Specifically, this is summarised comparatively in section 8.6 and on table 24. This is followed by a summary of the chapter in 8.7.

8.2 Results Based on the Compliance Index Model

Sub-research Question 1: How and in what ways does firm-level compliance with exogenously developed corporate governance provisions impact on firm financial performance in Nigeria and South Africa?

Hypothesis: 10a

8.2.1 Nigerian Empirical Results – Compliance Index Model

Table 16 contains OLS results based on accounting measure (ROCE) and market measure (Q-ratio) for Nigeria only. The equation for the compliance index model is stated as:

$$P = \delta + \beta_1 NICGI_{it} + \beta_2 CONTROLS_{it} + U_{it} \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

As noted earlier, in the first sub-model (Model I), the control variables are regressed against ROCE and Q-ratio. Columns 3 and 4 of table 16 provide the results based on the controls, whereas columns 5 to 14 show multi-variate regression of the Nigerian Corporate Governance index (NICGI) and the control variables for the pooled sample and for each of the five firm-years respectively.

The F-value of 5.290(0.000) *** for ROCE and 9.156(0.000) *** for Q-ratio indicate that Model I is statistically significant at 1% with adjusted R^2 of 0.155 and 0.258 respectively. This therefore suggests that the null hypothesis that the regression coefficient of the control

variables is zero is rejected. Inferring that, the control variables explain 15.5% of the variations in the firms' accounting returns (ROCE) and 25.8% of variations in the firms' market return (Q-ratio). As a result, the model does not suffer from omitted variable bias and therefore adding the quality of internal corporate governance structures in Nigeria as measured by the NICGI will generate results that are not spurious.

In Model II, the quality of internal corporate governance structures (NICGI) was added to the equation. The F-value for both ROCE and Q ratio remained significant at 1% ($p \leq 0.001$). The adjusted R^2 for both ROCE and Q-ratio are 0.171 and 0.264 respectively. This shows that there is a positive improvement in the degree of variation by 1.6% with the accounting measure (ROCE) and by 0.6% with the market measure (Q-ratio). This indicates that the quality of internal corporate governance structures (NICGI) and control variables jointly explain 17.1% of the variations in the accounting returns and 26.4% of the market returns for listed firms in Nigeria between 2011 and 2015. The adjusted R^2 ranged from 6.5% to 26.4% between 2011 to 2015 with regard to accounting returns, with highest adjusted R^2 in 2013, whereas, with regard to market return, the adjusted R^2 ranged from 30.3% to 34.8% with the highest adjusted R^2 in 2012. Across the five firm years, the model explains a pooled average of 17.1% variation in the accounting return and 26.4% for market return for listed firms in Nigeria.

For the compliance index model, the interest is whether the quality of internal corporate governance structures in Nigeria as measured by NICGI has any meaningful impact on the market and accounting returns of listed firms in Nigeria. From Model II in table 16, the results indicate that NICGI is positively related to accounting return (ROCE) with a coefficient of 0.241(.004) *** which is statistically significant ($p \leq 0.001$) and positively related to market returns (Q-ratio), which are statistically significant at 5% ($p \leq 0.05$). Regarding the five firm years, NICGI showed a positive relationship across all firm years but the results in relation to ROCE are significant only in 2011 at 1% ($p \leq 0.001$) and 2012 at 10% ($p \leq 0.10$), whereas NICGI is significantly associated with Q-ratio only in 2013 at 5% ($p \leq 0.05$). These differences between cross-sectional (yearly) and longitudinal results (five firm year) suggest that, over time, the impact of NICGI is stronger than within individual years. Specifically, the marginal increase in firm performance because of changes in NICGI is not significant enough to cause cross-sectional changes in individual firm year. But on aggregate level, marginal increases/decrease in compliance and firm financial performance

year-on-year compounds to significant association between NICGI and firm financial performance in the panel estimation. As such the longitudinal nature of both NICGI and firm performance generates more accurate predictions for individual effects of NICGI on performance by pooling the data rather than generating predictions of individual cross-sectional outcomes. The aggregate impact of NICGI on firm performance is in line with the correlation results, which showed that there was a positive relationship between quality of internal corporate governance structures in Nigeria as measured by the NICGI and firm financial returns. The significant positive relationship between NICGI and ROCE and Q-ratio therefore supports hypothesis 10a, which states that there is a statistically significant positive relationship between compliance with the Nigerian Corporate Governance Index (NICGI) and firm financial performance as measured by the ROCE and Q-ratio. This therefore indicates that firms that are compliant with the corporate governance code implemented by the SEC in 2011 perform better than firms that do not comply. These results are consistent with the findings of Klapper and Love (2004), who also reported a positive relationship between CG compliance and firm performance. The results are also consistent with other studies which have found a positive relationship in Africa, e.g. Ghana (Owusu and Weir, 2012) and Kenya (Lishenga and Mbaka 2015), South Africa (Ntim, 2013c).

With regard to the control variables, as expected, sales growth is positively and significantly related to ROCE at 1% ($p \leq 0.001$) in both Model I and Model II but not significantly related to Q-ratio in both Model I and Model II. Across the five firm years, sales growth significantly relates to ROCE in 2012 and 2013 at 1% ($p \leq .001$), whereas sales growth is only statistically related to Q-ratio positively in 2014 at 1% ($p \leq 0.01$).

Dual listing positively affects ROCE but negatively impacts Q-ratio insignificantly. The negative relationship with Q-ratio may suggest rejecting the proposition that dual-listed firms are exposed to more financial resources and perform better than non-dual-listed firms. However, the positive relationship with accounting returns is consistent with the results of Charitou and Louca (2009), who reported that dual-listed firms are associated with positive accounting returns. On the contrary, audit firm size positively and significantly affects ROCE and Q-ratio at 1% ($p \leq 0.001$). Firm size is insignificantly and positively associated with ROCE in Model I but negatively in Model II. Nevertheless, firm size significantly affects Q-ratio in both models I and II. This is consistent with the results of Klapper and Love (2004), who found similar positive results.

As expected, capital structure (gearing) is positively related to Q-ratio insignificantly but negatively related to ROCE significantly at 1% (p≤0.001). This indicates that highly geared firms perform better in relation to market returns but worse in relation to accounting returns. Like gearing, the results indicate that total asset has a positive insignificant relationship with ROCE but a significantly negative relationship with Q-ratio at 1% (p≤0.01). It is also significant and negatively related to Q-ratio in 2013, 2014 and 2015 at 5% (p≤0.05). However, market value is significantly and positively related to Q-ratio at 1% but insignificantly related to ROCE. Capital Expenditure (CAPEX) is insignificantly negatively related to ROCE but significantly negatively related to Q-ratio at 5% (p≤0.05).

The next section, 8.2.2, discusses the results of the compliance index model in South Africa.

8.2.2 South African Empirical Results – Compliance Index Model

Like Nigeria, multi-variate OLS regression results on the compliance index model based on accounting measure (ROCE) and market measure (Q-ratio) for South Africa are reported in table 17 below. The equation for the compliance index model for South Africa is stated as:

$$P_{it} = \delta + \beta 1 SACGI_{it} + \beta 2 CONTROLS_{it} + U_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots(4)$$

As noted earlier in 8.2.1, in the first sub-model (Model I), the control variables were regressed against ROCE and Q-ratio. Columns 3 and 4 of table 17 show the result based on the controls, whereas columns 5 to 14 show multi-variate regression of the South African Corporate Governance index (SACGI) and the control variables for the pooled sample (500 firm years) and for each of the five firm years respectively.

Following from table 17 below, the adjusted R^2 for Model I with ROCE and Q-ratio against control variables are 0.189 and 0.212, with F-values of 7.84(0.000) *** and 8.90(0.000) *** respectively and significant at 1% (p≤0.001). In Model II, with addition of the South African Corporate Governance index (SACGI) to the equation, the adjusted R^2 for ROCE and Q-ratio is 0.194 and 0.217 with F-values of 7.67(0.000) *** and 8.70(0.000) *** respectively and significant at 1% (p≤ 0.001).

Table 16: Nigerian OLS Regression Results for the Compliance Index Model Based on Accounting Performance Measure (ROCE) and Market Performance Variable (Q-ratio)

	Exp	All firm years (Model I)		All firm years (Model II)		2011		2012		2013		2014		2015	
	Sign	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio
R-Square (R^2)		.191	.290	.208	.294	.331	.455	.341	.463	.394	.426	.231	.427	.349	.305
Adjusted R^2		.155	.258	.171	.264	.187	.337	.199	.348	.264	.303	.065	.303	.208	.156
F-value		5.29(.000) ***	9.156(.000)***	5.568(.000) ***	8.947(.000) ***	2.299(.012) ***	3.87(.000)****	2.41(.009)***	4.00(.000) ***	3.023(.001) ***	3.453(.000) ***	1.393(.182)	3.46(.000) ***	2.485(.000)***	2.04(.028)**
Standard Error		21.348	1.530	21.143	1.524	25.390	0.950	22.273	0.995	19.997	1.580	20.398	1.508	15.478	2.196
Durbin–Watson		.970	1.066	.970	1.074	1.926	2.113	2.114	2.081	1.759	2.212	2.134	2.049	2.224	1.819
No of observations		400	400	400	400	80	80	80	80	80	80	100	80	80	80
Constant		4.605(.226)	2.778(.000) ***	-9.070(.133)	2.334(.000) ***	-32.08(.024)**	1.839(.023)**	-18.20(.172)	2.66(.002) ***	-19.517(.123)	2.313(0.088) *	0.741(.958)	3.683(.010) ***	1.585(.898)	2.329(.257)
NICGI	+	-	-	.241(.004) ***	0.013(.043)**	.654(.003)***	.004(.608)	.325(.092)*	.008(.387)	.260(.152)	.037(.024) **	.0350(.858)	.012(.464)	.083(.600)	.182(.507)
Sales Growth	+	.132(.017) ***	0.000(.939)	.139(.011) ***	0.001(.803)	-0.002(.987)	.000(.975)	.364(.010)***	-0.008(.178)	.363(.002)***	.006(.451)	.123(.298)	.014(.017)***	.000(.995)	-.027(.250)
Dual Listing	+	3.037(.560)	-0.516(.167)	1.725(.739)	-0.581(.119)	1.568(.917)	.060(.908)	-1.012(.936)	.490(.383)	17.832(.137)	-0.957(0.291)	-4.850(.175)	-.411(.125)	-.145(.986)	-.574(.637)
Audit Firm Size	+	10.49(.000) ***	0.707(.000) ***	8.500(.002) ***	0.631(.002) ***	14.202(.052)**	-.040(.884)	-1.7650(.788)	.345(.240)	14.018(.023)**	.296(.054) **	10.153(.099)*	.835(.066)*	8.936(.055)**	1.412(.035)**
Firm Size	+	1.698(.565)	0.675(.005)***	-0.571(.850)	0.639(.008)***	-7.82(.334)	.360(.309)	10.461(.157)	.049(.891)	-6.674(.365)	.568(.361)	3.545(.595)	1.143(.043)**	-5.141(.302)	.454(.358)
Capital Structure (Gearing)	+/-	-0.121(.000) ***	0.003(.201)	-0.12(.000) ***	.004(.128)	-0.101(.241)	.002(.511)	-0.135(.090)*	.008(.031)**	-0.084(.290)	.007(.317)	-0.211(.008)***	.004(.413)	-.078(.124)	.001(.825)
Total Asset	+/-	.000(.635)	-.000(.003)***	.000(.673)	-.000(.003)***	-.000(.399)	-.000(.544)	-.000(.309)	.000(.948)	-.000(.262)	-.000(.030)**	2.725(.937)	-.000(.027)**	.000(.711)	-.000(.047)**
Market Value	+	.000(.129)	.000(.000) ***	.000(.119)	0.000(.000) ***	.000(.816)	.000(.000) ***	.000(.124)	.000(.000)***	.000(.462)	.000(.001)***	8.876(.490)	.000(.001) ***	.000(.045)**	.000(.062)*
Capital Expenditure (CAPEX)	+/-	-.000(.594)	-0.000(.117)	-.000(.517)	-.000(.047)**	.000(.573)	-.000(.295)	-.000(.313)	-.000(.104) *	-0.000(.833)	-.000(.230)	-1.283(.634)	-.000(.559)	-.000(.117)	-.000(.753)
Agriculture/Consumer Goods		12.278(.001) ***	0.782(.006)***	12.460(.0001)***	0.905(.002) ***	10.851(.282)	.566(.157)	13.353(.131)	-.311(.482)	16.292(.041)**	1.586(.028)**	11.202(.161)	1.435(.031)**	4.618(.449)	1.538(.116)
Finance Industry		2.487(.452)	-0.536(.057) **	0.770(.817)	-0.50(.074)*	-9.355(.317)	-.620(.131)	1.390(.869)	-1.06(.016)**	7.827(.300)	-.203 (.766)	6.625(0.378)	-.244(.704)	.121(.983)	.151(.868)
ICT/Real-estate		9.749(.044) **	0.429(.234)	10.583(.027)**	0.569(.120)	12.038(.364)	.180(.729)	23.181(.049) **	-.245(.673)	19.920(.055)**	.410(.636)	13.614(.195)	.194(.814)	-21.18(.008)***	2.915(.017)***
Industrial/Conglomerate		0.829(.875)	-0.576(143)	1.741(.740)	-0.407(.309)	-13.899(.341)	-.374(.500)	6.466(.611)	-1.541(.013) *	0.995(.931)	-.223(.815)	3.491(.756)	-.339(.702)	-2.369(.782)	.250(.854)
Natural Resource/Oil & Gas		18.12(.000) ***	0.219(.528)	19.729(.000)***	0.420(.244)	4.683(.709)	-.397(.449)	34.490(.003)***	-1.254(0.026)	22.783(.026)**	1.456(.104) *	24.802(.019)	1.173(.172)	15.775(.040)**	1.666(.148)
Year 2011		-5.617(.097) *	0.057(.814)	-4.699(.163)	0.089(.711)	-	-	-	-	-	-	-	-	-	-
Year 2013		-1.434(.676)	0.288(.242)	-2.038(.550)	0.257(.295)	-	-	-	-	-	-	-	-	-	-
Year 2014		-3.352(.327)	0.207(.397)	-4.750(.165)	0.130(.598)	-	-	-	-	-	-	-	-	-	-
Year 2015		-4.866(.157)	0.553(.025)**	-7.630(.031)**	0.408(.110)	-	-	-	-	-	-	-	-	-	-

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. More so, to avoid dummy variable trap, year 2012 and health care/consumer goods industry are excluded from the regression analysis. They are both used as base year dummy and base industry dummy for comparison reasons. NICGI is the Nigerian Corporate Governance Index.

Similar to Nigeria, this indicates that both models are significant in South Africa and thus the null hypothesis that the regression coefficient of the control variables and the SACGI is zero is not accepted. Results from Model I indicate that the control variables account for 18.9% of the variations in the accounting returns of listed firms (ROCE) and 21.2% variation in market return of listed firms (Q-ratio). With the addition of the South African Corporate Governance index (SACGI) to the equation (Model II), adjusted R^2 for ROCE increased to 0.194 and Q-ratio to 0.217. The control variables plus the quality of internal corporate governance structures in South Africa (SACGI) explain 19.4% of variation in the accounting return (ROCE) and 21.7% of the market return of listed firms (Q-ratio) in South Africa. There is an increase of 0.5% in the adjusted R^2 for ROCE and Q-ratio with the addition of the quality of internal corporate governance structures in South Africa (SACGI). This may suggest that the quality of internal corporate governance structures in South Africa accounts for a 0.5% variation in both the accounting and market returns of listed firms. This is, however, lower than the results of Klapper and Love (2004,pp.719), Ntim (2009,pp.269-273), who reported that the quality of internal corporate governance structures in South Africa accounts for 3% and 10% respectively of the variations in the accounting returns and market returns of listed firms in South Africa. This low explanatory power of the quality of internal corporate governance structures (SACGI) is a result of inertia in relevance attached to CG compliance over the years. Firms may be complying with CG provisions by ticking the box but not necessarily making sure that the selected structures are meaningfully used to improve on firm performance. More so, the apply or explain principle of King III which gives firms flexibility to choose whatever structures they see fit may account for a relaxation in adopting good CG standards with a consequential weak CG monitoring system which may not meaningfully impact on firm performance. As the descriptive earlier suggested, after the introduction of King III, firms increased their CG compliance in 2011, but beyond that, compliance levels have increased at a decreasing rate.

The adjusted R^2 ranged from 9.1% to 23.2% between 2010 and 2014 with regard to accounting returns and the highest was in 2014, whereas, with regard to market return, the adjusted R^2 ranged from 14.5% to 29.3% with the highest in 2014. For the five firm years, the model explains a pooled average of 19.4% variation in the accounting returns and 21.7% market returns variation for listed firms in South Africa. This is similar to the results reported by Ntim (2009,pp.269-273), who reported adjusted R^2 of 7% to 23% based on accounting

returns and 7% to 21% in the market returns of listed firms in South Africa in the period 2002 to 2006.

The variable of interest in this equation, the quality of internal corporate governance structures in South Africa as measured by the SACGI, shows that SACGI is positively and significantly related to accounting returns (ROCE) with coefficients of 0.318(0.05**) but negatively and significantly related to market returns with coefficients of -0.013(.038**) both at 5% (p≤0.05). Regarding the five firm years, the quality of internal corporate governance structures in South Africa showed positive relationship across all the firm years with ROCE, but the results were only significant in 2014 at 10% (p≤0.10). On the other hand, the quality of internal corporate governance structures in South Africa with regard to Q-ratio shows negative relationship across all firm years but only significant in 2012 at 10% (p≤0.10). Like Nigeria, the differences in significance between cross sectional and panel results for SACGI impact on firm performance suggest that the latter includes more sample variability over time than the former which adds variability of individual year effects of SACGI on firm performance which improves on the significant positive impact of SACGI on firm accounting performance and negative impact on market returns. More so, the insignificant cross-sectoral effect suggests that SACGI effect on firm financial performance improves over time compared to individual periods. The significant SACGI-Q-ratio association, are consistent with the correlation results reported in table 15 which showed that there was a negative and significant association between the quality of internal corporate governance structures in South Africa and the market return (Q-ratio). This negative impact suggests that over time, the application of governance guidelines as required by King III in South Africa is negatively valued by the stock market.

The significant positive relationship between SACGI and ROCE supports hypothesis 11a, which states that there is a statistical significant positive relationship between compliance with King III corporate governance provisions and firm financial performance as measured by ROCE. On the other hand, the result based on Q-ratio suggests hypothesis 11a cannot be accepted and therefore the alternative hypothesis that compliance with King III corporate governance provisions does not positively affect firm market performance as measured by Q-ratio is accepted. Therefore, compliance with the King III corporate governance provisions by South African-listed firms affects market returns negatively but impacts positively on their accounting returns. Consequently, compliance with the King III corporate governance

provisions in view of the results of this study is a *double-edged sword* whereby more compliant firms experience increasing accounting returns and, on the other hand, decreasing market valuation.

The positive results between the quality of internal corporate governance structures in South Africa is consistent with Klapper and Love (2004), who found a positive relationship between CG compliance and firm performance in South Africa based on accounting returns. The results based on accounting returns (ROCE) are also consistent with the results discussed in 8.2.1 with regard to compliance with Nigerian corporate governance provisions of the SEC and are also consistent with other studies which have found positive relationships between these two variables in Africa, e.g. Ghana (Owusu and Weir, 2012) and Kenya (Lishenga and Mbaka 2015), South Africa (Ntim, 2013c). However, the results based on the market returns contradict the findings of Klapper and Love (2004) and Ntim (2013c), who found a positive relationship between the quality of internal corporate governance structures in South Africa and markets returns as measured by Q-ratio. On the other hand, inverse link between CG index and market value are consistent with the results of Bebchuk et al. (2008), using S&P 500 firms with data for the period 1993–2002, and Madanoglu et al. (2016), using US-listed firms between 1990–2008. The differences in results from prior South African studies may be attributable to different periods of studies as well as differences in measurement of the SACGI. For example, Ntim (2009) and Ntim (2013c) developed corporate governance index for South Africa based on provisions of King II in the period 2002–2006, while the current study is based on the provisions of the current King III. More so, these differences in results may be attributable to the different reporting styles between the King II and King III. The King II required firms to comply or explain their reasons for non-compliance while the King III works within the framework of apply or explain the reasons for non-application. Hence, within the King III framework, firms can apply the provisions as they see fit based on the firms' needs and, as such, the market may not view this favourably. Finally, the differences in results may be attributable to the problem of inertia in the market. Inertia exists because, over the years, the development of different corporate governance reports (King I to III) has led to investors feeling disconnected and paying little attention to CG regulations and, as such, punishing firms who pay attention more to compliance rather than pursuing profit maximisation. This may suggest that compliant firms are undervalued by investors for pursuing compliance goals at the expense of profitability goals. In such a case, investors and markets do not see any value in complying with corporate governance provisions and

therefore value compliant firms negatively. In fact, this is in line with the results of Tariq and Abbas (2013), who reported that firms that comply highly with corporate governance provisions in Pakistan are less profitable than average- and low-compliance firms.

Concerning the control variables, as expected and similar to the Nigeria results, sales growth in South Africa is positive and significantly related to ROCE at 5% ($p \leq 0.05$) in both models II and I. Nevertheless, contrary to Nigeria results, sales growth is also significantly related to Q-ratio in both models II and I at 1% ($p \leq .001$). Again, similar to Nigeria results and contrary to expectations, dual listing has negative impact on both ROCE and Q-ratio but is only statistically significant with ROCE in both models I and II at 1% ($p \leq 0.001$). As noted, this result rejects the preposition that dual-listed firms tend to benefit from abundant supply of resource and therefore perform better than non-dual-listed firms. In the same way, it contradicts the results of Charitou and Louca (2009), who found that dual-listed firms are associated with positive accounting returns.

In addition, and contrary to the results from analysis of Nigeria data, the results from South African data analysis show that audit firm size negatively and significantly affects both ROCE and Q-ratio at 1% ($p \leq 0.001$). Consistent with the Nigerian results and the results of Klapper and Love (2004), firm size in South Africa was found to have a significant positive effect on ROCE and Q-ratio in both models.

As argued by Ntim (2009, 2013d, 2013a), gearing can impact on market returns and accounting returns differently. Results show capital structure (gearing) is positively related to Q-ratio insignificant but negatively related to ROCE significantly at 1% ($p \leq 0.001$). These results are also consistent with the result reported for Nigeria in 8.2.1. These results suggest that, in South Africa, highly geared firms outperform lowly geared firms in relation to market returns but perform worse in relation to accounting returns.

Contrary to the Nigerian results, total asset has a negative insignificant relationship with ROCE across both models. However, it is significant and negatively associated with Q-ratio at 10% ($p \leq 0.10$) in Model I. Similar to Nigeria results, capital expenditure (CAPEX) in South Africa affects significantly and negatively on Q-ratio at 1% ($p \leq 0.001$). Nevertheless, contrary to Nigerian results, CAPEX insignificantly affects ROCE positively.

Table 17: South African OLS Regression Results for the Compliance Index Model (SACGI) Based on Accounting Performance Measure (ROCE) and Market Performance Measure(Q-ratio)

	Exp Sign	All firm years (Model I)		All firm years (Model II)		2010		2011		2012		2013		2014	
		ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio
R-Square (R2)		.217	.239	.223	.246	.22	0.266	.265	.363	.252	.303	.294	.335	.341	.393
Adjusted R2		.189	.212	.194	.217	.091	.145	.144	.259	.129	.188	.178	.225	.232	.293
F-value		7.84(.000) ***	8.90(000)***	7.67(.000) ***	8.70(.000)***	1.71(.069)*	2.20(.014)***	2.19(.015)**	3.47(.000)***	2.04(.024)**	2.64(.003)***	2.530(.005)***	3.05(.001)***	3.14(.001)***	3.93(000) ***
Standard Error		23.298	0.872	23.328	0.869	24.156	1.125	23.136	0.767	21.422	0.906	64.648	0.811	25.127	.712
Durbin–Watson		1.047	1.026	1.055	1.041	2.251	2.269	2.222	2.211	2.135	2.161	2.208	1.793	1.822	2.216
Highest VIF Score		2.054	2.019	2.057	2.022	2.223	3.238	2.15	3.259	2.077	3.224	2.063	3.224	2.131	3.901
No of observations		500	500	500	500	100	100	100	100	100	100	100	100	100	100
Constant		33.143(.000)***	1.876(.000)***	8.099(.55)	2.61(.000) ***	18.516(.489)	3.110(.014)***	15.024(.624)	2.716(.009)***	4.014(.668)	4.340(.001)***	-7.782(.828)	3.465(.004)***	-49.987(.191)	.801(.456)
SACGI	+		.318(.05) **	-.013(.038)**	.190(.573)	-.021(.194)	.252(.491)	-.011(.344)	.368(.291)	-.026(.076)*	.448(.277)	-.015(.269)	.798(.068)*	.010(.433)	
Sales Growth	+	.076(.051)**	.005(.001)***	.072(.065)*	.005(.001)***	.028(.767)	.012(.005)***	.059(.453)	.008(.003)***	.179(072)*	-.002(.633)	.188(.067)*	.001(.690)	.041(.661)	.001(.506)
Dual Listing	+	-8.129(.009)***	-.152(.188)	-8.322(.007)***	-.144(.209)	-9.979(.170)	-.088(.794)	-3.630(.598)	-.173(.452)	-10.135(.113)	-.111(.678)	-.767(.912)	.014(.955)	-13.887(.070)*	-.356(.099)*
Audit Firm Size	+	-9.287(.012)***	-.456(.001)***	-9.972(.007) ***	-.429(.002)***	-13.018(.148)	-.375(.369)	-10.919(.210)	-.710(.015)***	-9.040(.271)	-.555(.111)	-16.525(.080)*	-.461(.136)	3.176(.715)	.162(.511)
Firm Size	+	6.408(.007)***	.304(.001)***	5.369(.026)**	.345(.000)***	-.618(.918)	.475 (.094)*	-.079(988)	.318(.074)*	3.591(.476)	.360(.093)*	7.029(.220)	.130(.488)	19.713(.001)***	.287(.095)*
Capital Structure (Gearing)	+/-	-.103(.002)***	.001(.531)	-.107(.002) ***	.001(.457)	.021(.791)	.002(.662)	-.076(.367)	.002(.441)	-.131(.083)*	.001(.769)	-.114(.154)	.001(.593)	-.191(.015)***	-.001(.661)
Total Asset	+/-	-.000(.28)	-.000(.097)*	-.000(.18)	-.000(.171)	-.000(.323)	.000(.546)	-.000(.748)	-.000(.470)	-.000(.391)	-0.000(.903)	0.000(.452)	.000 (.966)	.000(.898)	.000(.017)***
Market Value	+	.000(.035)**	.000(.000)***	.001(.035)**	.000(.000)***	.001(.273)	.000(.164)	0.001(.352)	.000(.009)***	.000(.866)	.000(.008)***	.000(.292)	.000 (.003)***	-.000(.430)	.000(.002)***
Capital Expenditure (CAPEX)	+/-	.000(.736)	-.000(.003)***	.000(.700)	-.000(.003)***	-.000(.606)	-.000(.754)	-.000(.918)	-.000(.069)*	.000(.607)	-.000(.079)*	.000(.777)	-.000(.088)*	.000(.260)	-.000(.272)
Basic Material		-21.734(.000)***	-.149(.290)	-22.862(.000) ***	-.104(.461)	-16.66(.052)**	.354(.372)	-26.025(.003)***	.410(.145)	-16.444(.060)*	-.220(.553)	-27.456(.004)***	-.533(.087)*	29.386(.002)***	-.733(.007)***
Consumer Goods		4.734(.286)	.313(.059)**	3.653(.412)	.355(.033)**	14.125(.178)	.537(.270)	12.254(.222)	.777(.021)**	1.469(.873)	.471(.228)	3.332(.752)	.102(.768)	-15.138(.165)	-.040(.896)
Finance Industry		-2..731(.417)	-.614(.000)***	-2.488(.458)	-.624(.000)***	-3.611(.645)	-.456(.213)	-5.521(.460)	-.386(.121)	-6.221(.371)	-.683(.022)**	.527(.947)	-.862(.001)***	-2.700(.747)	-.675(.005)***
Industrial		-7.076(.046)**	-.287(.030)**	-8.373(.020)**	-.236(.078)*	-4.630(.578)	.029(.939)	-6.336(.434)	-.060(.824)	-10.012(.183)	-.290(.361)	-6.027(.489)	-.294(.306)	-20.690(.021)**	-.554(.029)**
Telecoms/Technology Industry		4.922(.267)	-.115(.487)	4.476(.312)	-.097(.555)	8.746(.414)	-.312(.531)	3.49(.728)	.089(.786)	3.932(.668)	.0189(.961)	7.090(.500)	-.148(.667)	1.411(.894)	-.124(.681)
Year 2010		-.034(.992)	.148(.232)	1.371(.686)	.093(.462)										
Year 2012		-.149(.964)	.053(.668)	-.882(.791)	.082(.509)										
Year 2013		-5.355(.107)*	.028(.820)	-6.551(.053)**	.074(.556)										
Year 2014		-7.315(.028)**	-.086(.489)	-8.644(.011)***	-.034(.790)										

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. More so, to avoid dummy variable trap, year 2011 and consumer services/health care industry are excluded from the regression

analysis. They are both used as base year dummy and base industry dummy for comparison reasons. SACGI is the South African Corporate Governance index based on King III corporate governance code.

The next section presents results based on alternative firm-level internal corporate governance mechanisms as examined in the equilibrium variable model.

8.3 Results Based on Equilibrium Variable Model (EVM)

Sub-research Question 2: Do endogenously generated alternative firm-level internal corporate governance mechanisms affect firm financial performance in Nigeria and South Africa?

Hypothesis: 1–9 and 11.

8.3.1 Nigerian Empirical Results – Equilibrium Variable Model (EVM)

Table 18 below contains OLS results based on accounting measure (ROCE) and market measure (Q-ratio) for the equilibrium variable model for Nigeria only. In this model, ROCE and Q-ratio are regressed against board size (*BSZ*), non-executive directors (*NEDs*), independent non-executive directors (*INEDs*), executive directors (*EDs*), gender diversity (*GDIV*), ethnic diversity (*EDIV*), gearing (*GEAR*), frequency of board meetings (*FRE-M*), board interlock (*ILOCK*), institutional shareholding (*D-SH),* director shareholding (*ST-SH),* audit committee independence (*IAC*) and board busyness (*BNESS*) as independent variables plus the control variables. The control variables are the same variables used in the compliance index model, except for gearing, which is included as an alternative internal corporate governance variable (independent variable). Similar to the compliance index model, two sub-models are estimated in the equilibrium variable model. As noted earlier, in the first sub-model (Model I), the control variables are regressed against ROCE and Q-ratio. Columns 3 and 4 of table 18 below show the result based on the controls, whereas column 5 to 14 show multi-variate regression of the alternative internal corporate governance variables plus the control variables for the pooled sample and for each of the five firm years respectively.

As can be read in table 18 below, the adjusted R^2 for Model I with Q-ratio and ROCE against control variables are 0.253 and 0.124 with F-values of 9.478(0.000) *** and 4.537(0.000)*** respectively and significant at 1% (p≤0.001). The results of Model I in the equilibrium variable model are similar to those of the compliance index model (8.2.1). However, with the

absence of gearing as a control variable in the equilibrium variable model, the explanatory power (adjusted R^2) of the controls on ROCE decreases from 0.155 to 0.124 and that of Q-ratio decreases from 0.258 to 0.253. Generally, the signs and significant level of the control variables in the equilibrium variable model in Nigeria are similar to those reported in the compliance index model. As such, for purposes of brevity, they will not be discussed here.

A priori, the correlation results showed serious multi-collinearity between NEDs and EDs variables (highlighted in 7.4); therefore, in Model II, three multiple regressions (IIa, b and c) were piloted using a process of elimination. To check for robustness of results, regression IIa (first regression in Model II) was tested by including both NEDs and EDs as part of the model (regression IIa). This enables a verification of multi-collinearity using the tolerance statistics and VIF values to confirm if there exists serious multi-collinearity as suggested by the correlation results. The results from this regression show adjusted R^2 of 0.167 for ROCE and 0.337 for Q-ratio significant at 1% ($p \leq 0.001$). Nonetheless, the VIF values for proportion of NEDs and EDs variables were 1839.532 and 1666.741, with corresponding tolerance statistics of 0.001 for both variables. These results confirmed the suggestion of the correlation results of serious multi-collinearity, and thus including both variables in the same regression may lead to poor regression coefficients, which may affect the interpretation, validity and reliability of the results. As a result, following Kutner et al. (2004) recommendations, two additional regressions (regression IIb and IIc) were estimated by excluding EDs variable in regression IIb, while, in regression IIc, proportion of NEDs was excluded from the regression.

The regression (regression IIb) removing the executive directors (EDs) variable showed that the adjusted R^2 remained unchanged at 0.167 for ROCE and 0.337 for Q-ratio at 1% ($p \leq 0.001$) and the signs and significance of the other variables except for NEDs remained unchanged. The proportion of NEDs which was positively and significantly related to ROCE and negatively and significantly associated with Q-ratio in regression IIa remained positively and negatively related to ROCE and Q-ratio respectively but insignificantly. The tolerance and VIF statistics for NEDs changed to 1.7504 for both Q-ratio and ROCE with tolerance statistics of 0.571 for both measures.

The final regression (regression IIc) excluded NEDs from the equation and included EDs variable. Similar to regression IIb, the adjusted R^2 remained unchanged at 0.167 for ROCE

and 0.337 for Q-ratio at 1% (p≤0.001). Consistent with the previous two regressions, the signs and significance of all other variables apart from EDs did not change. However, proportion of EDs, which was positively and significantly associated with ROCE, changed to a negative insignificantly related to ROCE, while the results on Q-ratio changed from a negative to positive association with EDs but insignificantly. The tolerance and VIF statistics for EDs remained similar to those of NEDs in regression IIb (changed to 1.7504 for both Q-ratio and ROCE with tolerance statistics of 0.571).

Following from the three sub-regressions in Model II (IIa, b and c), eliminating NED and ED indicates that multi-collinearity in an OLS regression has the potential to cause statistically significant results for some variables when they should be insignificant. This is because, when both proportion of EDs and NEDs were included in the same regression (IIa), they both had significant results, but by eliminating each of them in subsequent regressions (IIb and IIc), they showed insignificant results with different signs and coefficients. Nonetheless, since the adjusted R^2, signs and significance of the variables in the three regressions in Model II were the same across all the sub-regressions except for the two variables (NED and ED), which had serial negative correlations, for the sake of brevity in presentation, only the regression results of regression IIb are presented in table 18, though the coefficients of ED (as it was eliminated in regression IIb because of multi-collinearity with NEDs) in the table 18 below were extracted from regression IIc.

In Model II (IIb), with addition of 14 alternative internal corporate governance variables to the extraneous variables, the adjusted R^2 for ROCE and Q-ratio are 0.167 and 0.337 with F-values of 3.742(.000) *** and 7.972(.000)*** respectively and significant at 1% (p≤ 0.001). Following from the results, the null hypothesis that the regression coefficient of the control variables and the alternative internal corporate governance variables are zero is not accepted. Thus, the results indicate that the control variables and alternative internal corporate governance structures in Nigeria explain 16.7% variation in the accounting returns (ROCE) and 33.7% variation in the market return of listed firms (Q-ratio) in Nigeria. There is an increase (from 12.4% in Model I to 16.7% in Model II) by 4.3% in the adjusted R^2 for ROCE and 8.4% (from 25.3% in Model I to 33.7% in Model II) for Q-ratio because of the addition of the alternative firm-level internal corporate governance structures. This suggests firm-level internal corporate governance structures in Nigeria account for about 8.4% variation in market returns and 4.3% variation in the accounting returns of listed firms in Nigeria.

These results show slightly higher effect than the results from similar studies in Africa, e.g. Ntim (2009), who found that, on average, the alternative firm-level internal corporate governance structures explain 6% variation in both market and accounting returns of listed firms in South Africa. Adjusted R^2 for ROCE for the five firm years range from -0.05% to 29.1%, whereas the market return (Q-ratio) adjusted R^2 range from 11.2% to 43.7% in the period 2011 to 2015. These results are similar to the results of Ntim (2009), who reported firm year adjusted R^2 of 1% to 10% for ROA in South Africa for the period 2000–2006. However, the results (Adjusted R^2) for Q-ratio are higher than those reported by Ntim (2009,pp.259), 11% to 24%, and Haniffa and Hudaib (2006,pp.1053), 22% to 28%.

As reported in column 8 of table 18, the VIF scores for both sub-models (Model I and II) are less than or equal to ten, indicating that multi-collinearity was not a problem in the equilibrium variable model after eliminating the variables which had serial correlations as discussed above. More so, the Durbin–Watson test results of more than one indicates that there was no serious autocorrelation problem in the model.

Concerning the main effect of the 14 firm-level internal corporate governance structures (independent variables), the results indicate that board size has a significantly negative relationship with Q-ratio at 1% (p ≤0.001) but an insignificant positive relationship with ROCE. These results based on the accounting measure of performance do not support the findings of Sanda et al. (2005), who reported a significant positive relationship between board size and firm performance in Nigeria. More so, the negative relationship between board size and market return is consistent with the results from similar studies of Singaporean and Malaysian firms by Mak and Kusnadi (2005). Similarly, Guest (2009) used a sample of UK-listed firms covering the period 1981 to 2002 and reported negative relationship between the size of the board and market returns. Based on these findings, therefore, hypothesis three ($H_0$3), which states that there is a statistical positive relationship between board size and firm performance, is rejected. In fact the results support the argument that smaller boards may be more prone to effective executive monitoring, candid assessment of management performance and fast, effective and easy decision-making (Lipton and Lorsch, 1992, Pearce and Zahra, 1992, Jensen, 1993).

The proportion of non-executive directors was found to be positively and but insignificantly related to ROCE but negatively and significantly related to Q-ratio. This indicates that the presence of NEDs on corporate boards may have a positive impact on accounting returns but a negative impact on market returns. More so, positive results may also suggest agency theory recommendation that increasing the proportion of NEDs on board enhances firm accounting returns but reject the recommendation that NEDs positively affect firm market returns. Hence, we therefore reject hypothesis 1a which states that there is a statistical positive relationship between NEDs and firm financial performance irrespective of the performance proxy used.

In relation to the proportion of executive directors (EDs) on the board, the results are contrary to those for NEDs as there is a positive relationship between the proportion of EDs on a board and firm market returns. Whereas a negative relationship based on accounting returns though both results are insignificant. The positive results (though insignificant) on market returns may lend support to the resource dependency premise that executive directors are there to fulfil the task of meeting the internal resource dependency requirements of the firm (Hillman et al., 2000; Bryant and Davis, 2012).

The proportion of independent non-executive directors was found to have negative association with accounting returns (ROCE) and market performance (Q-ratio), but only the results of the latter are significant at 1% (p ≤0.001). However, the results based on accounting returns were significant in 2013. These results suggest that the presence of independent directors on corporate boards in Nigeria may adversely affect firm performance. This may be because, if companies appoint independent directors for the sake of meeting regulatory provision without the right skills needed to perform the duties as independent directors, performance will suffer because such INEDs will have little to contribute to the functioning of the board.

The separation of CEO/Chairman positions showed a negative association with accounting returns (ROCE) but positive impact on market returns (Q-ratio), but only the latter results are statistically significant. The insignificant results with accounting returns are consistent with the findings of other researchers, who found no significant impact of CEO/chairman role separation on accounting performance (e.g. Baliga et al., 1996, Pearce and Zahra, 1992, Pearce and Zahra, 1991). The significant positive impact of CEO/Chairman separation on

market returns implies that the market values firms that separate this position more than firms that do not separate the positions. Hence, the insignificant results for accounting returns reject hypothesis two which states that there is a statistically significant positive relationship between CEO/chairman separation and accounting returns. However, this hypothesis is accepted with regards to market returns. The accounting returns results lend support to the stewardship theory argument that a duly empowered CEO possesses the necessary technical and managerial competence that contributes to easy decision-making and enhances performance. As such, CEO role duality can build trust, stimulate and motivate management to perform well and thus enhance organisational performance. However, significant impact of leadership separation on market returns suggests separating leadership is a good CG practice which enhances the board's ability to monitor and control management which consequently will lead to an increase in board independence, and thus agency conflict will reduce, which has a positive impact on shareholders' value maximisation goal.

Furthermore, frequency of board meetings showed positive association with both accounting returns (ROCE) and market returns, but the results are not statistically significant. These results are consistent with the findings of Ntim (2009,pp.263), who found positive but insignificant relationship between frequency of board meetings and market valuation. These results may lend supports to the results of Karamanou and Vafeas (2005), who conducted research using a sample of 275 US-listed firms from 1995 to 2000 and found a positive relationship between frequency of board meetings and firm financial performance. The results are also consistent with the results of Mangena and Tauringana (2006), who studied a sample of 157 Zimbabwean-listed firms covering the period 2001–2003 and found a positive relationship between firm performance and frequency of board meetings. However, Karamanou and Vafeas (2005) and Mangena and Tauringana (2006) had statistically significant results. Though these results are insignificant, they may however suggest that, *ceteris paribus,* more frequent board meetings can enhance board quality decision-making, managerial monitoring and control, which can be perceived as good practices.

Board interlocks showed a positive relationship with accounting returns but a negative relationship with market returns insignificantly. But results for market returns is significant in 2014 at 10% ($p \leq 0.10$). These results based on accounting return (ROCE), even though insignificant, lend support to the findings of Ong et al. (2003), who studied interlocking

Table 18: Nigerian OLS Regression Results for Equilibrium Variable Model Based on Accounting Performance Measure (ROCE) and Market Performance Variable (Q-ratio)

	Exp Sign	All firm years (Model I)		All firm years (Model II)		2011		2012		2013		2014		2015	
		ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio
R-Square (R^2)		.159	.284	.228	.385	.332	.604	.390	.615	.515	.500	.313	.553	.468	.400
Adjusted R^2		.124	.253	.167	.337	.023	.421	.108	.437	.291	.269	-.005	.346	.213	.112
F-value		4.537(.000) ***	9.478(.000)***	3.742(.000)***	7.972(.000)***	1.075(.400)	3.299(.000)***	1.381(.160)	3.457(.000)***	2.295(.005)***	2.163(.009)***	.983(.503)	2.217(.001) ***	1.835(.033)**	1.387(.158)
Standard Error		21.729	1.534	21.246	1.449	27.834	0.882	23.516	0.924	19.634	1.618	21.729	1.475	15.624	2.278
Durbin–Watson		1.963	1.089	1.986	1.236	2.215	2.463	2.420	2.368	2.112	2.268	2.174	2.362	2.116	1.770
Highest VIF Score		4.788	5.402	9.302	9.904	20.449	17.495	18.721	18.72	10.90	21.94	21.679	21.34	8.867	8.867
No of observations		400	400	400	400	80	80	80	80	80	80	80	80	80	80
Constant		3.289(.392)	1.148(.000)***	28.916(.068)*	3.418(.001)***	9.984(.820)	2.310(.101)*	-18.635(.642)	2.889(.071)*	4.615(.897)	3.466(.241)	62.883(.153)	5.314(.074)*	25.235(.438)	2.675(.601)
Board Size	+/-	-	-	.005(.992)	-.101(.005)***	-.036(.985)	-.037(.545)	1.808(.278)	.015(.815)	1.948(.158)	-.022(.848)	.265(.843)	-.145(.112)	.284(.790)	-.108(.485)
NED	+	-	-	.003(.971)	-.003(.677)	-.385(.260)	.002(.858)	.374(.211)	.006(.629)	.200(.466)	-.006 (.762)	.021(.940)	-.015(.415)	-.085(.653)	-.002(.924)
Independent NED	+	-	-	-.117(.306)	-.019(.012)***	.317(972)	-.001(.897)	..046(.885)	-.006(.609)	-.446(.108)*	-.022(.328)	-.020(.785)	-.006(.274)	-.121(.508)	-.030 (.258)
Executive Directors	+/-	-	-	-.004(.971)	.003(.677)	.385(.260)	-.002(.858)	-.378(.211)	-.006(.587)	-.200(.466)	.007(.770)	-.021(.940)	.015(.427)	.085(.653)	.003(.924)
CEO Duality	-	-	-	-2.0115(.837)	1.395(.037)**	36.931(.150)	.859(.288)	-3.911(.858)	.316(.714)	-6.973(.780)	.901(.662)	-29.890(.285)	1.567(.404)	-11.21(.603)	3.088(.328)
Board Meetings	+	-	-	.784(.457)	.017(.812)	2.860(.346)	.004(.969)	.015(.997)	.019(.888)	.102(964)	.016(.931)	-.168(.939)	-.072(.628)	3.387(.211)	.085(.828)
Director Shareholding	+	-	-	-.092(.070)*	-.004(.199)	-.029(.884)	.002(.747)	-.151(.402)	.005(.474)	-.069(.574)	-.010(.343)	-.107(.412)	-.008(.383)	-.203(.039)**	-.025(.080)*
Institutional Shareholding	+	-	-	-.042(.501)	.007(.066)*	-.063(.767)	.007(.320)	.061(739)	.007(.312)	-.162(.290)	.008(.535)	-.031(.836)	.010(.306)	.065(.519)	.014(.317)
Board Busyness	-	-	-	-1.545(.100)*	.031(.626)	-2.304(.457)	-.017(.861)	-2.126(.451)	.062(.573)	-1.159(.557)	.072(.660)	-1.258(.509)	.202(.119)	-1.995(.463)	-.120(.760)
Ethnic Diversity	+	-	-	-.181(.023)**	-.018(.001)***	-.407(.121)	-.019(.028)**	-.035(.871)	-.006(.448)	-.157(.381)	-.017(.260)	-.126(.574)	-.031(.043)**	-.164(.204)	-.035(.063)*
Gender Diversity	+	-	-	.328(.007)***	.016(.004)***	.847(.213)	.017(.174)	.222(.477)	.014(.258)	.449(.119)	.030(.202)	.238(.468)	.015(.492)	.321(.089)*	.012(.657)
Board Interlocks	+	-	-	7.140(.123)	-.196 (.533)	10.452(.447)	-.064(.883)	10.219(.460)	-.500(.329)	4.756(.621)	-.305(.700)	6.080(.542)	-1.208(.076)*	10.551(.408)	.857(.644)
Audit-Com. Independence	+	-	-	-.078(.292)	-.015(.002)***	.143(.521)	-.005(.446)	-.192(.307)	-.018(.019)**	-.085(.593)	-.017(.196)	-.197(.369)	-.006(.688)	-.166(.213)	-.017(.375)
Capital Structure (Gearing)	+/-	-	-	-.127(.000)***	.001(.526)	-.149(.164)	.004(.284)	-.172(.077)*	.007(.054)**	-.171(.052)**	.005(.496)	-.224(.015)***	.006(.284)	-.096(.111)	-.004(.602)
Sales Growth	+	.110(.048)**	-.001(.794)	.128(.021)**	-.002 (.519)	.014(.890)	-.003(.581)	.310(.049)**	-.008(.177)	.284(.013)***	-.001(.912)	.116(.408)	.015(.115)	-.037 (.383)	-.026(.321)
Dual Listing	+	4.982(346)	-.503(.178)	2.623(.648)	-.175(.655)	14.373(.923)	.415(.451)	3.601(.802)	.621(.274)	10.878(.387)	-.491(.635)	-8.796(.521)	-1.244(.181)	-5.498(.636)	.001(.999)
Audit Firm Size	+	10.041(.000) ***	.509(.008)***	11.828(.000) ***	.470(.015)***	17.231(.049)**	-.185(.499)	4.206(.585)	-.073(.809)	18.780(.004)***	.933(.078)*	11.792(.103)*	.522(.280)	12.53(.013)***	1.62(.027)**
Firm Size	+	-2.429(386)	.271(.170)	-1.966(.554)	.179(.430)	-11.990(.267)	.154(.652)	8.192(.348)	.041(.903)	-7.301(.387)	-.107(.877)	2.563(.758)	.157(.780)	-8.540(.125)	-.327(.684)
Total Asset	+/-	-0.000(.823)	-.000(.390)	-.000(.248)	-.000(.264)	-.000(.780)	-.000 (.385)	-.000(.294)	-.000(.683)	-.000(.197)	-.000(.206)	-.000(.307)	-.000(.292)	.000(.446)	.000(.956)
Market Value	+	.000(.026)**	.000(.000)***	.000(.273)	.000(.000)***	.000(.890)	.000(.002)***	.000(.099)*	.000(.001)***	.000(.384)	.000(.007)***	.000(.840)	.000(.011)**	.000(187)	.000(.109)*
Capital Expenditure (CAPEX)	+/-	-.000(.244)	-.000(.001)***	.000(.741)	-.000(.020)**	.000(.517)	-.000(.197)	-.000(.256)	-.000(.075)*	-.000(.812)	-.000(.097)*	.000(.922)	-.000(.227)	-.000(.641)	-.000(.458)
Agriculture/Consumer Goods		12.128(.001)***	.412(.121)	9.836(.013)***	.383(.156)	-.519(.353)	.116(.782)	5.978(.592)	-0.515(.243)	15.857(.065)*	.573(.413)	79.0987(.333)	.365(.563)	2.301(.720)	.990(294)
Finance Industry		1.598(.634)	-1.114(.000)***	1.872(.607)	-.635(.011)***	-10.949(302)	-.391(.293)	2.927(.771)	-1.129(.006)***	5.650(.480)	-.693(.294)	5.201(.541)	-.802(.165)	-2.288(.717)	-.111(.904)
ICT/Real-estate		8.634(.078)*	.111(.747)	10.329(.046)**	-.083(.813)	11.320(.521)	-.017(.976)	21.702(.132)	-1.117(.050)**	20.553(.059)*	-.504(.568)	129.946(.424)	-.603(.472)	-20.8(.019)***	2.192(.087)*
Industrial/Conglomerate		-1.514(.777)	-.835(.027)**	-1.8713(.740)	-1.053(006)***	-23.156(.227)	-.604(.319)	.442(.977)	-1.800(.004)***	-.057(.996)	-1.500(.128)	6.481(.656)	-1.757(.077)*	-1.854(.884)	-.330(.815)
Natural Resource/Oil & Gas		15.904(.001)***	-.092(.780)	16.072(.001)***	-.307(.358)	-1.959(.896)	-.685(.152)	36.749(.005)***	-1.613(.002)***	26.268(.014)***	.002(.998)	21.118(.099)*	.204(.811)	15.311(.079)*	1.172(.652)
Year 2011		-5.492(.111)	.101(.676)	-5.574(.100)*	.090(.695)	-	-	-	-	-	-	-	-	-	-
Year 2013		-1.772(612)	.217(.378)	-.722(.836)	.219(.356)	-	-	-	-	-	-	-	-	-	-
Year 2014		-4.277(218)	.162(.508)	-2.492(.475)	.148(.533)	-	-	-	-	-	-	-	-	-	-
Year 2015		-5.678(.104)*	.5285(.032)**	-5.283(.135)	.500(.036)**	-	-	-	-	-	-	-	-	-	-

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. More so, to avoid dummy variable trap, year 2012 and health care/consumer goods industry are excluded from the regression

analysis. They are both used as base year dummy and base industry dummy for comparison reasons.

directorates among 295 listed Singapore firms and found a positive relationship with firm performance (using ROA, return on sales, profit before tax as proxies). In relation to the market returns, the results are in line with the results of Fich and Shivdasani (2006), who reported an inverse statistically significant relationship to market-to-book ratio of firms. Deducing from these findings, hypothesis 7a, which states that there is a statistically significant positive relationship between board interlock and firm financial performance, is rejected with respect to accounting return (ROCE) and market returns (Q-ratio).

Furthermore, board busyness is developed as an index to measure busyness of boards. It is being created by multiplying the average board interlock for a year by the number of board meetings for the year to capture how much time a director will spend on other board activities out of a firm. The results show that there is a negative relationship between board busyness and ROCE but positive impact on Q-ratio, though only the results of the former are statistically significant. The negative significant results on accounting returns imply that director's busyness with other board activities outside firms affects negatively firm accounting returns directly as these directors are too busy to concentrate on performing board activities. Surmising from these findings, hypothesis 7b, which states that there is a statistically significant negative relationship between board busyness and firm financial performance, is accepted with respect to accounting returns (ROCE) and but rejected for market returns (Q-ratio).

In addition, director shareholding (number of shares held by both executive and non-executive directors) shows negative and significant association with accounting returns at 10% (p $\leq$0.10), but is insignificantly related to market returns. However, these results are significant with both performance measures in 2015. This negative relationship contradicts the agency theory premise that increasing ownership of managers in firms reduces agency cost and enhances firm performance. In fact, the results suggest the proposition of the entrenchment theory, which stipulates that managers with high levels of ownership tend to focus more on maximising the market share rather than profit maximisation. The results are in line with the findings of prior research (e.g. Dwivedi and Jain, 2005) that reported negative impact of directors' shareholding on firm value. More so, the insignificantly negative relationship with market returns is consistent with the findings of Weir and Laing (2001) and Faccio and Lang (2002), who found no statistically significant effect of board ownership or management ownership on firm market value. Inferring from findings of this

study, hypothesis 9a, which states that there is a statistically significant positive relationship between director shareholding and firm financial performance, is rejected irrespective of the performance proxy used.

However, the results of institutional shareholding showed a positive and significant association with market return (Q-ratio) at 5% (p ≤0.05) but a negative and insignificant relationship with accounting returns (ROCE). These results suggest that the stock market values institutional shareholdings positively and therefore sees institutional shareholders as a medium to reduce agency cost. Shleifer and Vishny (1997) support this view by showing that large external equity holders can mitigate agency conflicts because of their strong incentives to monitor and discipline management. However, the results based on accounting return (though insignificant) may suggest that institutional shareholding may negatively affect accounting returns. Considering these results, hypothesis 9b, stating that there is a statistically significant positive relationship between institutional ownership and firm financial performance, is accepted based on the results of institutional shareholding and market value, but is rejected on the bases of institutional shareholding and accounting returns.

The results of ethnic diversity show a negative significant relationship with both accounting returns and market returns at 10% (p ≤0.10) and 1% (p ≤0.001) respectively. The results contradict Ntim (2014) results in South Africa, which indicated that board ethnic diversity is positively linked to market valuation. The negative and significant relation of ethnic diversity and Q-ratio is also significant in 2011 and 2014 at 5% (p ≤0.05) and with ROCE in 2015. This thus suggests that diverse boards in Nigeria inhibit the performance of listed firms irrespective of the performance measure. These results are supported from a social impact theory point of view (Brammer et al., 2007, Carter et al., 2010), which argues that directors who possess majority status have a tendency to exert an unequal amount of influence during the board decision-making process. This may be true for Nigeria, as a majority of board members are native Nigerians and may therefore influence the board decision-making, which may be detrimental to a firm's performance. Therefore, hypothesis 6, which states that there is a statistically significant positive relationship between board ethnic diversity and firm financial performance, is rejected irrespective of the performance proxy.

Conversely, the results of gender diversity showed a positive and significant association with both market return (Q-ratio) and accounting return at 1% (p ≤0.001). This thus suggests that

women directors do enhance the execution of board strategic function and increase firm financial performance (Fondas, 2000). In fact, these results are consistent with the findings of Carter et al. (2003), who reported a significantly positive association between gender diversity and firm performance (measured using Tobin's Q). The results are also in line with the results of Erhardt et al. (2003) and Adams and Ferreira (2004), who found that higher gender diversity on boards has a statistically significant impact on firm performance. Therefore, the presence of female directors on Nigeria corporate boards impacts positively on firm financial performance irrespective of the performance measure. Thus, hypothesis four, which states that there is a statistically significant positive relationship between board gender diversity and firm financial performance, is accepted.

Concerning gearing (debt-to-equity ratio), results indicate that there is a positive insignificant relationship between a firm gearing and a firm market valuation. However, there is an inverse relationship between gearing and accounting returns at 1% (p ≤0.001). The positive relationship between gearing and market returns may suggest that investors view highly geared firms positively as it can reduce agency conflict which comes a result of 'free cash flows' mismanagement by opportunistic agents (see Jensen, 1986a,pp.323). However, the negative relationship between gearing and accounting return supports the findings of Ntim (2009,pp.277) and therefore suggests that more profitable entities tend to prefer higher equity than debts as higher equity avails managers of financial flexibility. Following from the results thereof, hypothesis 8, which states that there is a statistically significant negative relationship between firm gearing and firm financial performance, is accepted based on accounting returns but rejected based on market returns.

Finally, audit committee independence (a measure of the proportion of independent directors in the audit committee) showed a negative relationship with both market return and accounting return but significant only with Q-ratio (market return) at 5% (p ≤0.05). The results with Q-ratio are also significant in 2012. Following from the results thereof, hypothesis 11, which states that there is a statistically significant positive relationship between audit committee independence and firm financial performance, is not accepted regardless of the performance measure. The results suggest that the presence of independent directors on audit committee inhibits the functioning of the committee as independent directors may not have the necessary skills or knowledge of the company or audit process to be able to monitor management. These results are also consistent with the earlier-reported

results that presence of independent board members on boards negatively affects firm financial outcomes. However, the results can also be attributed to the fact that the SEC 2011 code requires a minimum of one independent director. As such, firms tend to recruit the minimum required and, with this limited number, it may be difficult for a standalone, independent director to make meaningful effects on a firm's strategy and direction as well as monitor and control management.

The difference in results between cross-sectoral estimates and panel estimates for some of the internal governance variables on firm performance suggests that the latter compounds marginal effects of respective internal governance variables from individual period effect over time. More so, as mentioned earlier, owing to similarity of the coefficients and significant level of control variables in Nigeria (in equilibrium variable and compliance index model) control variables are not discussed under the equilibrium variable model.

The next section discusses equilibrium variable model results in South Africa.

8.3.2 South African Empirical Results – Equilibrium Variable Model (EVM)

Similar to Nigeria, table 19 below contains OLS results based on accounting measure (ROCE) and market measure (Q-ratio) for the equilibrium variable model for South Africa. Akin to Nigeria, two sub-models were examined using the equilibrium variable model regression. As noted earlier, in the first sub-model (Model I), the control variables were regressed against Q-ratio and ROCE. Columns 3 and 4 of table 19 below show multivariate regression results based on the control variables only; columns 5 to 14 show multivariate regression of the alternative internal corporate governance variables plus the control variables (Model II) for the pooled sample and each year respectively.

Following from table 19, the adjusted R^2 for Model I for ROCE and Q-ratio against control variables are 0.249 and 0.213 with F-values of 11.356(0.000) *** and 9.44(0.000) *** respectively with significant level at 1% (p≤0.001). The results of Model I in the equilibrium variable model are similar to those of the compliance index model (6.1.2) with respect to Q-ratio but the results based on ROCE increased approximately 6%. However, this is a result of removing gearing as a control variable in the equilibrium variable model. Therefore, with the absence of gearing as a control variable in the equilibrium variable model and contrary to the

results of Nigeria, the explanatory power (adjusted R^2) of the controls on ROCE increased from 0.189 to 0.249 and that of Q-ratio remained almost the same, from 0.212 to 0.213.

In Model II and as a priori suggested by correlation results, there is serious multi-collinearity between NED and ED variables highlighted in 8.3.1. Three regressions (IIa, b and c) are conducted using the process of elimination. Similar to Nigeria, to ensure robustness, the first regression included both NED and ED in the model (regression IIa) to confirm the tolerance results and the VIF scores and to ensure there is actually serious multi-collinearity. The results from this regression showed that the adjusted R^2 was 0.278 for ROCE and 0.220 for Q-ratio significant at 1% (p≤0.001). However, the VIF score for NEDs variable was 2664.713 and 2655.770 for ED variable, with tolerance statistics of 0.000 for both variables. This thus confirms serious multi-collinearity and thus including both variables in the same regression may lead to poor regression coefficients, which may affect the validity and reliability of results. Two additional regressions (regression IIb and IIc) were estimated by eliminating ED variable in one (regression IIb) while the other (regression IIc) eliminated the NED variable.

The regression (regression IIb) eliminating executive director variable showed that the adjusted R^2 remained the same as in regression IIa at 0.278 for ROCE and 0.220 for Q-ratio at 1% (p≤0.001) and the signs and significance of the other variables with the exception of NEDs remained the same. The proportion of NED, which was positively and insignificantly related to ROCE and negative and insignificantly associated with Q-ratio, became positively related to ROCE and significant at 1% (p≤0.001), whereas the results on Q-ratio remained negatively associated with NED insignificantly. The tolerance and VIF statistics for NEDs were 1.852 and 1.840 for Q-ratio and ROCE with tolerance statistics of 0.540 and 0.543 respectively.

The last regression (regression IIc) eliminated NEDs from the equation and included ED variable. Similar to regression IIb, in this regression (regression IIc), the adjusted R^2 remained the same at 0.278 for ROCE and 0.220 for Q-ratio at 1% (p≤0.001). Consistent with the previous two regressions, the signs and significance of all other variables except for EDs remained the same. In the latter regression, EDs, which was positively but insignificantly associated with ROCE, is now negatively and significantly related to ROCE at 1% (p≤0.001), while the results on Q-ratio changed from negative to positive association with ED but still

insignificantly. The tolerance and VIF statistics for EDs are 1.858 and 1.834 for Q-ratio and ROCE, with tolerance statistics of 0.538 and 0.545 respectively.

Accordingly, the results of two regressions eliminating either NED or ED indicate that multi-collinearity in an OLS regression has the potential to cause statistically insignificant results for some variables when they should be significant. Adjusted R^2, signs and significance of the variables in the three regressions in Model II were the same apart from the two variables (NED and ED) which had serial negative correlations; for the purpose of brevity, only the regression results of regression IIb are presented in table 19.

However, the coefficients of ED (as it was eliminated in regression IIb because of multi-collinearity with NEDs) in the table 19 were extracted from regression IIc. The results of Model II (regression IIb) show that the adjusted R^2 for ROCE and Q-ratio are 0.278 and 0.220 with F-values of 7.570(0.000) *** and 5.833(0.000) *** respectively and significant at 1% (p≤ 0.001). The results suggest that the null hypothesis that the regression coefficient of the alternative internal corporate governance (independent variables) variables and control variables is zero is not accepted. As a result, the findings indicate that the control variables and alternative internal corporate governance structures in South Africa explain 27.8% variation in the accounting returns (ROCE) and 22% of the market returns (Q-ratio) of South African-listed firms. This shows an increase of 2.9% in the adjusted R^2 for ROCE and a slight increase of 0.7% for Q-ratio with the addition of the alternative firm-level internal corporate governance structures. Thus, these suggest that firm-level internal corporate governance structures in South Africa account for about 0.7% variation in market returns and 2.8% variation in the accounting returns of listed firms in South Africa. These results are lower than the results of a similar study by Ntim (2009), who found that, on average, alternative firm-level internal corporate governance structures explain 6% variation in both market and accounting returns of listed firms in South Africa. Adjusted R^2 for ROCE for the five firms years range from 13% to 26.4% whereas the market return (Q-ratio) ranges from 9.1% to 28.6% in the period 2010–2014. However, cross-sectional results for ROCE are higher than those reported by Ntim (2009), ranging from 1% to 10% for accounting returns in South Africa in the period 2002 to 2006. On the other hand, the results (adjusted R^2) for Q-ratio are similar to those reported by Ntim (2009,pp.259), 11% to 24%, and Haniffa and Hudaib (2006,pp.1053), 22% to 28%.

Like Nigeria, the VIF scores as reported in column 8 of table 19 for both sub-models (Model I and II) are less than or equal to ten, indicating that multi-collinearity was not a problem in the equilibrium variable model in South Africa. Furthermore, the Durbin–Watson test results of more than one indicates that there was no serious autocorrelation problem in the model. Consistent with the Nigerian results, signs, coefficients and significant level of the control variables of the equilibrium variable model in South Africa are similar to those of the compliance index model reported in table 17 with the exception of capital expenditure, which was positively related to ROCE in the latter, but now negatively in the former but insignificantly. Hence, for brevity, since it has been discussed in 8.2.2, it is not discussed here.

With reference to the impact of individual firm-level internal corporate governance structures (independent variables) on firm financial performance, the results indicate that board size is significantly negatively associated with both Q-ratio and ROCE at 5% ($p \leq 0.05$). Across the five firm years, board size was only significant and negatively related to ROCE in 2014. These results do not support the findings of Ntim et al. (2015b), who reported positive association between board size and firm valuation using 169 South African firms from 2002 to 2011. Similarly, this negative relationship is consistent with the results of Mak and Kusnadi (2005), who reported similar results using Singaporean and Malaysian firms. Thus, these findings reject hypothesis 3, which states there is a significant positive relationship between board size and firm performance irrespective of the measure of performance used. This contradicts the argument that larger boards provide better access to external and internal resources. On the other hand, the results support the argument put forward by some scholars (Lipton and Lorsch, 1992, Pearce and Zahra, 1992, Jensen, 1993) that smaller boards are likely to be effective in executive monitoring, frank assessment of management performance and fast, effective and easy decision-making.

Like the Nigerian results, the proportion of non-executive directors is positively and significantly associated with ROCE at 1% ($p \leq 0.001$), whereas it is negative and insignificantly related to Q-ratio. The positive relationship between ROCE and NEDs is consistent across each firm year but only significantly in 2011 at 10% ($p \leq 0.10$). This shows that increasing the proportion of NEDs on corporate boards increases the accounting returns significantly but decreases the market returns. Hence, the results based on accounting returns therefore validate the agency theory recommendation that by increasing the proportion of

Table 19: South African OLS Regression Results for Equilibrium Variable Model Based on Accounting Performance Measure (ROCE) and Market Performance Measure (Q-ratio)

	Exp sign	All firm years (Model II)		All firm years (Model II)		2010		2011		2012		2013		2014	
		ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio
R-Square (R^2)		.273	.238	.320	.266	.358	.326	.402	.474	.383	.350	.420	.400	.460	.451
Adjusted R^2		.249	.213	.278	.220	.142	.098	.200	.286	.171	.130	.222	.198	.275	.265
F-value		11.356(.000)***	9.44(.000)***	7.570(.000)***	5.833(.000)***	1.653(.050)**	1.428(.121)	1.990(.012)***	2.526(.001)***	1.809(.027)**	1.601(.064)*	2.118(.007)***	1.976.013)***	2.483(.001)***	2.430(.002)***
Standard Error		22.517	.871	22.145	.869	23.476	1.555	22.362	.753	20.987	.937	24.085	.825	24.547	.726
Durbin–Watson		1.979	1.876	2.004	1.841	2.108	1.864	1.902	1.838	2.118	2.099	2.337	2.151	1.736	1.847
Highest-VIF Score		2.693	2.572	8.222	8.128	14.302	13.277	14.846	14.966	13.994	10.125	16.535	16.592	15.959	16.469
No of observations		500	500	500	500	100	100	100	100	100	100	100	100	100	100
Constant		32.457(.009)***	1.907(.000)***	16.874(.384)	1.696(.003)***	62.083(.923)	3.194(.056)**	18.732(.690)	0.522(.650)	39.22(.370)	2.084(.202)	-29.165(.515)	2.242(062)*	-104.76(.101)*	0.858(.464)
Board Size	+/-	-	-	-1.055(.023)**	-.035(.037)**	-.534(.642)	.015(.759)	-.724(.493)	-.045(.188)	-.831(.399)	-.033(.430)	-1.378(.269)	-.062(.138)	-2.568(.050)**	.000(.990)
NED	+	-	-	0.290(.009)***	-.001(.862)	.378(.180)	-.013(.330)	.391(.100)*	.001(.860)	.206(.452)	-.001(.820)	.468(.142)	.001(.924)	-.262(.403)	-.002(.812)
Independent NED	+	-	-	-.242(.010)***	.000(.975)	-.006(.979)	.006(.609)	-.265(.281)	.004(.503)	-.250(.217)	-.003(.872)	-.238(.369)	-.005(.509)	-.347(.150)	.000(.988)
Executive Directors	+/-	-	-	-0.287(.010)***	.001(.921)	-.377(.180)	.013(.338)	-.390(.099)*	-.000(.866)	-.208(.448)	.003(.834)	.462(.496)	-.001(.928)	-.260(.403)	.002(.818)
CEO Duality	-	-	-	5.367(.344)	.414(.062)*	2.877(.825)	.301(.642)	1.968(.878)	.512(.252)	-.203(.988)	.655(.278)	9.981(524)	.656(.235)	24.184(.07)*	.097(.825)
Board Meetings	+	-	-	2.066(.041)**	-.085(.031)**	3.425(.110)	-.204(.048)**	1.691(.535)	-.063(.469)	3.035(.238)	-.037(.744)	-1.045(.689)	-.046(.601)	.750(.798)	-.057(.502)
Director Shareholding	+	-	-	-.085(.094)*	-.001(.595)	-.080(.554)	.007(.264)	-.168(.180)	-.004(.352)	.140(.250)	.000(.864)	-.172(.197)	-.001(.904)	-.143(.246)	-.002(.618)
Institutional Shareholding	+	-	-	-.116(.088)*	-.001(.748)	-.119(.451)	-.004(.623)	-.007(.965)	.005(.374)	-.266(.096)*	-.006(.360)	-.324(.079)*	-.009(195)	.069(.692)	.006(.226)
Board Busyness	-	-	-	-1.086(.019)**	.023(.193)	-1.948(.086)*	.115(.031)**	-.990(.453)	-.041(.376)	-1.993(.092)*	-.038(.286)	.715(.5555)	.036(.400)	-.436(720)	-.002(.961)
Ethnic Diversity	+	-	-	-.030(.662)	.003(.287)	.005(.975)	.006(.465)	-.198(.223)	.003(.638)	.014(.923)	.007(.248)	-.102(.581)	.002(.763)	-.003(.601)	-.003(.601)
Gender Diversity	+	-	-	0.127(.253)	-.003(.457)	-.243(.336)	-.002(.893)	.183(.516)	-.010(.318)	.253(.281)	-.011(.306)	.044(.886)	-.014(.193)	.395(.155)	.016(.045)**
Board Interlocks	+	-	-	5.152(.027)**	-.071(.430)	9.745(.073)*	-.500(.054)**	1.675(.792)	.270(.209)	8.899(.126)	.191(.437)	-2.744(.655)	-.135(.519)	5.831(.389)	.029(.884)
Audit-Committee Independence	+	-	-	.102(.383)	.004(.351)	-.237(.394)	-.007(.648)	.386(.203)	.007(.461)	.007(.982)	.003(.821)	.286(.377)	.008(.428)	.468(.238)	.004(.628)
Gearing	+/-	-	-	-.067(.056)**	.001(.413)	.046(.593)	.003(.573)	-.039(.595)	.003(.309)	-.029(.722)	.001(.870)	-.080(346)	.000(.999)	-.178(.036)**	.001(.823)
Sales Growth	+	2.466(.368)	.005(.001)***	1.961(.483)	.005(.001)***	1.733(.790)	.011(.022)**	1.049(.874)	.011(.000)***	4.288(.573)	-.003(.622)	5.512(.470)	.000(.834)	8.483(.354)	.002(.534)
Dual-listing	+	-6.947(.021)**	-.149(.196)	-4.558(.163)	-.182(.151)	-2.616(.732)	-.226(.463)	.260(.953)	-.345(.160)	-2.803(.692)	.065(.920)	-3.008(728)	.028(.877)	-20.01(.027)**	-.376(.137)
Audit Firm Size	+	-4.706(.188)	-.457(.001)***	-9.314(.016)***	-.368(.016)**	-8.064(.397)	-.160(.749)	-16.591(.080)*	-.738(.029)**	-6.563(.474)	-.431(.352)	-16.883(.082)*	-.440(.203)	-1.183(.899)	.159(.584)
Firm Size	+	8.772(.004)***	.307(.001)***	10.987(.000)***	.396(.000)***	10.7043.139	.170(.612)	9.650(.216)	.520(.018)**	11.417(.118)	.378(.118)	14.322.077)*	.226(.353)	2.393(.788)	.250(.212)
Total Asset	+/-	-6.239(.001)***	-.000(.114)	-5.007(.037)**	-.000(.394)	-10.615(.094)*	.000(.918)	-7.465(.220)	.000(.546)	-6.364(.234)	.000(.960)	-6.000(.298)	.000(.825)	7.888(391)	-.000(.072)*
Market Value	+	0.000(.000)***	0.000(.000)***	0.000(.000)***	.000(.000)***	7.971(.089)*	.000(.121)	9.060(.035)**	.000(.011)**	4.513(.284)	.000(.016)***	12.429(.010)***	.000(.007)***	11.602(.166)	.000(.009)***
Capital Expenditure	+/-	-.475(.736)	-.000(.004)***	-1.145(.4467)	-.000(.001)***	-.849(.804)	-.000(.601)	-2.368(.468)	-.000(.105)*	2.858(.384)	-.000(.187)	-4.326(.250)	-.000(.058)**	1.114(817)	-.000(.243)
Basic Material		-19.409(.000)***	-.165(.230)	-21.111(.000)***	-.104(.500)	-17.264(.066)*	.210(.644)	-20.084(.022)**	.582(.047)**	-20.906(.013)**	-.430(.318)	-23.782(.021)**	-.665(.076)*	-16.013(.122)	-.516(.096)*
Consumer Goods		2.615(.539)	.307(.063)*	4.563(.293)	.346(.043)**	16.136(.127)	.316(.542)	13.492(.182)	.946(.006)***	2.936(.750)	.543(.203)	1.799(.866)	.154(.677)	-9.677(.387)	-.060(858)
Finance Industry		-2.201(.502)	-.615(.000)***	-2.83(.524)	-.564(.000)***	-1.475(.867)	-.601(.147)	-1.709(.840)	-.151(.580)	-7.482(.359)	-.655(.065)*	-3.849(.692)	-.78(.012)***	-.699(.014)***	-.699(.014)***
Industrial		-8.166(.018)***	-.290(.028)**	-6.039(.096)*	-.224(.111)	.063(.991)	-.391(.358)	1.294(.874)	.111(.686)	-11.851(.151)	-.301(.406)	-0.767(.935)	-.300(.358)	-14.890(.102)*	-.508(.068)*
Telecoms/Technology		7.853(.061)*	-.128(.436)	6.450(.161)	-.082(.653)	11.149(.311)	-.558(315)	10.939(.324)	.421(.257)	3.181(.765)	-.041(.298)	8.492(.474)	-.122(.770)	-.220(.983)	-.178(.585)
Year 2010		-.300(925)	.150(.226)	-.469(.887)	.157(.208)	-	-	-	-	-	-	-	-	-	-
Year 2012		-.501(.875)	.053(.667))	-.860(.785)	.043(.720)	-	-	-	-	-	-	-	-	-	-
Year 2013		-5.594(.080)*	.031(.801)	-5.256(.098)*	.013(.918)	-	-	-	-	-	-	-	-	-	-
Year 2014		-7.819(.015)***	-.080(.514)	-6.691(.039)**	-.101(.423)	-	-	-	-	-	-	-	-	-	-

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. More so, to avoid dummy variable trap, year 2011 and consumer services/health care industry are excluded from the regression analysis. They are both used as base year dummy and base industry dummy for comparison reasons.

NEDs on corporate boards, firm accounting returns increase. This finding is similar to the findings of other scholars (e.g. Kyereboah-Coleman, 2008, Kyereboah-Coleman and Biekpe, 2006b, Mangena and Chamisa, 2008), who found a positive relationship between NEDs and accounting returns. The insignificant results of market returns and proportion of NEDs are similar to the results found in South Africa by Ntim (2009) and in Nigeria (Sanda et al. (2005). Following from the results, hypothesis 1a, which states that there is a statistically positive relationship between NEDs and firm accounting returns, is accepted, but, based on market returns, this hypothesis is not accepted.

Relative to the proportion of EDs and contrary to Nigerian results, there is a negative and significant relationship between the proportion of EDs and firm performance based on accounting returns at 1% ($p \leq 0.001$). On the other hand, the proportion of EDs is positively associated with market returns with insignificant statistics. The negative association between ROCE and EDs is also significant in 2011 at 10% ($p \leq 0.10$). This negative result on accounting returns doesn't support the resource dependency argument that EDs are there to fulfil the task of meeting the internal resource dependency requirements of the firm (Bryant and Davis, 2012, Hillman et al., 2000), and as such their presence on boards doesn't enhance firm financial outcomes. But the results support agency theory argument that increasing the number of inside directors increases agency cost and adversely impacts on firm financial performance. In addition, the results refute stewardship theory argument that increase in firm financial performance is associated with EDs presence on corporate boards as their interests are asymptotic to those of shareholders (Nicholson and Kiel, 2007). Inferring from this result, hypothesis 1b, which states that there is significant positive relationship between the proportion of EDs and firm financial performance, is not accepted.

Similar to the results with regard to EDs, the proportion of independent non-executive directors (INEDs) is negatively associated with accounting returns (ROCE) but positively related to market returns (Q-ratio), but only the results of the former are significant at 1% ($p \leq 0.001$). The results based on accounting return suggest that the presence of INEDs on South African boards adversely impacts on firm performance. Concluding from this result, hypothesis 1c, which states that there is a statistical positive relationship between the proportion of INEDs and firm financial performance, is not accepted. Hence, the result does not support King III recommendation for INEDs to be a majority of NEDs. This result is also similar to the results of Nigeria (8.3.1). This may suggest that firms may be appointing

independent directors for the sake of applying King III requirements without making sure that such INEDs possess appropriate skills needed to perform board functions.

Contrary to the results of INED, the separation of the positions of CEO and chairperson showed a positive association with both accounting returns (ROCE) and market returns (Q-ratio), but only the finding established with Q-ratio is statistically significant at 10% (p ≤0.10). Nonetheless, the result based on accounting returns is statistically significant and positive related to CEO/Chairman position in 2014 at 10% (p ≤0.10). The insignificant results with accounting return based on the pooled sample are alike with the findings of other researchers (e.g. Baliga et al., 1996, Pearce and Zahra, 1992, Pearce and Zahra, 1991). Nevertheless, the significant results to ROCE support hypothesis two, which states that there is a statistically significant positive relationship between CEO–chairman separation and accounting returns. These results support the argument that, with separation of leadership, the board's ability to monitor and control management increases, which consequently leads to enhanced board independence, and thus shrinking agency conflict and information asymmetry, which has a positive impact on shareholders' value maximisation goal (Nicholson and Kiel, 2007, Kula, 2005).

Furthermore, frequency of board meetings showed positive association with accounting returns (ROCE) but negative relationship with market returns, both statistically significant at 5% (p ≤0.05). The results based on market returns are similar to the findings reported by Ntim (2009,pp.263) in South Africa, but Ntim had insignificant results. More so, the results based on accounting returns lend support to the results of Karamanou and Vafeas (2005) and Mangena and Tauringana (2006), who found a positive relationship between accounting returns and frequency of board meetings. On the other hand, the negative results between frequency of board meetings and market return are similar to those found by Vafeas (1999), who studied a sample of 307 US-listed firms over the period 1990–1994. The results based on market returns suggest that frequent board meetings may not be essentially useful as directors' attention given to various formalities and presentation of management reports during meetings reduces the amount of time they spend effectively to monitor management on behalf of shareholders (Vafeas, 1999, Lipton and Lorsch, 1992). However, the results based on accounting returns suggest frequent board meetings enhance the quality of board decision-making, managerial monitoring and control, which improves firm accounting returns. Considering these results, hypothesis five (H_5), which states that there is a

statistically significant positive relationship between frequency of board meetings and firm financial performance, is accepted with respect to ROCE but rejected in relation to Q-ratio.

Like the Nigerian results, board interlocks exhibited a significant positive relationship with accounting returns at 5% ($p \leq 0.05$) but showed an insignificantly negative association with market returns. The positive relationship between board interlocks and ROCE is positive across all the firm years but only significant in 2010 at 5% ($p \leq 0.05$), whereas the negative relationship with Q-ratio was only significant in 2010 at 5% ($p \leq 0.05$). The significant results established with accounting return (ROCE) lend support to the findings of Pombo and Gutiérrez (2011), who studied board interlocks and firm performance using 335 Colombian firms for the period 1996–2006. They reveal a positive relationship between board interlocks and firm performance (using ROA as proxy). In relation to the market returns, the significant results in 2010 are similar to the results reported by Fich and Shivdasani (2006), who found a negative statistically significant relationship with interlocks (using market-to-book ratio as a proxy). Inferring from the results, hypothesis 7a, which states that there is a statistically significant positive relationship between board interlocks and firm financial performance, is accepted with respect to accounting return (ROCE) but rejected with respect to market return (Q-ratio). Comparable with the Nigerian results, the South African findings indicate there is a significant negative relationship between board busyness and ROCE in the pooled sample at 5% ($p \leq 0.05$) and in 2010 at 10% ($p \leq 0.10$) and 2012 at 5% ($p \leq 0.05$). Conversely, board busyness showed a positive relationship with Q-ratio though insignificantly in the pooled sample but significantly in 2010 at 5% ($p \leq 0.05$).

The results based on accounting returns suggest that firms with directors who sit on other boards and attend equal numbers of meetings have poor performance than their counterparts without such levels of interactions. However, the results based on market return may suggest that investors appreciate firms that have directors who spend equal time and resources working for other firms as a sign of skill, knowledge and willingness to work. Deducing from these findings, hypothesis 7b, which states that there is a statistically significant negative relationship between board busyness and firm financial performance, is accepted with respect to accounting return (ROCE) but rejected with respect to market return (Q-ratio).

Furthermore, similar to the results reported for Nigeria, director shareholding (measured by the number of shares held by both executive directors and non-executive directors) shows a

negative association to both accounting and market returns but significant only with accounting returns at 10% (p ≤0.10). This negative relationship contradicts agency theory premise that increasing ownership of managers/board in firms reduces agency cost and enhances firm performance. In fact, similar to Nigeria, the results suggest the arguments of the entrenchment theory (Dwivedi and Jain, 2005), which contends managers and directors with high levels of ownership tend to focus more on maximising the market share rather than profit maximisation. The results are in line with the findings of scholars (e.g. Dwivedi and Jain, 2005) who reported that directors' equity ownership has negative effect on firm value. However, the results contradict the results of Ntim (2012a), who reported a positive association between the two variables in South Africa. More so, insignificant relationship with market returns is consistent with the findings of Weir and Laing (2001) and Faccio and Lang (2002), who found no statistically significant effect of directors' shareholding and firm market value. Interpreting from these findings, hypothesis 9a, which states that there is a statistically significant negative relationship between director shareholding and firm financial performance, is accepted with regard to accounting returns but rejected with respect to market returns.

Similar to preceding results and contrary to the results reported for Nigeria, institutional shareholding in South Africa showed a negative significant association with accounting returns (ROCE) at 10% (p ≤0.10) but a negative and insignificant relationship with market returns (Q-ratio). These results are contradictory to the results of Elyasiani and Jia (2010), who reported that institutional shareholders had a positive effect on firm performance through the reduction of information asymmetry. These results suggest that investors do not value institutional shareholders positively and therefore institutional shareholders may not be a mechanism to reduce agency cost. Considering these results, hypothesis 9b, stating that there is a statistically significant positive relationship between institutional shareholding and firm financial performance, is not accepted.

Furthermore, ethnic diversity showed a negative relationship with accounting returns but a positive association to market returns, though both results are insignificant. These results though insignificant lend support to Ntim (2014) results in South Africa, which indicated that board ethnic diversity is positively linked to market valuation. However, the results based on accounting returns suggest that directors who possess majority status have a tendency to exert an unequal amount of influence during board decision-making processes. In fact, this result

suggests the South African government's introduction of the Broad-Based Black Economic Empowerment Codes of Good Practice as guidelines to ensure firms' compliance with black empowerment by increasing black directors in corporate boards may not be yielding significant impacts as increasing black directors does not increase accounting returns. However, with regard to market returns, the results may suggest that the market values firms compliant with Broad-Based Black Economic Empowerment Codes of Good Practice better than non-compliant firms. Therefore, the inconclusive results suggest that hypothesis 6, which states that there is a statistically significant positive relationship between board ethnic diversity and firm financial performance, is not supported irrespective of the performance measure.

Like the results of ethnic diversity, the results based on gender diversity showed a positive and insignificant association with accounting return and negative insignificant association with market return (Q-ratio). Nevertheless, the results based on Q-ratio are positively and statistically significant in 2014 at 0.5% (p ≤0.05). These insignificant results are similar to those reported by Rose (2007) and Bøhren and Strøm (2010). The results for ROCE (though insignificant) suggest that female directorship enhances the execution of board strategic function and increases accounting returns (Fondas, 2000). On the other hand, the positive and significant results in 2014 with respect to Q-ratio support the findings of Carter et al. (2003).

These insignificant results may suggest increasing women directors in corporations (as enshrined in the South African Commission for Gender Equality Act of 1996 created post-apartheid South Africa, incorporated in the 2008 corporate act and in King I, II, III corporate governance codes) to increase women's participation in the economy may not be yielding a significant impact on firms' value creation. Hence, as it has been argued, if women are appointed to boards just to motivate societal pressure for greater equality in gender (Ntim, 2015), as may be the case in South Africa, then female representation on boards will have a negative impact on firm performance. However, the results suggest and support the arguments which have been put forward by some scholars (e.g. Hillman et al., 2007, Ntim, 2015) that women's opinions and views in corporate boards are marginalised as a result of their limited representations on male-dominated boards. Thus, hypothesis four (H_4,), which states that there is a statistically significant positive relationship between board gender diversity and firm financial performance, is rejected.

Relating to gearing (debt-to-equity ratio), findings in South Africa indicate that there is an inverse significant relationship between gearing and firm accounting returns at 10% (p ≤0.10) in the pooled sample and in 2014 at 5% (p ≤0.05). However, there is a positive insignificant association between gearing and market returns in both the pooled sample and all five firm years. The negative significant relationship between gearing and accounting return supports the findings of Ntim (2009,pp.277) in South Africa. This suggests that firms that are more profitable tend to prefer higher equity than debts as higher equity offers managers financial flexibility. However, the positive relationship between gearing and market returns (though insignificant) lends support to the findings of Fosu (2013) in South Africa using firm-level data for 257 firms over 12 years. The positive relationship between gearing and market return (though insignificant) may suggest that the markets view highly geared firms positively as it can reduce agency conflict, which comes as a result of 'free cash flows' mismanagement by opportunistic agents (see Jensen, 1986a,pp.323). Inferring from the results thereof, hypothesis 8 (H_8), which states that there is a significant negative relationship between firm gearing and firm financial performance, is accepted with respect to accounting returns but rejected based on market returns.

Last of all, contrary to Nigerian results, audit committee independence showed a positive relationship with both market return and accounting return but not significantly both in the pooled sample and individual firm years. Thus, the results (though insignificant) may suggest that the presence of independent directors on audit committees of South African firms enhances both accounting and market return. However, hypothesis 11, which states that there is a statistically significant positive relationship between audit committee independence and firm financial performance, is not accepted regardless of the performance measure.

Similar to Nigeria, the change in significance from cross-sectoral to panel estimates for some of the internal governance variables on firm financial performance implies that the latter adds the marginal impacts of respective internal governance variables from individual firm year to improve aggregate effect over time. More so, generally, the impact of the 14 governance mechanisms on firm accounting returns in South Africa is generally positive and more significant compared to the negative associations with market returns. This may suggest the investors may not value corporate governance mechanisms positively. More so, the results imply maturation of governance institutions in South Africa does not necessarily lead to improved valuation of firms with good CG internal mechanisms.

The next section discusses the results based on the sub-indices of the Nigerian and South African corporate governance indices (NICGI and SACGI) respectively.

8.4 Empirical Results Based on the Compliance Index Model (CIM) Sub-Indices of NICGI and SACGI

Table 20 below contains the regressions results for Shareholder–NICGI and Stakeholder–NICGI for Nigeria, whereas table 21 shows the results of Shareholder–SACGI and Stakeholder–SACGI for South Africa. As noted in Chapter 5, these indices are a breakdown of NICGI and SACGI respectively into two sub-indices. The shareholder sub-index represents provisions in King III (for South Africa) and Nigeria's SEC 2011 corporate governance code which seek to reduce agency cost and increase shareholder value. Meanwhile the stakeholder sub-index captures the contextual provisions of the Nigerian affirmative action and stakeholder corporate governance provisions and the South African Inclusive action and stakeholder corporate governance provisions. The splitting of corporate governance provisions in each country is consistent with prior studies in corporate governance (e.g. Durnev and Kim, 2005, Ntim et al., 2012, Ntim, 2013c, Ntim, 2013a). For instance, Durnev and Kim (2005) split their composite index into transparency, shareholder protection, and social awareness sub-indices. Meanwhile, Ntim et al. (2012) separated a composite index in South Africa into shareholder and stakeholder sub-indices. The composite index is split into various sub-indices to examine empirically if the two sub-indices in both countries affect firm financial performance. This is premised from the theoretical and scholarly argument that the inclusion of contextual specific issues and stakeholder requirements in corporate governance codes to be complied with by listed firms may impose additional cost which may be detrimental to a firm's financial performance (Ntim, 2009, Ntim et al., 2012, Ntim, 2013c). From the preceding argument, it is expected that compliance with the shareholder sub-index is likely to have a positive impact on firm financial performance since these provisions are centred on protecting shareholders and increasing shareholders' value. However, in same rationale, it is expected that compliance with the stakeholder sub-index will negatively affect firm performance.

The subsequent section reports the results of the two sub-indices in each country.

8.4.1 Nigerian Empirical Results – Shareholder (Shareholder–NICGI) and Stakeholder (Stakeholder–NICGI) Compliance Index

As highlighted above, the Nigerian composite compliance index (NICGI) is divided into two sub-indices. The Shareholder–NICGI captures traditional corporate governance requirements aimed at increasing shareholders' value by reducing agency cost. The Shareholder–NICGI sub-index is composed of 61 provisions, which include provisions for: board composition and management (17 provisions), audit committee composition and function (ten provisions), risk governance (six provisions), governance and remuneration committee composition and function (12 provisions), maintaining shareholder relationships (five provisions), accounting and reporting (11 provisions). On the other hand, the Stakeholder–NICGI is composed of 14 contextual affirmative actions and stakeholder provisions. These stakeholder affirmative provisions include: (i) dealings with stakeholders (STKDEAL), (ii) outcome of stakeholder dealings (OUTSTK), (iii) dealings with environmental issues (INV), (iv) health and safety (HSP), (v) HIV AIDS and diseases (DISP), (vi) employment equity (EMP), (vii) gender diversity (GENDIV1), (viii) physically challenged persons (PCP), (ix) staff diversity and number (STADIV), (x) corruption policy (CORRP), (xi) social investment policy (SIP), (xii) stakeholder communication (STKCOM), (xiii) code of ethics (COE), (xiv) laws and standards (LAS).

The results based on both Shareholder–NICGI and Stakeholder–NICGI are reported in table 20 below. For easy comparison, the results based on NICGI are also reported in the table. Columns 3 and 4 of table 20 report the results of the Shareholder–NICGI; columns 5 and 6 report the results of Stakeholder–NICGI; and columns 7 and 8 report the OLS estimates of NICGI. Note that regression of control variables (Model I) is not reported in the table because the results are the same as those estimated in the OLS and discussed in 8.2.2. Therefore, the reported results in table 20 are based on Model II, which is the regression of Shareholder–NICGI and Stakeholder–NICGI individually plus the control variables.

From table 20, the F-value of 5.405 (.000) *** for ROCE and 8.887(0.000***) for Q-ratio indicates that the regression based on the Shareholder–NICGI plus control variables is statistically significant at 1% with adjusted R^2 of 0.165 and 0.262 respectively. Hence, the null hypothesis that the regression coefficient of Shareholder–NICGI and control variables is

zero is rejected. Consequently, Shareholder–NICGI and control variables explain 16.5% of the variations in the firms' accounting returns (ROCE) and 26.2% of variations in market returns (Q-ratio). This also indicates that with the addition of Shareholder–NICGI to the control (Model II), there is improvement in the degree of variation by 1% in accounting return (ROCE), but with a slight increase in the degree of variation with respect to market return (Q-ratio) by 0.4%. This thus indicates that the quality of shareholder corporate governance disclosures (Shareholder–NICGI) explains variations in the accounting returns by 1% and 0.4% of the market returns for listed firms in Nigeria between 2011–2015.

The adjusted R^2 for the Shareholder–NICGI is similar to those reported in columns 7 and 8 of table 16 for NICGI. However, comparing the results based on Shareholder–NICGI and NICGI shows the former (Shareholder–NICGI) has a slightly weaker ability in explaining variations in the market returns (adjusted R^2 is 26.2) than the latter (26.4%) by 0.2%. Similarly, with respect to accounting returns, the regression results based on Shareholder–NICGI (adjusted R^2 is 16.5%) are smaller than those of the NICGI (adjusted R^2 is 17.1%) by 0.6%. Thus, NICGI has a better explanatory power in explaining variations in accounting and market returns than Shareholder–NICGI. Specifically, compliance with integrated governance provisions (NICGI) explains variations in firm performance better than compliance solely to shareholder provisions. Furthermore, the coefficients of the Shareholder–NICGI under both Q-ratio 0.014(.044**) and ROCE 0.212 (.014***) are positive and statistically significant at 5% ($p \leq 0.05$) and 1% ($p \leq 0.01$) respectively. The positive relationship between the Shareholder–NICGI and both accounting and market returns supports the theoretical expectations that compliance with provisions that protect shareholders' value reduces agency cost and increases firm performance.

The significant positive relationship between Shareholder–NICGI and both performance variables supports hypothesis 10b, which states that there is a statistically significant positive relationship between the compliance with the shareholder provisions of SEC 2011 corporate governance code and firm financial performance. This implies that firms which are more compliant with shareholder provisions of SEC 2011 perform better than less compliant firms regardless of the performance measure. More so, this shows firms who comply with the NICGI also comply with shareholder provision of SEC 2011 corporate governance code.

Table 20: Results of Sub-Indices of NICGI–Compliance Index Model Based on Accounting Performance Measure (ROCE) and Market Performance Variable (Q-ratio)

	Exp Sign	Results of Shareholder–NICGI		Results of Stakeholder–NICGI		OLS Estimates of NICGI	
		ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio
R-Square (R^2)		.203	.296	.240	.308	.208	.294
Adjusted R^2		.165	.262	.204	.275	.171	.264
F-value		5.405(.000) ***	8.887(.000)***	6.678(.000)***	9.415(.000)***	5.568(.000) ***	8.947(.000) ***
Standard Error		21.208	1.529	20.717	1.512	21.143	1.524
Durbin–Watson		1.021	1.068	1.000	1.131	.970	1.074
No of observations		400	400	400	400	400	400
Constant	+	-8.477(.194)	2.212(.000)***	3.853(.588)	2.746(.000) ***	-9.070(.133)	2.334(.000) ***
NICGI	+	-	-	-	-	.241(.004) ***	.013(.043)**
Shareholder–NICGI	+/-	.212(.014)***	.014(.044)**	-	-	-	-
Stakeholder–NICGI	+/-	-	-	.155(.010)***	.013(.002)***	-	-
Sales Growth	+	.138(.012)***	.001(.802)	.130(.015)***	.001(.780)	.139(.011) ***	.001(.803)
Dual Listing	+	2.111(.684)	-0.572 (.126)	1.558(.759)	-.637 (.086)*	1.725(.739)	-.581(.119)
Audit Firm Size	+	9.148(.001)***	.652(.001)***	8.294(.003)***	.524(.010)***	8.500(.002) ***	.631(.002) ***
Firm Size	+/-	.122(.967)	.659(.007)***	-.255(.939)	.549(.024)**	-.571(.850)	.639(.008)***
Capital Structure (Gearing)	+/-	-.121 (.000)***	.003(.131)	-.110(.001)***	.003(.102)*	-.12(.000) ***	.004(.128)
Total Asset	+	.000(.674)	-.000(.001)***	-.000 (.059)**	-.000(.000)***	.000(.673)	-.000(.003)***
Market Value	+/-	.000(.111)	.000(.000) ***	.000(.035)**	.000(.000)***	.000(.119)	.000(.000) ***
Capital Expenditure (CAPEX)		-.000(.492)	-.000(.048)**	.000(.001)***	-.000(.027)**	-.000(.517)	-.000(.047)**
Agriculture/Consumer Goods		12.916(.000)***	.937(.002)***	7.917(.040)**	.798(.005)***	12.460(.000)***	.905(.002) ***
Finance Industry		1.414(.669)	-.479 (.090)*	.271(.943)	-.585(.036)**	.770(.817)	-.50(.074)*
ICT/Real Estate		10.581(.028)**	.574(.118)	9.865(.043)***	.574(.110)	10.583(.027)**	.569(.120)
Industrial/Conglomerate		1.952(.711)	-.386 (.339)	-2.648(.620)	-.459 (.240)	1.741(.740)	-.407(.309)
Natural Resource/Oil & Gas		19.678(.000)***	.432(.234)	16.274(.001)***	.413(.237)	19.729(.000)***	.420(.244)
Year 2011		-4.869(.149)	.088(.715)	-3.994(.226)	.101(.672)	-4.699(.163)	.089(.711)
Year 2013		-1.949(.569)	.257(.296)	-1.569(.638)	.250(.304)	-2.038(.550)	.257(.295)
Year 2014		-4.546(.186)	.129(.522)	-4.216(.207)	.117(.629)	-4.750(.165)	.130(.598)
Year 2015		-7.232(.042)**	.403(.117)	-6.482(.057)**	.396(.111)	-7.630(.031)**	.408(.110)

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. More so, to avoid dummy variable trap, year 2012 and health care/consumer goods industry are excluded from the regression analysis. They are both used as base year dummy and base industry dummy for comparison reasons. NICGI is the Nigerian Corporate Governance index. Shareholder–NICGI is composed of 61 provisions of SEC 2011 code aimed at protecting shareholders' interest. Stakeholder–NICGI is composed of 14 provisions of SEC 2011 code to capture contextual stakeholder provisions.

These results are consistent with Ntim (2009), Ntim et al. (2012), Ntim (2013c), who reported a positive relationship between compliance with shareholder provisions of corporate governance code and firm performance in South Africa.

With respect to Stakeholder–NICGI, from table 20, columns 5 to 6, the F-value 6.678(.000) *** for ROCE and 9.415(.000)*** for Q-ratio shows that the regression based on the Stakeholder–NICGI plus control variables is statistically significant at 1% with adjusted R^2 of 0.204 and 0.275 respectively. As a result, the null hypothesis that the regression coefficient of the Stakeholder–NICGI and control variables is zero is not accepted. Thus, the Stakeholder–NICGI plus the control variables explains 20.4% variations in firms' accounting returns (ROCE) and 27.5% variations in market returns (Q-ratio) in Nigeria. Similar to the results reported for the Shareholder–NICGI, with the addition of Stakeholder–NICGI to the control variables (Model II), there is a moderate increase in the degree of variation by 4.9% with respect to accounting returns (ROCE) and 1.7% increase with respect to market measure (Q-ratio). Hence compliance with contextual/stakeholder affirmative provisions in Nigeria (Stakeholder–NICGI) explains 4.9% variations in the accounting returns and 1.7% variations in market returns for listed firms between 2011–2015.

Comparatively, the adjusted R^2 for the Stakeholder–NICGI is similar to those reported in columns 3 to 4 for Shareholder–NICGI and 7 to 8 for NICGI in table 20. Comparing the regression results based on the Stakeholder–NICGI with those reported under NICGI and Shareholder–NICGI shows that regression on the Stakeholder–NICGI has a stronger ability in explaining variations in the market returns (adjusted R^2 is 27.5%) than both NICGI (26.4%) by 1.1% and Stakeholder–NICGI (adjusted R^2 is 26.2) by 1.3%. Correspondingly, with respect to accounting returns, the regression results based on Stakeholder–NICGI (adjusted R^2 is 20.4%) are higher than those of the NICGI (adjusted R^2 is 17.1%) by 3.3% and much higher than Shareholder–NICGI (adjusted R^2 is 16.5%) by 3.9%. This indicates that Stakeholder–NICGI has a higher explanatory power in determining changes in both accounting and market returns than NICGI and Shareholder–NICGI.

Similar to the NICGI and Shareholder–NICGI, the coefficients of Stakeholder–NICGI under both ROCE 0.155 (.002 ***) and Q-ratio 0.013 (.002 ***) are positive and statistically significant at 1% (p≤0.001). This implies that the theoretical expectations that compliance with stakeholder affirmative provisions has an adverse effect on firm accounting returns are

not supported. Hence, firms compliant with stakeholder affirmative provisions of the SEC perform better than firms who do not comply irrespective of the performance measure used. This may suggest that firms who comply with both NICGI and Shareholder–NICGI tend to comply with the stakeholder provision of the SEC 2011 corporate governance code. The results based on the contextual stakeholder affirmative provisions of the SEC 2011 corporate governance code (NICGI) are consistent with the results of Ntim (2009), Ntim et al. (2012), Ntim (2013c). Therefore, the significant positive relationship between Stakeholder–NICGI and both performance variables supports hypothesis 10c, which states that there is a statistically significant positive association between compliance with stakeholder provisions of the SEC 2011 corporate governance code and firm performance. These results show disclosing transparent information on stakeholder engagements in Nigeria improve both their accounting returns and market valuation by reducing political, social and environmental cost. Similarly, firms increase in disclosure of stakeholder-inclusive actions signals adaption to societal/institutional norms (local isomorphism). This contextual adaptation curbs environmental vulnerability and improves firm returns.

8.4.2 South Africa Empirical Results – Shareholder (Shareholder–SACGI) & Stakeholder (Stakeholder–SACGI) Compliance Index

Similar to decomposition of the Nigerian index, the South African composite index (SACGI) is separated into two sub-indices. The Shareholder–SACGI captures the conventional corporate governance provisions borrowed from the Anglo-American corporate governance model with the premise of reducing agency cost and increasing shareholders' return. The South African Shareholder–SACGI is composed of 71 provisions. The 71 provisions fall under the following categories: (i) ethical leadership and corporate citizenship (4 provisions), (ii) board composition and management (19 provisions), (iii) remuneration committee composition and function (10 provisions), (iv) accounting and auditing/audit committee (11 provisions), (v) governance of risk (9 provisions), (vi) governance of information technology (4 provisions), (vii) compliance with laws, rules, codes and standards (3 provisions), (viii) internal audit (3 provisions), (ix) integrated reporting and disclosure (8 provisions).

Similar to Nigeria Stakeholder-NICGI, the South African Stakeholder–SACGI has 13 contextual inclusive actions and stakeholder provisions. The 13 provisions of Stakeholder–

SACGI fall under two sub-headings. The first is Governing Stakeholder Relationships, with five provisions: (i) managing relationships with each stakeholder grouping (STAR), (ii) outcome of stakeholder dealings (OUTSTK), (iii) equitable treatment of shareholders (ETS), (iv) minority shareholders' protection (MSP), (v) dispute resolution. The second sub-heading is integrated sustainability reporting, with the eight remaining provisions: (vi) broad-based black economic empowerment (BEE), (vii) employment equity (EMP), (viii) HIV/AIDS pandemic, (ix) implementing rules and regulations on the environment (RREN), (x) ethnic board diversity (BODDIV), (xi) gender diversity (GENDIV1), (xii) community support and other corporate social investments (CSCSI), (xiii) code of ethics (COE).

The results for Shareholder–SACGI and Stakeholder–SACGI sub-indices are shown in table 21 above. Like Nigeria, for easy comparison, the regression results based on the quality of internal corporate governance structures (SACGI) are reported in table 21 alongside those of Shareholder–SACGI and Stakeholder–SACGI. Columns 3 and 4 of table 21 report the regression results of Shareholder–SACGI, whereas columns 5 and 6 show the results of the Stakeholder–SACGI, and finally columns 7 and 8 report the OLS estimates of SACGI (which have been reported and discussed in section 8.2.2, table 17). Similarly, the regression of control variables (Model I) is not reported in table 21 since the results are similar to those estimated for SACGI on table 17 and discussed in 8.2.2. Therefore, the reported results in table 21 are grounded on Model II, which is the regression of Shareholder–SACGI and Stakeholder–SACGI in addition to control variables.

Reading from table 21 above, the F-value of 13.634(0.000***) and 11.4000(0.000***) for Q-ratio and ROCE indicates that the regression based on Shareholder–SACGI in addition to control variables is statistically significant at 1% with adjusted R^2 of 0.313 and 0.273 respectively.

Therefore, the null hypothesis that the regression coefficient of the Shareholder–SACGI plus the control variables is zero is not accepted. As a result, Shareholder–SACGI and the extraneous variables explain 31.3% variations in firms' market returns (Q-ratio) and 27.3% of firms' accounting returns (ROCE). This implies with the addition of Shareholder–SACGI to the extraneous variables (Model II), the degree of variation increases by 10.1% with respect to market return (Q-ratio) and 8.4% with respect to accounting returns (ROCE).

Table 21: Results of Sub-Indices of SACGI–Compliance Index Model Based on Accounting Performance Measure (ROCE) and Market Performance Variable (Q-ratio)

	Exp Sign	Results on Shareholder–SACGI		Results on Stakeholder–SACGI		OLS Estimates of SACGI	
		ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio
R-Square (R^2)		.299	.338	.288	.288	.223	.246
Adjusted R^2		.273	.313	.261	.262	.194	.217
F-value		11.4000(.000)***	13.634(.000)***	10.808(.000)***	10.824(.000)***	7.67(.000) ***	8.70(.000)***
Standard Error		22.166	0.808	22.340	.838	23.328	.869
Durbin–Watson		1.075	1.079	1.680	1.045	1.055	1.041
Highest VIF Score		5.049	3.473	4.998	3.401	2.057	2.022
No of observations		500	500	500	500	500	500
Constant	+	10.136(.495)	2.013(.000)***	31.545(.020)**	1.168(.004)***	8.099(.55)	2.61(.000) ***
SACGI	+	-		-		.318(.05) **	-.013(.038)**
Shareholder–SACGI	+/-	0.414(.007)***	-0.009(.073)*	-		-	-
Stakeholder–SACGI	+/-	-	-	0.067(.547)	-.007(.086)*	-	-
Sales Growth	+	0.070(.058)**	.004(.007)***	0.074(.048)**	.082(.003)***	.072(.065)*	.005(.001)***
Dual Listing	+	-6.639(.025)**	-0.129(.224)	-6.566(.028)**	-0.123(.266)	-8.322(.007)***	-.144(.209)
Audit Firm Size	+	-8.064(.032)**	-0.525(.000)***	-7.459(.048)**	-0.591(.000)***	-9.972(.007) ***	-.429(.002)***
Firm Size	+/-	1.120(.801)	-0.286(.035)**	1.712(.702)	-0.349(.012)***	5.369(.026)**	.345(.000)***
Capital Structure (Gearing)	+/-	-0.076(.018)***	-0.001(.437)	-0.072(.024)**	.001(.516)	-.107(.002) ***	.001(.457)
Total Asset	+	-.000(.001)***	-.000(.693)	-0.000(.003)***	-.000(.576)	-.000(.18)	-.000(.171)
Market Value	+/-	0.000(.001)***	.000(.000)***	.000(.000)***	.000(.000)***	.001(.035)**	.000(.000)***
Capital Expenditure (CAPEX)		-.000(.572)	-.000(.147)	-0.000(.991)	-.000(.027)**	.000(.700)	-.000(.003)***
Basic Material		-21.174(.000)***	-0.160(.212)	-20.292(.000)***	-0.185(.167)	-22.862(.000) ***	-.104(.461)
Consumer Goods		1.333(.753)	0.179(.247)	2.924(.490)	0.140(.377)	3.653(.412)	.355(.033)**
Finance Industry		-.0.690(.828)	-0.779(.000)***	-1.218(.709)	-0.629(.000)***	-2.488(.458)	-.624(.000)***
Industrial		-8.672(.011)***	-0.380(.002)***	-8.113(.020)**	-0.426(.001)***	-8.373(.020)**	-.236(.078)*
Telecoms/Technology Industry		6.190(.147)	-0.004(.978)	6.697(.109)*	-0.072(.655)	4.476(.312)	-.097(.555)
Year 2010		2.061(.523)	0.071(.547)	0.276(.931)	0.118(.322)	1.371(.686)	.093(.462)
Year 2012		-1.031(.744)	0.040(.728)	-0.312(.922)	0.025(.831)	-.882(.791)	.082(.509)
Year 2013		-6.587(.039)**	-0.010(.931)	-5.528(.084)*	-0.024(.839)	-6.551(.053)**	.074(.556)
Year 2014		-8.336(.008)***	-0.022(.854)	-7.414(.022)**	-0.022(.855)	8.644(.011)***	-.034(.790)

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. More so, to avoid dummy variable trap, year 2011 and consumer services/health care industry are excluded from the regression analysis. They are both used as base year dummy and base industry dummy

for comparison reasons. Shareholder–SACGI is composed of 71 provisions of King III code aimed at protecting shareholders' interest. Stakeholder–SACGI is composed of 13 provisions of King III code to capture contextual stakeholder-inclusive provisions

Therefore, compliance with shareholder corporate governance provisions (Shareholder–SACGI) explains 10% and 8.4% variations in market value and accounting returns for listed firms in South Africa for the period 2010–2014. Comparatively, adjusted R^2 for Shareholder–SACGI shows an overall improvement from those reported in the SACGI regression (see columns 7 and 8). Contrasting the results of the Shareholder–SACGI (columns 3 and 4 of table 21) and SACGI (columns 7 and 5 in table 21) shows that Shareholder–SACGI (market returns have adjusted R^2 of 31.3% and accounting returns of 27.3%) explains changes in both market return and accounting return better than SACGI (market returns adjusted R^2 is 21.7% and accounting returns is 19.4%). Hence, Shareholder–SACGI explains 9.6% and 7.9% variations in market and accounting returns respectively compared to SACGI. These results are consistent with those reported by Ntim (2009) and Ntim et al. (2012), who reported that the Shareholder–SACGI explains approximately 9% of the changes in both accounting and market returns in South Africa. Concisely, these results indicate Shareholder–SACGI is able to explain significant variations in both accounting and market returns. In fact, the results suggest that the inclusion of Stakeholder–SACGI as part of the composite index (SACGI) may reduce the explanatory power of SACGI.

Moreover, consistent with theoretical expectations, the coefficients of Shareholder–SACGI on ROCE 0.414(.007 ***) are positive and statistically relevant at 1% (p≤0.001). However, in contrast to theoretical expectations, the coefficients of Shareholder–SACGI on Q-ratio -0.009(.073*) are negative and significant at 10% (p≤0.10). These results are similar to the results reported on SACGI in section 8.2.2, table 17. Hence, the positive relationship between Shareholder–SACGI and accounting returns suggests the theoretical expectations that compliance with provisions increases firm accounting returns. Consequently, firms that are compliant with the shareholder provisions of King III outperform less compliant firms with respect to accounting returns. Conversely, the results based on market returns do not lend support to the theoretical argument that compliance with provisions aimed at increasing shareholder value by reducing agency cost increases firm valuation. Therefore, firms with low compliance with shareholder provisions of King III are highly valued than high compliant firms. The results based on accounting returns are consistent with Ntim (2009) and Ntim et al. (2012). However, the negative significant results based on market return is in contrast with those reported in South Africa by Ntim (2009) and Ntim et al. (2012). Therefore, the significant positive relationship between Shareholder–SACGI and accounting returns supports hypothesis 10b, which states that there is a statistically significant positive

relationship between compliance with shareholder/economic provisions of King III and accounting returns. However, this hypothesis is not accepted respect to market returns.

Consistent with the results reported for Shareholder–SACGI, Stakeholder–NICGI (see table 21 columns 5–6) has an F-value of 10.808 (.000) *** for ROCE and 10.824(.000) *** for Q-ratio, both significant at 1%. As a result, the regression based on the Stakeholder–SACGI in addition to the control variables is statistically significant at 1% with adjusted R^2 of 0.261 and 0.262 for accounting and market returns respectively. Accordingly, the null hypothesis that the regression coefficient of Stakeholder–SACGI and extraneous variables is equal to zero is not accepted. Consequently, Stakeholder–SACGI plus control variables accounts for 26.1% variations in accounting returns (ROCE) and 26.2% variations in the market valuation (Q-ratio). Comparable to the results reported for Shareholder–SACGI, with the addition of Stakeholder–SACGI to the extraneous variables (Model II), the degree of variation increased by 7.2% and 4.9% for accounting returns (ROCE) and market valuation (Q-ratio) respectively.

Relatively, the adjusted R^2 for the Stakeholder–SACGI for both market returns, and accounting returns are similar but lower compared to those reported in columns 3 to 4 for Shareholder–SACGI but higher than those in columns 7 to 8 for SACGI in table 21. Comparatively, Stakeholder–SACGI has a higher explanatory power in explaining changes in the market returns (adjusted R^2 is 26.2) than SACGI (adjusted R^2 is 19.4%) statistically by 6.8% but lower explanatory rigour when matched with Shareholder–SACGI (adjusted R^2 is 31.3%) statistically by -4.9%. In the same way, with respect to accounting returns, the results based on Stakeholder–SACGI (adjusted R^2 is 26.1%) are greater than SACGI (adjusted R^2 is 19.4%) statistically by 6.7% but moderately lower than Shareholder–SACGI (adjusted R^2 is 27.3%) statistically by 1.2%. Inferring from this, the Stakeholder–SACGI has a higher explanatory power in determining changes in both market and accounting returns than SACGI but is less predictive relative to Shareholder–SACGI. This thus suggests both sub-indices (Stakeholder–SACGI and Shareholder–SACGI) possess stronger explanatory power on both accounting returns and market returns as standalones; however, this is diminished when they are joined to form the composite index (SACGI).

Consistent with the results reported for Shareholder–SACGI and SACGI, the coefficients of the Stakeholder–SACGI under ROCE 0.067(0.547) are positive but statistically insignificant.

More so, Stakeholder–SACGI is negatively associated with market returns with a coefficient of -0.007(.086*), significant at 10% (p≤0.10). The negative significant results based on market return suggest that the market undervalues firms compliant with contextual and stakeholder-inclusive provisions of King III and rewards non-compliant firms. Consequently, the market does not value stakeholder provisions but instead may interpret them as an intrusion and distraction to shareholder value creation objectives since complying with these provisions is costly. Therefore, the theoretical expectation that compliance with stakeholder affirmative provisions has an adverse effect on firm market returns is reinforced. Nonetheless, the positive relationship between the Stakeholder–SACGI and accounting returns (though insignificant) may suggest that the theoretical expectations that compliance with stakeholder inclusive provisions of the King III has an adverse effect on firm accounting returns are not supported. Therefore, firms compliant with stakeholder-inclusive provisions of King III perform better than non-compliant firms with respect to accounting returns but inversely with market returns. Therefore, hypothesis 10c, which states there is a statistically significant positive relationship between compliance with stakeholder/social provisions of King III corporate governance code and performance, is rejected irrespective of the performance measure.

Overall, the similar trend of results between SACGI, Shareholder–SACGI and Stakeholder–SACGI suggests that South African-listed firms that are compliant to the King III corporate governance code (as measured by SACGI) tend to comply with both the shareholder-oriented (Shareholder–SACGI) and stakeholder oriented (Stakeholder–SACGI) provisions.

The results based on the contextual stakeholder-inclusive provisions of the King III corporate governance code (Stakeholder–SACGI) are consistent with the results of Ntim (2009), Ntim et al. (2012), Ntim (2013c) with respect to accounting returns, though the results of these researchers were significant. However, the results based on market returns contrast with the results of Ntim (2009), Ntim et al. (2012), Ntim (2013c). As suggested in section 8.2.2, the negative significant results between Stakeholder–SACGI, Shareholder–SACGI and market valuation (similar to those reported for the SACGI) are attributable to the problem of governance inertia. As suggested earlier, this is because, over the years, the development of different corporate governance reports (King I to III) has led to investors feeling disconnected as well as paying little attention and ascribing little value to CG regulations. As such, the market undervalues compliant firms. This suggest compliant firms are penalised by the

market for pursuing compliance goals at the expense of profitability goals. Hence, where investors do not see any value in complying with CG regulations, they undervalue compliance. Indeed, this is consistent with the results of Tariq and Abbas (2013), who found that highly compliant firms in Pakistan are less profitable than averagely and lowly compliant firms.

8.5 Comparing Results of Equilibrium Variable Model and Compliance Index Model

Sub-research Question 3: Are firms' choices of alternative internal CG structures as measured by the *equilibrium variable model* associated with better firm performance than firm-level compliance with country-level CG provisions as measured by the *compliance index model*?

As noted in Chapter 1, one of the research questions (stated above) and contributions in this study is to examine across both countries if internal corporate governance structures (e.g. size of board, CEO/chairman role separation, proportion of NEDs, leverage, institutional shareholding, proportion of women and ethnic diversity) chosen by firms explain performance better than the compliance with country-level CG provisions which are prescribed by external bodies. In fact, as noted earlier, prior research in CG and particularly in an African context has not yet provided a comprehensive and robust understanding of internal CG structures selected by firms from a multi-country perspective as well as the level at which these firms comply with local CG provisions and their bearing on firm financial performance. This study specifically attempts to fill this gap by comparing both models and, as a result, unravel whether firm-level choice of corporate governance structures impacts on firm accounting and market returns better than complying with externally generated governance requirements, which are costly to comply with and may be seen by managers, firms and investors as intrusive, irrelevant and distracting from the profit maximisation goal of firms.

For comparison purposes of both models, it will be unsuitable to compare non-traditional corporate governance requirements such as contextual requirements enshrined in codes in both countries. As a result, consistent with the same reasoning applied by Ntim (2009), the shareholder compliance index results discussed in 8.4 are compared with the results of the

equilibrium variable model. This is because, as noted earlier, the inclusion of contextual provisions may diminish the explanatory power of provisions aimed at reducing agency cost and increasing shareholder value. More so, the evidence reported in 8.4 for the shareholder sub-indices in both countries (Stakeholder and Shareholder indices) shows they possess stronger explanatory power in explaining variations in accounting and market returns as standalones. However, this is diminished when they are joined together to form the composite index (NICGI and SACGI). More so, theoretically, firm-level internal corporate governance structures and provisions captured by the shareholder index in both countries are aimed at reducing agency cost and increasing shareholder value, whereas the contextual provisions in the stakeholder sub-index are mostly aimed at somewhat increasing social equality and achieving macro-economic policy objectives of governments and as such may not accurately have a quantifiable impact on shareholder value maximisation. For that reason, the subsequent subsections compare the results based on the shareholder index (columns 3 and 4 of tables 20 and 21) and the equilibrium variable model (tables 18 and 19) for Nigeria and South Africa respectively.

8.5.1 Comparing Results of the Equilibrium Variable Model and Compliance Index Model in Nigeria

As noted above, in Nigeria, the compliance index model is based on the results of Shareholder–NICGI-firm performance link (which contains 61 out of the 75 CG provisions as enshrined in the SEC 2011 corporate governance code). This is compared with the results of the equilibrium variable model (based on the choice of firm-level governance structures not determined by external bodies). The regression results of both models including extraneous variables are reported in table 22 below. However, for robust comparison of results, the individual firm year's statistical results for Shareholder–NICGI, which was not reported in table 20, and the firm-year's results based on the equilibrium variable model, which was reported in table 18, are reported in table 22 (rows 2 to 5). This is done to achieve a robust comparison, which is not limited only to the pooled sample, and also to compare across individual firm years.

As discussed in table 20 columns 4 to 6 (not reported in table 22 for brevity), Shareholder–NICGI showed positive and statistically significant coefficients with both accounting and market returns in the pooled sample. The individual firm year coefficients for Shareholder–

NICGI (not reported here for brevity reasons) showed a significant positive relationship with ROCE in 2011 (5%, $p \leq 0.03$) but insignificant in 2012 (12 .6%), 2013 (23.1%), 2014 (95%) and 2015 (68%). With regard to Q-ratio, Shareholder–NICGI is consistently positive across each firm year but only statistically significant in 2013 ($p \leq 0.10$), and insignificant in 2011 (37.1%), 2012 (25%) and 2014 (21.2%), 2015 (86%). However, the firm year p-values for Shareholder–NICGI across both performance measures except for ROCE in 2014 and Q-ratio in 2015 are moderately low and close to becoming significant with consistent positive coefficients. Overall, the results are consistent with prior researchers (e.g. Beiner et al., 2006, Ntim, 2009, Ntim et al., 2012, Ntim, 2013a) who have reported that compliance with externally developed codes positively impacts firm financial performance.

On the other hand, the results based on the equilibrium variable model (reported in table 18) showed mixed results across both performance measures and are consistent with prior CG research which has also reported mixed results using the choice of firm-level governance structures (e.g. Kyereboah-Coleman and Biekpe, 2006b, Kyereboah-Coleman and Biekpe, 2006a, Sanda et al., 2005, Vafeas, 1999). Except for gender diversity and ethnic diversity, which showed consistent statistically significant coefficients across both performance measures, the variables are either statistically significant with one performance measure or insignificant with another performance measure with sometimes contradictory signs of the coefficients. Furthermore, most of the variables have insignificant results irrespective of the performance measure used. In fact, out of the 14 firm-level internal corporate governance structures used as a proxy in this research, four showed insignificant results irrespective of the performance measure, whereas eight showed significant results with one performance measure and insignificant results with the other. As noted above, only two variables showed consistent statistically significant coefficients across both performance measures. Compared to the annual results for Shareholder–NICGI in the compliance index model, most of the insignificant results for variables in the equilibrium variable model showed p-values up to 70% and above.

With regard to regression diagnostic and conditions for normal distribution assumptions of OLS, some of the variables within the equilibrium variable model had some skewness statistic above the critical values of +/-0.8 and kurtosis test results of above the critical values of -/+3. The combined average for all the variables had skewness of 0.26 and kurtosis of +3.10. Meanwhile the Shareholder–NICGI showed a skewness of -0.63 and kurtosis of 3.08.

As a result, the compliance index model (Shareholder–NICGI) showed better distributional properties than the equilibrium variable model. This is further supported by the VIF results of both models reported in table 22 below.

The VIF results from table 22 show that the highest VIF value in the compliance index model is 7.265, while that for the equilibrium variable model showed a VIF value of just equal to the critical value of 10 (0.904). Similarly, across firm years, the equilibrium variable model has VIF values above 10 (see table 22). More so, the tolerance statistics (not reported here for brevity) for some variables in the equilibrium variable model show values slightly higher than the critical value of one; meanwhile, those of compliance index model showed values of less than one. For example, board interlock and board busyness have tolerance values slightly greater than one (1.005). Furthermore, the compliance index model possesses better Cook's test, studentised residuals and engen values (not reported here for brevity reasons) than the equilibrium variable model.

The Adjusted R^2 and corresponding F-values and significance, Durbin–Watson statistics and standards errors for both models are reported in table 22 below. These results have already been reported in tables 20 and 18 for the equilibrium variable model and the compliance index model respectively. They are reported here for the sake of comparisons. Panels A to F show the summary regression statistics for the independent variables plus the controls for both ROCE and Q-ratio for the pooled sample (400 firm years) and the individual firm years 2011, 2012, 2013, 2014 and 2015. Specifically, the Adjusted R^2 examines the extent to which variations in accounting and market returns are explained by internal corporate governance variables in each model. Hence, the higher the Adjusted R^2, the better the explanatory power of a model. In addition, the F-test indicates whether the coefficients of the internal corporate governance variables in each model are jointly significant. The closer the F-value is to zero, the weaker the explanatory power of the model. Meanwhile, the standard error measures the standard deviation of the distribution of residuals for each regression model. Therefore, the higher the standards errors, the poorer the model. Finally, the Durbin–Watson test shows the presence of autocorrelation in each model. Durbin–Watson test results indicates the presence of mild to serious autocorrelation problems.

Consistent with the distributional properties discussed earlier, the compliance index model (Shareholder–NICGI) showed better explanatory power than the equilibrium variable model

with respect to accounting returns (ROCE), but the latter showed better explanatory power than the former with respect to market returns (Q-ratio) on the pooled sample significant at 1% in both cases. Across the firm years, the adjusted R^2 is better with respect to ROCE for the Shareholder–NICGI than the equilibrium variable model. Nonetheless, the Adjusted R^2 for Q-ratio is better for the equilibrium variable model than the compliance index model only in 2011 and 2012.

For the F-values, the value of the compliance index model is significant within the pooled sample and across all firm years irrespective of the performance measure used, whereas those for the equilibrium variable model are insignificant in 2011, 2012 and 2013 for ROCE. The Durbin–Watson test results showed mixed results as they have a higher value with respect to ROCE in the compliance index model in the pooled sample and in 2013 only. More so, with respect to Q-ratio, the equilibrium variable model shows better Durbin–Watson test results in the pooled sample and across all the years with the exception of 2013. Finally, the standard error is lower for the compliance index model in the pooled sample and across each firm year with respect to accounting returns. Similarly, apart from 2013, the compliance index model has better standard errors with respect to Q-ratio in the pooled sample and in 2011, 2012, 2014 and 2015.

Overall, given the diagnostic statistical test and results discussed in the preceding paragraphs (though with some mixed results), the compliance index model (Shareholder–NICGI) has a better explanatory and predictive power than the equilibrium variable model. This suggests that, in Nigeria, though laborious, it is value relevant for firms to comply with the integrated corporate governance provisions rather than use single firm-level corporate structures in isolation.

A possible explanation for this stronger predictive power of the compliance index model is due to its ability to capture actual qualitative variations in corporate governance disclosures among listed firms in Nigeria.

The subsequent section reports comparison of equilibrium variable model and the compliance index model in South Africa.

Table 22: Nigerian Summary Regression Results – Compliance Index Model and Equilibrium Variable Model

	Shareholder Compliance Index Model (Shareholder–NICGI)		Results on Equilibrium Variable Model	
	ROCE	Q-ratio	ROCE	Q-ratio
Panel A: Firm Years with Extraneous Variables				
R-Square (R²)	.203	.296	.228	.385
Adjusted R²	.165	.262	.167	.337
F-value	5.402	8.887	3.742	7.972
F-significance	(.000)***	(.000)***	(.000)***	(.000)***
Standard Error	21.208	1.529	21.246	1.449
Durbin–Watson	1.021	1.680	.986	1.236
Highest VIF Score	4.964	7.265	9.302	9.904
No of observations	400	400	400	400
Panel B: 2011 Firm Year with Extraneous Variables				
R-Square (R²)	.296	.461	.332	.604
Adjusted R²	.144	.344	.023	.421
F-value	1.954	3.496	1.075	3.299
F-significance	(.036)**	(.000)***	(.400)	(.000)***
Standard Error	26.044	.939	27.834	0.882
Durbin–Watson	2.004	2.397	2.215	2.463
Highest VIF Score	7.265	7.266	20.449	17.495
No of observations	80	80	80	80
Panel C: 2012 Firm Year with Extraneous Variables				
R-Square (R²)	.352	.471	.390	.615
Adjusted R²	.213	.357	.108	.437
F-value	2.527	4.137	1.381	3.457
F-significance	(.006)***	(.000)***	(.160)	(.000)***
Standard Error	22.083	.988	23.516	0.924
Durbin–Watson	2.330	2.262	2.420	2.368
Highest VIF Score	4.895	4.895	18.721	18.72
No of observations	80	80	80	80
Panel D: 2013 Firm Year with Extraneous Variables				
R-Square (R²)	.436	.452	.515	.500
Adjusted R²	.314	.334	.291	.269
F-value	3.587	3.826	2.295	2.163
F-significance	(.000)***	(.000)***	(.005)***	(.009)***
Standard Error	19.302	1.545	19.634	1.618
Durbin–Watson	2.271	2.297	2.112	2.268
Highest VIF Score	8.355	8.355	10.90	21.94
No of observations	80	80	80	80
Panel E: 2014 Firm Year with Extraneous Variables				
R-Square (R²)	.261	.474	.313	.553
Adjusted R²	.103	.360	-.005	.346
F-value	1.648	4.180	0.983	2.217
F-significance	(.090)*	(.000)***	(.503)	(.001) ***
Standard Error	20.525	1.446	21.729	1.475
Durbin–Watson	2.1614	2.220	2.174	2.362
Highest VIF Score	6.708	6.708	21.679	21.34
No of observations	8/0	80	80	80
Panel F: 2015 Firm Year with Extraneous Variables				
R-Square (R²)	.248	.301	.468	.400
Adjusted R²	.207	.150	.213	.112
F-value	2.474	1.998	1.835	1.387
F-significance	(.007)***	(.032)**	(.033)**	(.158)
Standard Error	15.491	2.203	15.624	2.278
Durbin–Watson	2.228	2.185	2.116	1.770
Highest VIF Score	5.638	3.294	8.867	8.867
No of observations	80	80	80	80

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. Shareholder–NICGI composed of 61 provisions of SEC 2011 code aimed at protecting shareholders' interest.

8.5.2 Comparing Results of the Equilibrium Variable Model and the Compliance Index Model in South Africa

Similar to Nigeria, the compliance index model for South Africa is based on the results of Shareholder–SACGI-firm performance association (which contains 71 out of the 84 CG provisions as stipulated in the King III corporate governance code). This result is compared with the findings of equilibrium variable model (based on the choice of firm-level alternative internal governance structures not externally determined). Like Nigeria, the results of both models including control variables are reported in table 23 below. Owing to the need for robustness and consistency in comparison of results, the individual firm year's results for Shareholder–SACGI, which wasn't reported in table 21, and the firm-year's results based on the equilibrium variable model, which was reported in table 19, are reported in table 23 below (rows 2 to 5). As discussed in table 21 columns 4 to 6 (not reported in table 23 for brevity), the South African Shareholder–SACGI indicated positive and statistically significant coefficients with accounting returns and but negative significant association with market returns over the pooled sample. Across individual firm years, coefficients for Shareholder–SACGI (not reported here for brevity reasons) with Q-ratio were consistently negative but statistically insignificant in 2010 (31.5%), 2011 (21.1%), 2012 (27.9%), 2013 (31.4%) and 2014 (84.6%). With regard to ROCE, Shareholder–SACGI showed a significant positive relationship in 2011 (10%, p≤0.075), 2012 (10%, p≤0.063), but insignificant in 2010 (32%), 2013 (19.1%) and 2014 (12.5%).

Like Nigeria, the firm year p-values for Shareholder–SACGI across both performance measures across all firm years except for ROCE in 2014 are moderately low and close to becoming significant with consistent positive coefficients with ROCE and negative coefficients with respect to Q-ratio. Generally, the positive results of Shareholder–SACGI and accounting returns are consistent with the results of previous researchers in South Africa (e.g. Ntim, 2009, Ntim et al., 2010, Ntim et al., 2012, Ntim, 2013c), who constructed similar composite index and reported that compliance with King II aimed at enhancing shareholders' value maximisation significantly and positively impacts on accounting returns. However, the negative results based on market return are not in line with those reported by prior researchers using similar composite index (e.g. Beiner et al., 2006, Ntim et al., 2010, Ntim et al., 2012, Ntim, 2013a, Ntim, 2013c).

Similar to Nigeria, the regression results of the equilibrium variable model (reported in table 19) showed similar mixed results irrespective of performance measures and are also akin to the regression results of prior CG research using firm-level internal governance structures in Africa (e.g. Kyereboah-Coleman and Biekpe, 2006b, Ntim, 2009). Apart from board size, which showed consistent negative statistically significant coefficients across both performance measures, the rest of the variables are either statistically significant with one performance measure but insignificant with another performance measure or significant with both measures but with contradictory signs of coefficients. For example, frequent board meetings is significantly related to both measures at 5%, but it is positive with ROCE and negative with Q-ratio. Indeed, out of the 14 firm-level internal corporate governance structures in this research, two revealed insignificant results irrespective of the performance measure used while nine exhibited significant results with one performance measure and insignificant results with the other. For example, proportion of NED, ED, INED, board interlock, board busyness, gearing, director shareholding and institutional shareholding showed significant results with ROCE but insignificant results with Q-ratio whereas only CEO/Chairman separation showed a significant relationship with Q-ratio and an insignificant association with ROCE. More so, comparing each firm year's results of the variables in the equilibrium variable model with those of Shareholder–SACGI (compliance index model), shows that most of the variables in the equilibrium variable model showed p-values up to 99.88%.

Furthermore, with respect to regression diagnostic and conditions for normal distribution assumptions of OLS, some of the variables within the equilibrium variable model had skewness statistics of above the critical values of +/-0.8 and kurtosis test results of above critical values of -/+3. For example, director shareholding has a mean kurtosis test value of 3.342 with skewness of 1.237. More so, the combined average for all the variables had average skewness of 0.1440 and kurtosis of +5.8. On the other hand, Shareholder–SACGI showed a skewness of -0.355 and kurtosis of 2.115. Hence like Nigeria, the compliance index model (Shareholder–SACGI) showed better distributional properties than the equilibrium variable model.

More so, the VIF test reported in table 23 indicates that the highest VIF value in the compliance index model for the pooled sample is 5.049, whereas for the equilibrium variable model it is 8.222. In addition, the VIF values for the equilibrium variable are consistently higher than those of the compliance index model (see table 23 above).

Table 23: South African Summary Regression Results of the Compliance Index Model and Equilibrium Variable Model

	Compliance Index Model (Shareholder–SACGI)		Results on Equilibrium Variable Model	
	ROCE	Q-ratio	ROCE	Q-ratio
Panel A: Firm Years with Extraneous Variables				
R-Square (R^2)	.299	.338	.320	.266
Adjusted R^2	.273	.313	.278	.220
F-value	11.4000	13.634	7.570	5.833
F-significance	(.000)***	(.000)***	(.000)***	(.000)***
Standard Error	22.166	0.808	22.145	.869
Durbin–Watson	1.075	1.079	2.004	1.841
Highest VIF Score	5.049	3.473	8.222	8.128
No of observations	500	500	500	500
Panel B: 2010 Firm Year with Extraneous Variables				
R-Square (R^2)	.304	.340	.258	.326
Adjusted R^2	.190	.231	.142	.098
F-value	2.652	3.124	1.653	1.428
F-significance	(.003)***	(.001)***	(.020)**	(.121)
Standard Error	22.857	1.081	23.476	1.555
Durbin–Watson	2.217	2.231	2.108	1.864
Highest VIF Score	4.925	3.538	14.302	13.277
No of observations	100	100	100	100
Panel C: 2011 Firm Year with Extraneous Variables				
R-Square (R^2)	.360	.487	.402	.474
Adjusted R^2	.254	.402	.200	.286
F-value	3.408	5.759	1.990	2.526
F-significance	(.000)***	(.000)***	(.012)***	(.001)***
Standard Error	21.581	0.696	22.362	.753
Durbin–Watson	2.243	2.286	1.902	1.838
Highest VIF Score	5.147	3.755	14.846	14.966
No of observations	100	100	100	100
Panel D: 2012 Firm Year with Extraneous Variables				
R-Square (R^2)	.325	.431	.383	.350
Adjusted R^2	.214	.338	.171	.130
F-value	2.929	4.603	1.809	1.601
F-significance	(.001)***	(.000)***	(.027)**	(.064)*
Standard Error	20.318	0.801	20.987	.937
Durbin–Watson	2.090	2.166	2.118	2.099
Highest VIF Score	5.349	3.730	13.994	10.125
No of observations	100	100	100	100
Panel E: 2013 Firm Year with Extraneous Variables				
R-Square (R^2)	.383	.469	.420	.400
Adjusted R^2	.281	.381	.222	.198
F-value	3.770	5.361	2.118	1.976
F-significance	(.000)***	(.000)***	(.007)***	(.013)***
Standard Error	23.079	0.689	24.085	.825
Durbin–Watson	2.263	1.788	2.337	2.151
Highest VIF Score	5.394	3.744	16.535	16.592
No of observations	100	100	100	100
Panel F: 2014 Firm Year with Extraneous Variables				
R-Square (R^2)	.370	.411	.460	.451
Adjusted R^2	.266	.314	.275	.265
F-value	3.566	4.243	2.483	2.430
F-significance	(.000)***	(.000)***	(.001)***	(.002)***
Standard Error	24.563	0.705	24.547	.726
Durbin–Watson	1.915	2.228	1.736	1.847
Highest VIF Score	7.700	6.020	15.959	16.469
No of observations	100	100	100	100

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. Shareholder–SACGI composed of 71 provisions of King III code aimed at protecting shareholders' interest.

Moreover, tolerance statistics (not reported here for brevity) for some variables in the equilibrium variable model for South Africa indicated values slightly closer to the critical value of one (0.850). Contrarily, the compliance index model showed tolerance values of less than one (0.650). Additionally, the compliance index model (Shareholder–SACGI) possesses better Cook's test, studentised residuals and engen values results (not reported here for brevity reasons) than the equilibrium variable model.

The regression results of the adjusted R^2, F-values, standard errors and Durbin–Watson test for the pooled sample (500 firm years) are reported in table 23 above. These results have already been reported in tables 19 and 21 for the equilibrium variable model and compliance index model respectively. Panels A to F show the summary statistics for the independent variables plus the controls on both ROCE and Q-ratio for the pooled sample (500 firm years) and the individual firm years 2010, 2011, 2012, 2013, and 2014. The compliance index model (Shareholder–SACGI) shows superior explanatory power compared with the equilibrium variable model with respect to market returns (Q-ratio). Nevertheless, the latter shows superior explanatory power with respect to accounting returns (ROCE) compared with the former on the pooled sample. For example, the adjusted R^2 for Q-ratio within the compliance index model is 0.313 (31.3%) for the pooled sample whereas for the equilibrium variable model it is 0.22 (22.0%). Nevertheless, for ROCE, the Adjusted R^2 is 0.27.3 (27.3%) and 0.278 (27.8%) for the compliance index model and equilibrium variable model respectively. However, across the individual years, the adjusted R^2 has superior explanatory power with respect to ROCE and Q-ratio for the compliance index model (Shareholder–SACGI) except for ROCE in 2014.

Comparable to Nigeria, with regard to F-values, the value of the compliance index model (Shareholder–SACGI) is higher and significant within the pooled sample and across all firm years irrespective of the performance measure at 1%, whereas the equilibrium variable model is insignificant in 2010 for Q-ratio. More so, in 2012, Q-ratio for the equilibrium variable model is significant at 10%. Similar to Nigeria, the Durbin–Watson test showed mixed results in South Africa across both models. In the pooled sample, the Durbin–Watson test is higher in the equilibrium variable model than in the compliance index model and but this is consistent only in 2012 and 2013 with respect to ROCE. In fact, the Durbin–Watson test showed superior values across all firm years with respect to Q-ratio in the compliance index model. Finally, similar mixed results are seen for standard errors. Specifically, the latter is

lower for the compliance index model in both the pooled sample and across each firm year with respect to market returns, but the equilibrium variable model has better standard errors with respect to ROCE in the pooled sample and 2014, whereas the compliance index model has better standard errors in 2010 to 2013. The mixed results for Durbin–Watson and standard errors are consistent with the findings of Ntim (2009) for South Africa.

With the results of the diagnostic statistical test and empirical results discussed earlier, on aggregate level, the Shareholder–SACGI (compliance index model) has a superior explanatory and prognostic influence in explaining firm financial outcomes in South Africa compared with the equilibrium variable model. Like Nigeria, these results suggest value relevance in complying with a composite corporate governance index for South Africa rather than using single firm-level internal corporate structures in isolation or a few of them in examining the corporate governance firm financial performance relationship. Like Nigeria, a possible explanation for this stronger prognostic power of compliance index is a result of aggregation of qualitative variations in corporate governance mechanisms.

The subsequent section will discuss a summary comparison of Nigeria and South Africa findings.

8.6 Comparative Summary of Hypothesis Testing Results for Nigeria and South Africa Based on Both Equilibrium Variable Model and Compliance Index Model

Main Research Question: How, and in what ways, do the choices of internal corporate governance mechanisms and compliance with corporate governance provisions affect firm financial performance of listed firms in Nigeria and South Africa?

Following the results reported in sections 8.2 to 8.5, the results in both countries based on both models are reported in table 24 below. The table summarises the various hypotheses developed in Chapter 4 and their statistical outcomes in both countries using both ROCE and Q-ratio, hence providing empirical evidence for the main research question above and in section 1.4.1.

To begin with, the regression results indicate that the quality of internal corporate governance structures (NICGI and SACGI) externally generated for firms to comply with or apply plus the control variables as measured by the compliance index model accounts for 17.1% variations in accounting returns in Nigeria and 27.3% of the variations in South Africa. Similarly, the quality of internal corporate governance structures (NICGI and SACGI) and extraneous variables explain 31.3% variations in market returns of South African-listed firms and 26.4% variations in market returns of listed firms in Nigeria.

In relation to alternative firm-level internal corporate governance as measured by the equilibrium variable model, findings show that these variables plus the extraneous variables explain 22.0% and 33.7% of changes in the market returns in South Africa and Nigeria respectively. In the same way, alternative firm-level internal corporate governance and control variables account for 16.7% and 27.8% of changes in accounting returns of listed firms in Nigeria and South Africa respectively.

Furthermore, comparative diagnostic and statistical results in both countries show that the compliance index model which measured the impact of the quality of internal CG structures as determined by country-level corporate governance provisions explains changes in firm financial performance better than the equilibrium variable model (a measure of firm-level single CG structures internally generated) in both countries. These results therefore suggest that, though the compilation, development and compliance of country- and firm-level corporate governance indices may be laborious, costly and demanding, they remain a better proxy to aggregate the quality of firm-level corporate governance structures than any individual or group of selected firm-level internal corporate governance characteristics.

In relation to the alternative firm-level internal corporate governance variables, the proportion of NEDs is insignificant and positively related to ROCE in Nigeria but significant in South Africa. More so, with respect to Q-ratio, negative relationship with proportion of NEDs is consistent across both countries but insignificantly. As a result, both countries show similar results but only South African results with respect to ROCE are significant. Hence, hypothesis 1a is accepted in South Africa with respect to accounting returns but not market returns. Nonetheless, this hypothesis is not accepted for Nigeria irrespective of the performance measure. Proportion of ED is insignificantly associated with both performance measures in Nigeria but significantly negatively related to ROCE in South Africa at 5%.

However, the latter results are contrary to the hypothesised sign and therefore hypothesis 1b is rejected in both South Africa and Nigeria. More so, proportion of INED shows a positive relationship with market returns in South Africa but negative in Nigeria, but it is significant only with the latter. However, INED is negatively associated with accounting returns in both countries but significantly with ROCE in South Africa. Nevertheless, similar to the results of EDs, the significant results are contrary to the expected sign and therefore hypothesis 1c is rejected in both South Africa and Nigeria.

CEO/Chairman role separation is positively associated and significant with Q-ratio at 10% in South Africa and 5% for Nigeria. However, CEO/Chairman role separation impacts positively on ROCE in South Africa but negatively in Nigeria insignificantly. Hence, hypothesis 2 is accepted for Nigeria and South Africa with respect to Q-ratio but rejected with respect to ROCE. Board size (hypothesis 3) is positively related to ROCE insignificantly but negatively related to Q-ratio significantly (1%) in Nigeria. However, it is significantly negatively associated with both market and accounting returns at 5% in South Africa. Yet, since these significant results are different from the hypothesised signs, hypothesis 3 is rejected.

Furthermore, gender diversity is positively related to both accounting and market performance measure and significantly at 1% in Nigeria but positively insignificant with ROCE and negatively insignificant with Q-ratio in South Africa. As a result, hypothesis 4 (H_4) is accepted for Nigeria but not accepted for South Africa regardless of the performance measure. Hence, in Nigeria, the presence of women on corporate boards enhances firm performance more than in South Africa.

In addition, the board meetings variable is positively but insignificantly related to firm performance irrespective of the performance measure in Nigeria. However, it shows mixed significant results in South Africa relative to the performance measure. In fact, frequency of board meetings shows a positive relationship with accounting returns (ROCE) but negative relationship with market returns at 5%. This implies that firms that have more board meetings in South Africa witness increase in accounting returns but remain undervalued by the market. Meanwhile, in Nigeria, the insignificant results (though positive) reject hypothesis 5 (H_5). Nonetheless, hypothesis H_5 is accepted for ROCE but rejected for Q-ratio in South Africa.

Ethnic diversity shows a negative statistical relationship with both performance measures significantly at 1% for Q-ratio and 5% for ROCE in Nigeria. However, in South Africa, ethnic diversity showed an insignificant positive relationship with Q-ratio but negative association with ROCE. The South African results therefore indicate that, despite the tremendous effort put in by various South African post-apartheid governments, in terms of black empowerment, the outcomes are mixed and not significant. The Nigerian results are, however, not surprising since the majority of boards in Nigeria are composed of native Nigerians; therefore, performance declines because of the influence of high percentage of ethnically homogeneous board members. Following from these results, hypothesis 6 (H_6) is not accepted in either country irrespective of the performance measure.

Furthermore, board interlocks indicate a positive association with ROCE in both countries but significantly only in South Africa at 5%. However, with Q-ratio, board interlock is negatively associated in both countries insignificantly. These results suggest firms in both countries with high levels of interlocks enjoy increase in accounting returns, but markets do not see the relevance of interlocks and, as such, value firms with increasing interlocks negatively. This may also suggest that markets may see interlocks as increasing directors' busyness and lack of commitment to a firm. Hence, given the results, hypothesis 7a (H_{7a}) is accepted for accounting returns in South Africa but rejected for Q-ratio and rejected for Nigeria irrespective of the performance measure. More so, hypothesis 7b, which predicts board busyness on firm returns as expected, is negatively associated with both ROCE and Q-ratio in Nigeria but significantly with ROCE at 10%. However, it is positively associated with Q-ratio in South Africa insignificantly but significantly negatively related to ROCE. The negative significant association of board busyness and accounting returns in both countries suggests that board members who spend most of their time attending other board meetings in other firms may spend little time in monitoring management, which impacts negatively on accounting returns. Following from these results, hypothesis 7b is accepted in relation to accounting returns in both countries but not accepted in relation to market returns. These results suggest that, though interlock may increase firm accounting value as opined by the resource dependency theory, shareholders may view high interlocks as lack of commitment and may undervalue firms with interlocking directors.

Gearing significantly relates to accounting returns negatively in both Nigeria and South Africa at 1% and 5% respectively. However, it is positively associated with market returns in

both countries but insignificantly. This suggests that, in both countries, markets value firms which are highly geared positively since gearing is a good corporate governance mechanism which may help align the interest of managers of firms to those of the shareholders. However, the negative significant relationship in both countries suggests that highly geared firms have decreasing accounting returns as a result of increased cost of debt as compared to equity. Following these results, hypothesis 8 (H_8) is accepted for accounting returns in both countries but rejected for market returns.

Furthermore, director shareholding shows a negative relationship in both countries irrespective of the performance measure but only significantly for accounting returns at 10% in both countries. This suggests that managerial and board ownership of shares which has been argued by agency theory to align the interest of managers and shareholders is not value relevant in Nigeria and South Africa. In fact, the case may be increasing managerial and board ownership gives corporate managers the power to influence decisions, which may be detrimental to firm performance in emerging African economies. Hence, hypothesis 9a is accepted in both countries in relation to accounting returns but rejected in relation to market returns owing to insignificance of the results in the latter.

In addition, like director shareholding, institutional shareholding showed negative association with accounting returns in both countries, significantly in South Africa though insignificantly in Nigeria. However, it is positively significant with Q-ratio in Nigeria at 10%, whereas it is negatively insignificant in South Africa.

Despite the argument in the literature that institutional shareholders monitor management better than disperse shareholders, this may not be true in an African context, which is characterised by concentrated institutional shareholders who may manipulate the management for personal gains, rather than the overall returns of the firms. In fact, the results may suggest that increasing institutional share ownership in African firms adversely affects accounting returns of firms. However, the positive relationship in Nigeria with Q-ratio may suggest that investors in Nigeria value the presence of institutional ownership of firms and therefore see this as a positive signal of good monitoring and control. Drawing from these results, hypothesis 9b is accepted with regard to Q-ratio in Nigeria but rejected for ROCE Nevertheless, it is rejected in South Africa regardless of the performance measure as the significant results with ROCE have a sign contrary to the hypothesised sign.

Finally, with respect to the last variable under the equilibrium variable model, audit committee independence showed a positive relationship with both performance measures in South Africa, though insignificantly. However, in Nigeria, audit committee independence showed a negative relationship with both ROCE and Q-ratio, but significantly only with Q-ratio at 1%. The difference in results may be due to the definition and interpretation of the term 'independence'. In South Africa, for example, the King report clearly defines independent audit committee members as those who have no stake in the business and are not connected to any shareholder, manager or employee of the firm. However, 'independent audit committee member' is not defined within the SEC 2011 CG code, and, as such, it is subject to interpretation by each entity. For example, some firms in Nigeria include representatives of shareholders as independent audit committee members. In fact, the requirements of the independent audit committee in the SEC are contradictory to the Enactment of the Companies and Allied Matters Act (CAMA) of 1990, which is mandatory to comply with, and requires shareholder representation in audit committees. Hence, most Nigerian firms include shareholders' representatives who are not board members on audit committees.

This may account for lack of 'independence' and an increase in lobbying for shareholder representatives who may not possess sufficient auditing skills, knowledge and experience, which can lead to associated negative impact on market value and accounting returns. On the other hand, the positive relationship (though insignificant) in South Africa may suggest that the presence of independent audit committee members who must be independent board members as clearly defined in the King III enhances both market and accounting returns. However, the insignificant results in South Africa reject hypothesis 11 as well as in Nigeria, since the negative significant results with Q-ratio are contrary to the expected sign. With regard to the quality of internal corporate governance structures as captured by the CG indices (NICGI and SACGI) as well as sub-indices (Shareholder and Stakeholder indices), results show that the Nigeria CG index (NICGI) is positively and significantly associated with both accounting and market returns at 1% ($p \leq 0.0001$) and 5%, ($p \leq 0.05$) respectively. However, the South African corporate governance index (SACGI) shows a positive relationship with accounting returns but a negative association with market returns at 5% ($p \leq 0.05$). These results indicate firms that are highly compliant to the respective country corporate governance regulations benefit from increasing accounting returns.

Table 24: Comparative Summary of Hypothesis Testing Results for Nigeria and South Africa based on both the Equilibrium Variable Model and the Compliance Index Model

Dependent Variable			NIGERIA						SOUTH AFRICA					
			ROCE			Q-ratio			ROCE			Q-ratio		
Independent Variable	Hypothesis Number	Hypothesised Sign	Actual Sign of Result	Statistical Significance of Result	Conclusion (Hypothesis)	Actual Sign of Result	Statistical Significance of Result	Conclusion (Hypothesis)	Actual Sign of Result	Statistical Significance of Result	Conclusion (Hypothesis)	Actual Sign of Result	Statistical Significance of Result	Conclusion (Hypothesis)
Prop. Non-executive Directors	1a	+	+	Insignificant	Rejected	-	Insignificant	Rejected	+	Significant (5%)	Accepted	-	Insignificant	Rejected
Prop. Executive Directors	1b	+	-	Insignificant	Rejected	+	Insignificant	Rejected	-	Significant (1%)	Rejected	+	Insignificant	Rejected
Prop. Independent NED	1c	+	-	Insignificant	Rejected	-	Significant (1%)	Rejected	-	Significant (1%)	Rejected	+	Insignificant	Rejected
CEO/Chairman Role Separation	2	+	-	Insignificant	Rejected	+	Significant (5%)	Accepted	+	Insignificant	Rejected	+	Significant (10%)	Accepted
Board Size	3	+	+	Insignificant	Rejected	-	Significant (1%)	Rejected	-	Significant (5%)	Rejected	-	Significant (5%)	Rejected
Gender Diversity	4	+	+	Significant (1%)	Accepted	+	Significant (1%)	Accepted	+	Insignificant	Rejected	-	Insignificant	Rejected
Board Meetings	5	+	+	Insignificant	Rejected	+	Insignificant	Rejected	+	Significant (5%)	Accepted	-	Significant (5%)	Rejected
Ethnic Diversity	6	+	-	Significant (5%)	Rejected	-	Significant (1%)	Rejected	-	Insignificant	Rejected	+	Insignificant	Rejected
Board Interlocks	7a	+	+	Insignificant	Rejected	-	Insignificant	Rejected	+	Significant (5%)	Accepted	-	Insignificant	Rejected
Board Busyness	7b	-	-	Significant (10%)	Accepted	+	Insignificant	Rejected	-	Significant (5%)	Accepted	+	Insignificant	Rejected
Gearing	8	-	-	Significant (1%)	Accepted	+	Insignificant	Rejected	-	Significant (5%)	Accepted	+	Insignificant	Rejected
Director Shareholding	9a	-	-	Significant (10%)	Accepted	-	Insignificant	Rejected	-	Significant (10%)	Accepted	-	Insignificant	Rejected
Institutional Shareholding	9b	+	-	Insignificant	Rejected	+	Significant (10%)	Accepted	-	Significant (10%)	Rejected	-	Insignificant	Rejected
Country CG Index (NICGI & SACGI)	10a	+	+	Significant (1%)	Accepted	+	Significant (5%)	Accepted	+	Significant (5%)	Accepted	-	Significant (5%)	Rejected
Country CG Shareholder Index (SH–NACGI & SH–SACGI)	10b	+	+	Significant (1%)	Accepted	+	Significant (5%)	Accepted	+	Significant (5%)	Accepted	-	Significant (5%)	Rejected
Country CG Stakeholder Index (S–NACGI & S–SACGI)	10c	+	+	Significant (1%)	Accepted	+	Significant (1%)	Accepted	+	Insignificant	Rejected	-	Significant (10%)	Rejected
Audit Committee Independence	11	+	-	Insignificant	Rejected	-	Significant (1%)	Rejected	+	Insignificant	Rejected	+	Insignificant	Rejected

However, highly compliant firms with Nigeria SEC 2011governance regulations are highly valued by investors but contrarily in South Africa, highly compliant firms to King III are negatively valued. The results suggest that stock markets in different countries value firms differently in relation to firm-level compliance with country CG provisions. Hence, hypothesis 10a, which stated that there is a positive relationship between compliance with country-level corporate governance provisions and accounting returns, is accepted in both countries. However, this hypothesis in relation to market returns is accepted in Nigeria but rejected for South Africa.

More so, and consistent with the results reported for the composite index (NICGI and SACGI) discussed in the preceding paragraph, the shareholder sub-index (Shareholder–NICGI and Shareholder–SACGI) showed a positive relationship with accounting returns in both Nigeria and South Africa at 1% ($p \leq 0.0001$) and 5%, ($p \leq 0.05$) respectively. However, in line with the results of the composite indices in both countries, the shareholder sub-index in South Africa (Shareholder–SACGI) shows an inverse relationship with market returns ($p \leq 0.05$) whereas Shareholder–NICGI positively affects market returns (($p \leq 0.05$). As a result, hypothesis 10b, which states that there exists a positive significant relationship between compliance with country-level shareholder corporate governance provisions and accounting returns, is accepted in both countries but rejected in relation to market returns in South Africa and accepted for Nigeria.

Finally, compliance with stakeholder CG sub-index (Stakeholder–NICGI and Stakeholder–SACGI) showed a consistent positive relationship with accounting returns in both countries but significant only in Nigeria at 1% ($p \leq 0.0001$). On the other hand, Stakeholder–SACGI showed a negative relationship with market returns, but Stakeholder–NICGI showed a positive impact on market returns significantly at 10% ($p \leq 0.10$) and 1% ($p \leq 0.001$) respectively. Hypothesis 10c, which states that there exists significantly positive impact of firm-level compliance with country-level stakeholder corporate governance provisions on firm performance, is accepted for Nigeria but rejected for South Africa irrespective of the performance proxy. The results suggest that, while Nigerian investors value firms that comply with stakeholder expectations, which are aimed at achieving some level of social equality, macroeconomic policy and environmental responsibility goals (which may not be in line with the firm's objective of creating maximum value for shareholders), the reverse is true for South African investors.

The consistent results between composite CG index and the sub-indices suggest that firms' compliance with the composite country index (NICGI and SACGI) is similar with their compliance with the two sub-indices in both countries, which is consistent with the results of the descriptive and correlations discussed in chapters 6 and 7. The results also suggest that firms highly compliant to the composite CG code, shareholder corporate disclosures and stakeholder disclosures in both countries witness increasing accounting returns. However, while firms highly compliant to the country-level corporate governance provisions, shareholder corporate governance provisions and stakeholder disclosures enjoy increasing market returns in Nigeria, in South Africa, such firms witness decreasing market returns.

Overall, theoretically, the results in both countries show the historical and contextual path dependence has produced a diversity of firm-level and country-level specific internal CG structures that may work well and improve firm financial performance within an institutional environment but may produce different effects in another. However, consistency in results for some internal CG variables, especially CGs mechanisms adopted from international best practices, may have similar impact on firm-level performance.

8.7 Summary of Chapter

This chapter focused on presenting and discussing the research findings for research questions stated in section 1.4. Specifically, this chapter achieved five main objectives. First, it examined whether better governed firms based on compliance with country-level CG guidelines (compliance index model) are associated with higher financial performance as measured by ROCE and Q-ratio (sub-research question 1). Consistent with prior single-country studies, despite the differences and similarities owing to historical, societal, formal and informal norms which have shaped the CG architecture in both countries, compliance with respective CG regulations has a positive impact on firm accounting performance (ROCE) of listed firms. On the other hand, inconsistent with prior research in South Africa, compliance with King III CG guidelines has a negative impact on firm market performance (Q-ratio), which is contrary to the positive impact of compliance with the Nigerian SEC 2011 CG code on market valuation of firms. Second, the chapter further examined the impact of alternative/individual firm-level internal CG mechanisms on firm financial performance based on the equilibrium variable model (sub-research question 2) and found consistent

mixed results across both countries. Specifically, there is a statistically strong to no association between firm-level internal CG structures and firm performance.

Third, the chapter examined the impact of a decomposition of the respective country-level CG index into two sub-indices (to capture institutionalised shareholder and stakeholder CG requirements) on firm financial performance. Similar to the results of the respective country composite indices, compliance with country-specific shareholder and contextual stakeholder provisions was found to have a positive impact on firm accounting performance. However, in South Africa, compliance with King III shareholder and stakeholder provisions is found to negatively impact on market performance, whereas, in Nigeria, higher compliance with the SEC 2011 shareholder and stakeholder provisions was found to be associated with higher firm market valuation.

Fourth, a comparison between the compliance index model and the equilibrium variable model results was examined in both countries (sub-research question 3). Results indicate the compliance index model has a superior explanatory and prognostic ability in explaining firm financial performance in both countries as compared to the equilibrium variable model. These results imply the value relevance in complying with (though expensive and laborious) composite/aggregate country-level corporate governance guidelines rather than using single firm-level corporate structures in isolation or a few of them. It suggests using CG systems as a bundle rather than as individuals.

Finally, based on the preliminary discussion of results for the individual three sub-research questions (RQ 1 to 3), the chapter summarises comparatively the results of Nigeria and South Africa based on the hypothesis developed in Chapter 4. This provides a holistic overview of hypothesis testing to examine the main research question stated in 1.4.1. Consistent with prior research, there are mixed results with respect to the impact of individual alternative internal CG mechanisms on firm financial returns in both countries. On the other hand, preliminary observation in the descriptive, correlation statistics and regressions shows that firms highly compliant to country-level composite CG provisions tend to comply highly with shareholder CG provisions and country-level stakeholder requirements in both Nigeria and South Africa. As such, the direction of firm financial performance consequence of compliance with composite country-level CG provisions is the same for institutionalised shareholder and stakeholder CG requirements.

An essential issue that the current analysis based on OLS regression ignores is the possibility of interdependence or endogeneity within the individual internal CG structures and across these mechanisms and firm financial performance. Hence the aim of the next chapter is to examine the extent to which the reported main results in this chapter are robust or sensitive to alternative explanations and estimations. As a result, robustness and/or sensitivity analysis of the reported results is thoroughly examined in the next chapter. Specifically, the results are examined within a raft of sensitivity analysis comprising of a test of endogeneity using the Durbin–Wu–Hausman Exogeneity Test, and other regression models.

<center>**CHAPTER 9**</center>

9.0 EMPIRICAL RESULTS: ROBUSTNESS AND SENSITIVITY ANALYSIS

9.1 Introduction

This chapter examines and discusses the results based on a raft of sensitivity and robustness analyses. The aim therefore is to examine whether the main results (OLS) presented in Chapter 8 are sensitive and robust to possible alternative explanations, specifically endogeneity. A variable is endogenous if it is determined within the framework of a model. On the other hand, a variable is exogenous if its values are determined outside the framework of a model but it is correlated with the dependent variable (Roberts and Whited, 2012,pp.6). As such, endogeneity exists when a variable assumed as exogenous within a model is endogenous. For example, the positive impact of compliance with respective country-level CG codes results on firm accounting performance in both Nigeria and South Africa assumes that these CG codes are not determined within the compliance index model (exogeneity assumption). However, what if the exogeneity assumption is not true for this model and compliance with respective country-level CG codes is determined by some variables in the model? Therefore, the reported results may not be a true representation of the association between compliance and firm performance. Consequently, the results will be biased and inconsistent and makes it impossible for reliable inference.

For that reason, in this chapter, the results in Chapter 8 are examined using alternative sensitivity and regression models including a test of exogeneity using Durbin–Wu–Hausman Exogeneity Test with other regression models including Instrumental Variable Model, Two Staged Least (2SLS)/Simultaneous Equation Model and Dynamic System Generalised Methods of Moments (GMM) Model. The tables of results for Durbin–Wu–Hausman Exogeneity Test and Instrumental Variable Model are reported in the appendix. The chapter is organised as follows. Section (9.2) briefly discusses the problem of endogeneity in corporate governance research. Section 9.3 discusses the results based on estimation of a Two Staged Least (2SLS)/Simultaneous Equation Model. In addition to testing robustness of the main findings, the 2SLS is employed to show the interdependence between alternative CG mechanism and firm financial performance. Section 9.4 presents the results of Dynamic System Generalised Methods of Moments (GMM) model. Finally, section 9.5 summarises and compares the robustness and sensitivity results for both South Africa and Nigeria by

comparing the robustness and sensitivity results of disclosure/compliance-firm performance relationship (compliance index model) versus the results of the 14 internal CG structures-firm performance (equilibrium variable model) association. Finally, section 9.6 summarises the chapter.

9.2 Endogeneity Problem
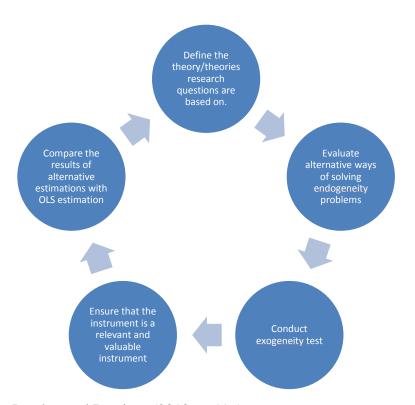
Until recently, the problem of endogeneity has been ignored in accounting and corporate governance research. Roberts and Whited (2012,pp.6) define endogeneity as 'a correlation between the explanatory variables and the error term in a regression'. In fact, according to Wintoki et al. (2012,pp.1), empirical research in corporate finance suffers from serious endogeneity problems. Wintoki et al. (2012,pp.1) opine that, while research in corporate governance has shown that certain governance systems improve firm financial performance, these studies are inundated with endogeneity concerns. Hence, this serious endogeneity issue can lead to biased and inconsistent parameters that impair the reliability of results (Roberts and Whited, 2012) . Indeed, endogeneity can be serious with possibilities of reversing statistical inference of results (Roberts and Whited, 2012). Endogeneity problems may arise because of omitted variable bias, unobserved heterogeneity (fixed effects) simultaneity and measurement error (Roberts and Whited, 2012,pp.6) . However, Wintoki et al. (2012,pp.1), note that the most noticeable type of endogeneity in corporate finance is the presence of 'unobservable heterogeneity and simultaneity'. Wintoki et al. (2012,pp.1) argue that the difficulty involved in recognising exogenous instruments/natural experiments implies that corporate governance scholars frequently depend on fixed-effects estimates and pooled panel data estimates for statistical inference.

In this research, one of the major assumptions of OLS regression is that explanatory (independent) variables are exogenously determined and are independent of past values of the explained (dependent) variable. For example, OLS regression assumes that corporate governance indices in both countries are exogenously determined and, as such, not influenced by past performance of a firm as well as other explanatory variables. Despite the discussion of endogeneity issues in corporate governance scholarship, there are still mixed reactions and disagreements as to whether endogeneity issues are a problem that needs to be considered in finance and accounting research (Ntim, 2009,pp.305, Larcker and Rusticus, 2010,pp.203) .

As a result, Larcker and Rusticus (2010,pp.203) opine 'there is no fool-proof way of dealing with the problem of endogeneity in empirical accounting research.'

However, consistent with prior research in corporate governance (e.g. Ntim, 2009, Ntim, 2013a), this study follows the five steps outlined by Larcker and Rusticus (2010,pp.196) to check for endogeneity. Briefly, Larcker and Rusticus (2010,pp.196) outline five stages to check for endogeneity, as shown below:

Fig. 8: Five Stages to Check for Endogeneity

Adapted from Larcker and Rusticus (2010,pp.196).

According to Larcker and Rusticus (2010,pp.196), the first stage for testing for endogeneity is to use rigorous economic theory to explain research questions. In this thesis, various theories have been discussed in chapters 2 and 3 and the corresponding theoretical underpinnings which guided the development of hypothesis in Chapter 4. As a result, the research has rigorously developed and specified the dependent variables (endogenous variables) and the independent variables (exogenous variables) within both the compliance index model and the equilibrium variable model. The discussions ensured clear articulation of the theoretical links between the exogenous and endogenous variables. In addition, Larcker and Rusticus

(2010,pp.195) opine that researchers should point out the possible reasons why endogeneity may be present in an OLS regression. In this respect, a priori CG literature has established that corporate governance is complex because no single theory can explain the universal pattern of results (Nicholson and Kiel, 2007). Hence, the adoption of a multi-theoretic approach in this study purposes to control for corporate governance complexities. However, some of the theories used in this thesis (though advantageous) are contradictory in some respects, which may possibly generate endogeneity problems in the OLS regression equations. As a result, this study may suffer from potential endogeneity problems which may be due to measurement errors, simultaneity or reverse causation, unobserved fixed effects, omitted variables bias and equilibrium conditions.

The second stage, according to Larcker and Rusticus (2010,pp.196), is to explore alternative ways to solve the endogeneity problems. Following from this recommendation, subsequent sections address this by estimating (1) an instrumental variable model (IV); (2) a two-stage least square (2SLS)/simultaneous equation model; and (3) a dynamic system GMM equation.

The third step prescribed by Larcker and Rusticus (2010,pp.196) involves testing for the exogeneity to ascertain if there is actually an endogeneity problem in the regression equation. Thus consistent with the suggestion by Larcker and Rusticus (2010,pp.195), and other corporate governance research (e.g. Beiner et al., 2006,pp.267, Ntim, 2009,pp.295), the commonly used Durbin–Wu–Hausman exogeneity test is conducted.

The fourth step according to Larcker and Rusticus (2010,pp.197) is to ensure that any instrument used as a proxy for the original explanatory variable is a valid, reliable and relevant instrument. As will be discussed later in the instrumental variable model and consistent with previous research (e.g. Ntim, 2013c, Ntim, 2013a), this study uses predicted values of SACGI (P-SACGI) for South Africa and NICGI (P-NICGI) for Nigeria. As will be reported later, the correlation coefficient between the various corporate governance indices correlates highly with the predicted values, demonstrating that it is a valid, reliable and relevant proxy to replace country-level composite indices.

Finally, the last step suggested by Larcker and Rusticus (2010,pp.196) is to compare the statistical significance, magnitude, signs of the OLS estimates with the results of the endogenously corrected alternative estimated regressions (e.g. IV model, 2SLS model and

dynamic system GMM equation) and verify the level and extent to which results are robust and sensitive to endogeneity issues.

The Durbin–Wu–Hausman exogeneity test (reported in table 25 in the appendix) shows that NICGI is exogenously determined in the compliance index model based on accounting returns (ROCE) but endogenously determined based on market returns (Q-ratio). For South Africa (table 27 in the appendix), SACGI is exogenously determined in the compliance index model based on market returns (Q-ratio) but endogenously determined based on accounting returns (ROCE). More so, results based on instrumental variable estimate (reported in the appendix) support the findings reported for OLS estimates in Chapter 8. Briefly, the results indicate that the main results reported for both countries in Chapter 8 are robust to possible endogeneity problems. The subsequent sections discuss robustness test using 2SLS and GMM estimation.

9.3 Simultaneous Equation Model/Two-Stage Least Square (2SLS) Model

As noted earlier, most studies in CG in Africa have investigated internal CG mechanisms and firm performance using a few CG indices and most times in isolation to each other (see column 6 in table 4). These studies have concentrated on board size, CEO duality and NEDs. According to Agrawal and Knoeber (1996) and Ntim et al. (2015a), the existence of alternative internal CG structures depicts that the use of one mechanism is dependent on the use of other structures to be effective. Thus, the use of one CG mechanism (e.g. board size or NEDs or CEO duality) in isolation to examine its impact on firm performance can lead to endogenous relationships. This is evidenced from results of the Durbin–Wu–Hausman exogeneity test for both South Africa and Nigeria which showed NICGI is endogenously related to Q-ratio while SACGI is endogenously related to ROCE. Therefore, using a single CG structure in isolation may lead to omitted variable bias and spurious associations. Therefore, because of the interdependence of different internal CG structures, a mixture of these structures may lead to maximisation of efficient results. This thesis addresses this methodological gap by employing five internal CG structures derived from both the compliance index equation and the equilibrium variable model equations. Therefore, following previous research (e.g. Agrawal and Knoeber, 1996, Beiner et al., 2006, Ntim et al., 2015a), a system of seven simultaneous equations is developed. The five internal CG mechanisms chosen are the respective country CG index (NICGI and SACGI) and four

alternative CG mechanisms from the equilibrium variable model which are not part of the composite index (NICGI and SACGI). These four alternative CG mechanisms include board size (BSZ), director shareholding (D-SH), institutional shareholding (INST-SH) and capital structure (GEAR). The latter four variables are the variables included to regress on the CGI (NICGI and SACGI) to get the predictive values for CGI (P-NICGI and P-SACGI) in the instrumental variable model.

To perform the 2SLS regression, the method employed by prior researchers (e.g. Agrawal and Knoeber, 1996, Beiner et al., 2006, Ntim et al., 2015a) was adopted. Equations 5 to 11 (discussed later) are estimated as a series of simultaneous equations. In the first-stage estimation (as will be seen later), each of the five corporate governance variables, i.e. corporate governance index (SACGI and NICGI represented by CGI in the stated equations), board size (BSZ), director shareholding (D-SH), institutional shareholding (INST-SH) and capital structure (GEAR), i.e. equations 5 to 9, is estimated along with nine control variables [(sales growth (S-GROWTH), dual listing (DUA-LIST), audit firm size (AF-SIZE), firm size (F-SIZE), total asset (TA), market value (MV), capital expenditure (CAPEX), industry dummy (INDUS) and year dummy (YD)]. The predicted values are saved for each of the corporate governance variables. In the second stage, each of the five CG mechanisms is substituted with their saved predicted values from the first-stage estimation in equation 10 (based on ROCE) and 11 (based on Q-ratio) in addition to the nine control variables. This process allows both the financial performance variables, which are also considered as endogenous in equations 5 to 9, to affect the choice of each of the five alternative internal CG variables and is affected by each of the selected internal CG variables.

To determine the relationship between financial performance and the five alternative corporate governance mechanisms, and following previous research using 2SLS regression (e.g. Beiner et al., 2006, Ntim et al., 2015a, Ntim et al., 2012), two conditions are to be satisfied: the order condition (necessary condition) and the rank condition (sufficient condition).

First, according to Chenhall and Moers (2007), the first necessary condition before a system can be identified is the order condition. Following from these researchers, the system equation in this research consists of nine exogenous (control) variables. These variables are sales growth (S-GROWTH), dual listing (DUA-LIST), audit firm size (AF-SIZE), firm size

(F-SIZE), total asset (TA), market value (MV), capital expenditure (CAPEX), industry dummy (INDUS) and year dummy (YD) and the five selected internal CG variables, i.e. corporate governance index (CGI), board size (BSZ), director shareholding (D-SH), institutional shareholding (INST-SH), and capital structure/gearing (GEAR). The order condition stipulates that the number of exogenous variables excluded from an equation should not be greater than or equal to the number of endogenous variables in the equation minus one (see Beiner et al., 2006pp.253, Chenhall and Moers, 2007,pp.189, Ntim, 2009, Ntim et al., 2012,pp.29). Following from this, therefore, a minimum of five exogenous variables in this regression is to be dropped to meet the order condition.

However, following previous research which has faced similar challenges with more exogenous variables (e.g. Beiner et al., 2006pp.253, Chenhall and Moers, 2007,pp.189, Ntim, 2009, Ntim et al., 2012,pp.29), each of the seven equations developed in the subsequent subsections is grounded independently on theory, logic and the availability of data to produce rigorous results. Hence, all seven equations are over identified, which is accepted in econometric terms (see Beiner et al., 2006, Chenhall and Moers, 2007, Ntim, 2009, Ntim et al., 2012). Finally, the rank condition requires that at least one of the excluded exogenous variables should have a non-zero coefficient. This condition is met with regard to both OLS estimates (in Chapter 8) and the instrumental variable model. Except for market value, CAPEX and total asset, which showed zero coefficient in some instances, all other variables have non-zero coefficients.

Before developing a series of simultaneous equations, the correlation between the five corporate governance variables [corporate governance index (CGI), board size (BSZ), director shareholding (D-SH), institutional shareholding (INST-SH) and capital structure (GEAR)] was conducted. These correlations are reported in the appendices in tables 26 and 28 for Nigeria and South Africa respectively.

Reading from table 27 for Nigeria, the correlations coefficients show some level of relationship among the variables. First, board size and gearing correlate significantly with NICGI, Shareholder–NICGI and Stakeholder–NICGI in both Pearson and Spearman correlations at 1% ($p \leq 0.001$). On the contrary, institutional and director shareholding showed negative relations with NICGI, but only the results of institutional shareholding are significant at 5% ($p \leq 0.05$) in Pearson correlation. This suggests that board size and gearing

are complementary internal CG mechanisms with NICGI but institutional and director shareholding and NICGI are substitutes. Board size is negatively related to both Q-ratio and ROCE but significant only with Q-ratio at 5% ($p \leq 0.05$) in both Pearson and Spearman correlations. This negative association is consistent with the results reported under OLS for Q-ratio in Chapter 8. Director shareholding showed a positive relationship with both performance variables but only significant with Q-ratio at 1% ($p \leq 0.001$) in both Pearson and Spearman correlations at 10% ($p \leq 0.10$). Institutional shareholding correlates positively with both performance measures significantly at 1% ($p \leq 0.001$) for Spearman correlation. But it is 10% ($p \leq 0.10$) for ROCE and 1% ($p \leq 0.001$) for Q-ratio in Pearson correlation. The correlation results of institutional shareholding confirm the results of the OLS estimate with Q-ratio but contradict the results of ROCE. Finally, gearing showed positive correlation with Q-ratio but negative with ROCE, but only the correlation with ROCE is significant at 1% ($p \leq 0.001$) for Pearson correlation, while both are significant at 1% ($p \leq 0.001$) in Spearman correlation. This is consistent with the results reported in chapter 8 for   OLS regression.

On the contrary, in South Africa, SACGI, Shareholder–SACGI and Stakeholder–SACGI correlate positively with the four alternative CG mechanisms. The exception is a negative correlation with director shareholding in Spearman correlation. SACGI significantly and positively associates to board size at 1% ($p \leq 0.001$) in both Pearson and Spearman correlations. These suggest that board size, director shareholding, and institutional shareholding and gearing are complementary internal CG mechanisms with SACGI. Director shareholding positively correlates with SACGI in Pearson correlation but is negatively correlated in Spearman correlation, though both coefficients are insignificant. Institutional shareholding and gearing show a positive association with SACGI in both Pearson and Spearman correlations but significant only in Pearson correlation at 5% ($p \leq 0.05$) and 10% ($p \leq 0.10$) respectively. Board size and director shareholding are negatively correlated to both Q-ratio and ROCE but significant only in Pearson correlation at 10% ($p \leq 0.10$) for the latter. However, director shareholding shows significant correlation in Spearman correlations at 5% ($p \leq 0.05$) and 10% ($p \leq 0.10$) for ROCE and Q-ratio respectively. Gearing has negative correlation with both performance measures but significant only in Pearson correlation at 5% ($p \leq 0.05$). These negative relationships support the OLS results reported in Chapter 8 for board size, director shareholding, institutional shareholding and gearing.

Drawing from the correlation results as noted above, a system of seven simultaneous equations was developed as follows:

Corporate Governance Index (CGI) Equation

First, the country CG index equation is stated following prior research (e.g. Beiner et al., 2006, Chenhall and Moers, 2007, Ntim, 2009, Ntim et al., 2012). The country corporate governance index (CGI) is assumed to be endogenously associated with firm performance but complemented or substituted by four alternative CG structures including board size (BSZ), director shareholding (D-SH), institutional shareholding (INST-SH) and capital structure (GEAR). In addition, it is also predicted by nine exogenous/control variables, i.e. sales growth (S-GROWTH), dual listing (DUA-LIST), audit firm size (AF-SIZE), firm size (F-SIZE), total asset (TA), market value (MV), capital expenditure (CAPEX), industry dummy (INDUS) and year dummy (YD). Therefore, assuming a linear relationship between these variables, the first equation is stated as:

$$CGI_{it} = \delta_{it} + \beta_1 P_{it} + \beta_2\, BSZ_{it} + \beta_3\, D\text{-}SH_{it} + \beta_4\, INST\text{-}SH_{it} + \beta_5\, GEAR_{it}$$
$$+\beta_6 S\text{-}GROWTH_{it} + \beta_7\, DUA\text{-}LIST_{it} + \beta_8\, AF\text{-}SIZE_{it} + \beta_9\, F\text{-}SIZE_{it} + \beta_{10} TA_{it} + \beta_{11}\, MV_{it} + \beta_{12}\, CAPEX_{it} + \sum_{t=1}^{n} \beta_{13}\, INDUS_{it} + \sum_{t=1}^{n} \beta_{14}\, YD_{it} + U_{it} \dots (5)$$

Board Size (BSZ) Equation

As discussed in Chapter 4 and empirically verified for both countries in Chapter 8, board size can affect firm performance negatively or positively. Similarly, board size as an internal CG mechanism is expected to be positively impacted by control variables, i.e. sales growth (S-GROWTH), dual listing (DUA-LIST), audit firm size (AF-SIZE), firm size (F-SIZE), total asset (TA), market value (MV), capital expenditure (CAPEX), industry dummy (INDUS) and year dummy (YD). In addition, assuming a linear relationship, the four alternative CG mechanisms (i.e. CGI, director shareholding (D-SH), institutional shareholding (INST-SH) and capital structure (GEAR)) are expected to complement or substitute board size as shown in the correlation results in tables 26 and 28 and with the performance variables (P), hence the equation is stated as:

$$BSZ_{it} = \delta_{it} + \beta_1 P_{it} + \beta_2 CGI_{it} + \beta_3\, D\text{-}SH_{it} + \beta_4\, INST\text{-}SH_{it} + \beta_5\, GEAR_{it}$$
$$+\beta_6 S\text{-}GROWTH_{it} + \beta_7\, DUA\text{-}LIST_{it} + \beta_8\, AF\text{-}SIZE_{it} + \beta_9\, F\text{-}SIZE_{it} + \beta_{10} TA_{it} + \beta_{11}\, MV_{it} + \beta_{12}\, CAPEX_{it} + \sum_{t=1}^{n} \beta_{13}\, INDUS_{it} + \sum_{t=1}^{n} \beta_{14}\, YD_{it} + U_{it} \dots (6)$$

Director Shareholding (D-SH) Equation

Similarly, director shareholding has been reported to impact both negatively and positively on firm performance. Some authors have reported increase in agency cost and negatively director ownership- firm financial association (e.g. Klein et al., 2005), while others have shown director shareholding impacts positively in aligning the interest of managers and shareholders and therefore impacts firm performance positively (Brickley et al., 1988, Chung and Pruitt, 1996, Jensen and Murphy, 1990, Mehran, 1995). Consequently and assuming a linear relationship following from the OLS results reported in Chapter 8 for director shareholding, it is therefore expected to be impacted by the nine control variables, i.e. sales growth (S-GROWTH), dual listing (DUA-LIST), audit firm size (AF-SIZE), firm size (F-SIZE), total asset (TA), market value (MV), capital expenditure (CAPEX), industry dummy (INDUS) and year dummy (YD). Similarly, from correlation results reported in tables 26 and 28, it is expected that, in a linear equation, director shareholding will be a substitute or complement to other internal CG structures, including CGI, board size (BSZ), institutional shareholding (INST-SH) and capital structure (GEAR). Similarly, it is also impacted by the financial performance variables (P). The equation is stated as follows:

$$D\text{-}SH_{it} = \delta_{it} + \beta_1 P_{it} + \beta_2 CGI_{it} + \beta_3 BSZ_{it} + \beta_4 INST\text{-}SH_{it} + \beta_5 GEAR_{it}$$
$$+ \beta_6 S\text{-}GROWTH_{it} + \beta_7 DUA\text{-}LIST_{it} + \beta_8 AF\text{-}SIZE_{it} + \beta_9 F\text{-}SIZE_{it} + \beta_{10} TA_{it} + \beta_{11} MV_{it} + \beta_{12} CAPEX_{it} + \sum_{t=1}^{n} \beta_{13} INDUS_{it} + \sum_{t=1}^{n} \beta_{14} YD_{it} + U_{it}.. (7)$$

Institutional Shareholding (INST-SH) Equation

Similar to director shareholding, institutional shareholding has been reported to have positive association with firm performance (e.g. Shleifer and Vishny, 1997, Klein et al., 2005, Elyasiani and Jia, 2010, Ntim, 2012a). Meanwhile, others have shown negative or no relationship (e.g. Chen et al., 2008). Accordingly, a linear relationship from the OLS results reported in Chapter 8 for institutional shareholding shows some mix results. It is expected that institutional shareholding is affected by the performance variables (P) in addition to the nine control variables, i.e. sales growth (S-GROWTH), dual listing (DUA-LIST), audit firm size (AF-SIZE), firm size (F-SIZE), total asset (TA), market value (MV), capital expenditure (CAPEX), industry dummy (INDUS) and year dummy (YD). Likewise, from correlation results reported in tables 26 and 28 in the appendix, it is expected that, in a linear equation, institutional shareholding is substituted or complemented with internal CG structures

including CGI, board size (BSZ), director shareholding (D-SH) and capital structure (GEAR). Hence, the next equation is stated as follows:

$$INST\text{-}SH_{it} = \delta_{it} + \beta_1 P_{it} + \beta_2 CGI_{it} + \beta_3 BSZ_{it} + \beta_4 D\text{-}SH_{it} + \beta_5 GEAR_{it}$$
$$+ \beta_6 S\text{-}GROWTH_{it} + \beta_7 DUA\text{-}LIST_{it} + \beta_8 AF\text{-}SIZE_{it} + \beta_9 F\text{-}SIZE_{it} + \beta_{10} TA_{it}$$
$$+ \beta_{11} MV_{it} + \beta_{12} CAPEX_{it} + \sum_{t=1}^{n} \beta_{13} INDUS_{it} + \sum_{t=1}^{n} \beta_{14} YD_{it} + U_{it} \dots (8)$$

Gearing (GEAR) Equation

According to Jensen and Meckling (1976) and Jensen (1986), firm performance can be adversely affected by the equity-to-debt ratio which is essentially linked to agency costs. In fact, these authors argue that some level of debt can motivate managers to increase efficiency and enhance a firm's ability to survive (Jensen, 1986, p.324). More so, interest payment on debts is tax deductible and, as a result, highly geared firms are expected to generate more value than lowly geared firms. However, it has also been argued that where risk of default occurs causing a conflict between equity and debt investors, this may create debt overhang where an increase in debt has a negative effect on the firm value (Myers, 1977, Jensen, 1986b, Stulz, 1990). Consequently, lowly geared firms will perform better than highly geared firms. These differences as opined in the extant literature can be seen in the results reported in Chapter 8 for gearing in the equilibrium variable model. For example, in Nigeria and South Africa, highly geared firms are more strongly associated with positive market returns but negative accounting returns than lowly geared firms. Deducing from this, gearing is assumed to be linearly impacted by the nine control variables, i.e. sales growth (S-GROWTH), dual listing (DUA-LIST), audit firm size (AF-SIZE), firm size (F-SIZE), total asset (TA), market value (MV), capital expenditure (CAPEX), industry dummy (INDUS) and year dummy (YD), and the firm financial performance variables (P). In addition, gearing is substituted or complemented with other alternative internal CG mechanisms i.e. GI, board size (BSZ), director shareholding (D-SH) and institutional shareholding (INST-SH). Therefore, the gearing equation is stated as:

$$GEAR_{it} = \delta_{it} + \beta_1 P_{it} + \beta_2 CGI_{it} + \beta_3 BSZ_{it} + \beta_4 D\text{-}SH_{it} + \beta_5 INST\text{-}SH_{iit}$$
$$+ \beta_6 S\text{-}GROWTH_{it} + \beta_7 DUA\text{-}LIST_{it} + \beta_8 AF\text{-}SIZE_{it} + \beta_9 F\text{-}SIZE_{it} + \beta_{10} TA_{it}$$
$$+ \beta_{11} MV_{it} + \beta_{12} CAPEX_{it} + \sum_{t=1}^{n} \beta_{13} INDUS_{it} + \sum_{t=1}^{n} \beta_{14} YD_{it} + U_{it} \dots (9)$$

Financial Performance (P) Equation

Finally, to determine the relationship between financial performance and the five alternative corporate governance mechanisms and following previous research using 2SLS regression (e.g. Beiner et al., 2006, Ntim, 2012a, Ntim et al., 2012, Ntim, 2013c), the final pair of equations are the financial performance variables as dependent variables. The equation for ROCE is stated as:

$$ROCE_{it} = \delta_{it} + \beta_1 CGI_{it} + \beta_2 BSZ_{it} + \beta_3 D\text{-}SH_{it} + \beta_4 INST\text{-}SH_{it} + \beta_5 GEAR_{it} + \beta_6 S\text{-}GROWTH_{it} + \beta_7 DUA\text{-}LIST_{it} + \beta_8 AF\text{-}SIZE_{it} + \beta_9 F\text{-}SIZE_{it} + \beta_{10} TA_{it} + \beta_{11} MV_{it} + \beta_{12} CAPEX_{it} + \sum_{t=1}^{n} \beta_{13} INDUS_{it} + \sum_{t=1}^{n} \beta_{14} YD_{it} + U_{it} \ldots (10)$$

Q-ratio equation is stated as:

$$Q\text{-}ratio_{it} = \delta_{it} + \beta_1 CGI_{it} + \beta_2 BSZ_{it} + \beta_3 D\text{-}SH_{it} + \beta_4 INST\text{-}SH_{it} + \beta_5 GEAR_{it} + \beta_6 S\text{-}GROWTH_{it} + \beta_7 DUA\text{-}LIST_{it} + \beta_8 AF\text{-}SIZE_{it} + \beta_9 F\text{-}SIZE_{it} + \beta_{10} TA_{it} + \beta_{11} MV_{it} + \beta_{12} CAPEX_{it} + \sum_{t=1}^{n} \beta_{13} INDUS_{it} + \sum_{t=1}^{n} \beta_{14} YD_{it} + U_{it} \ldots \ldots \ldots (11)$$

The next subsections present the results of 2SLS regression for Nigeria and South Africa respectively.

9.3.1 Simultaneous Equation Model/Two-Stage Least Square (2SLS) Model Results for Nigeria

As can be read from table 29 below, the F-values from equation 5 to 9 columns 3 to 7 for ROCE and columns 9 to 13 for Q-ratio are statistically significant at 1% ($p \leq 0.001$). Therefore, the null hypothesis that coefficients of the exogenous variables for each of the regressions in columns 4 to 6 for ROCE and columns 9 to 13 for Q-ratio are zero is rejected. As a result, the coefficients of the independent variables in each of the regressions can explain considerable changes in NICGI, board size, director shareholding, institutional shareholding and gearing. The adjusted R^2 for ROCE ranges from 34.4% to 48.5%, whereas for Q-ratio it ranges from 34.6% to 49.6%.

These adjusted R^2 are like those reported by prior studies. For example, Ntim et al. (2015a,pp.17), using five alternative CG mechanisms reported adjusted R^2 range from 13.4%

to 39.6% for Q-ratio. With regard to ROCE, Beiner et al. (2006,pp.265) reported adjusted R^2 ranging from 41% to 44% for five alternative CG mechanisms. Similarly, Cornett et al. (2009,pp.425), employing five alternative CG mechanisms, reported adjusted R^2 of 52.4% to 58.7%.

The results presented in table 29 columns 3 to 7 for ROCE and columns 9 to 13 for Q-ratio show some interesting patterns. First, NICGI is significantly positively impacted only by board size in both the ROCE and Q-ratio 2SLS estimates. On the other hand, institutional shareholding impacts negatively and significantly on NICGI. However, gearing also shows a significant negative relationship with NICGI in the Q-ratio 2SLS estimate in column 9. Director shareholding shows positive but insignificant impact on NICGI. The significant results between NICGI and board size under both ROCE and Q-ratio suggest that they supplement each other. This suggests that larger boards comply more with CG guidelines. However, the significant negative gearing–NICGI and institutional shareholding–NICGI association suggests that both gearing and institutional shareholding are substitutes to NICGI. This supports the premise that a greater usage of one CG mechanism leads to a lesser usage of another. Hence, where there is poor internal corporate governance structure, firms are more inclined to seek debt finance to equity finance. Similarly, owing to concentrated ownership in African economies, owners are able to influence non-compliance with CG provisions especially if they do not see the value relevance of compliance. The results of the relationship between NICGI and gearing are contrary to findings of Ntim (2013c), who reported a positive relationship in South Africa. However, the results on NICGI and board size are consistent with the results of Ntim et al. (2012,pp.52).

Columns 4 and 9 shows that NICGI is significantly positively impacted by both ROCE and Q-ratio. Therefore, there is a reverse relationship between NICGI and both performance variables. This implies that firms that comply with SEC 2011 CG guidelines do not only experience increasing market and accounting returns, but there is reverse causation where firms with high market and accounting returns put in place better CG structures.

With regard to board size (columns 4 and 10), board size is significantly positively impacted by NICGI and gearing under 2SLS estimates of both financial measures. Contrarily, director shareholding negatively affects board size significantly. On the other hand, institutional shareholding negatively affects board size under ROCE 2SLS estimate though positively

under Q-ratio 2SLS estimate, but both results are insignificant. The statistically significant relationship between board size and NICGI and board size and gearing indicate that there is a complementary association between board size with gearing and NICGI. This means that, because of the resource links of larger boards, cheaper debt finance is available to such firms. The results of board size and gearing are consistent with the results of Ntim et al. (2015b,pp.29), but these authors reported statistically insignificant results. Conversely, the negative impact of director shareholding on board size implies that they are substitutes and suggests firms with director share ownership tend to prefer smaller boards. Finally, the impact of both performance variables on board size is negative but statistically significant only with Q-ratio. This indicates that firms with high market and accounting returns have smaller boards, as it may be costly to run larger boards. This result contradicts the results of Ntim et al. (2015b,pp.29), who reported positive impact of Q-ratio on board size.

With reference to director shareholding results (columns 5 and 11), NICGI and institutional shareholding show positive impact on director shareholding. Whereas director shareholder is negatively affected by board size but only the results of institutional shareholding and board size are significant. Similarly, gearing shows positive insignificant impact on director shareholding under Q-ratio 2SLS but negative under ROCE 2SLS. The significant results between institutional shareholding and director shareholding suggest that they complement each other. The latter results of institutional shareholding–director shareholding association indicate that institutional shareholders, as a result of their strong incentive to monitor managers/directors, ensure directors' interest is aligned with theirs by requiring directors to own shares in the firm. Contrarily, negative board size–director shareholding association suggests substitutability between them and implies larger boards tend to limit director share ownership. In addition, both performance variables show negative impact on director shareholding insignificantly. This shows firms with increasing accounting and market returns do not value director share ownership as the latter may give directors autonomy to take risky and unprofitable strategies.

With respect to institutional shareholding (columns 6 and 12), board size insignificantly affects institutional shareholding positively under Q-ratio 2SLS but negatively under ROCE 2SLS. However, NICGI and gearing negatively affect institutional shareholding, whereas director shareholding positively affects institutional shareholding, but only the impact of NICGI and director shareholding is significant. The latter results show that firms that adopt

sound CG practices as measured by their compliance with SEC 2011 CG code are less likely to have institutional investors. The significant results between NICGI and institutional shareholding indicate that they substitute each other. As a result, firms that adopt better CG practices may not value the presence of institutional shareholders. On the other hand, the positive impact of director shareholding on institutional shareholding indicates that they complement each other. Finally, both ROCE and Q-ratio show positive impact on institutional shareholding; however, only the results of the latter are significant. This demonstrates that more successful firms are attractive to institutional shareholders. The positive Q-ratio impact on institutional shareholdings is consistent with those reported by Ntim et al. (2015b,pp.29), though they reported statistically insignificant coefficients.

Furthermore, gearing results are presented in columns 7 and 13. They show that NICGI and institutional shareholding impact negatively on gearing; meanwhile, board size and director shareholding show positive relationships with gearing. The only significant result across both 2SLS is the NICGI–gearing association, whereas the director shareholding–gearing association is significant only in the Q-ratio 2SLS. The NICGI–gearing relationship suggests substitutability between NICGI and gearing. This implies firms with good corporate governance practices are not necessarily better positioned to raise debt finance at a cheaper cost than poorly governed firms. On the other hand, the director shareholding–gearing association implies they are complementary mechanisms. This association suggests firms with director ownership prefer debt finance to equity finance. Finally, gearing is impacted positively by Q-ratio but negatively by ROCE significantly. This suggests that firms with increasing accounting returns do not seek debt finance because of the high cost of financial distress and lower flexibility associated with debt finance. However, the positive Q-ratio gearing relationship indicates that highly geared firms are seen by the market as an alternative CG mechanism and therefore are more highly valued than lowly geared firms.

The 2SLS aimed at verifying whether results presented in Chapter 8 are robust to endogeneity concerns especially simultaneity. As such, regression of the performance variables is presented in column 8 for ROCE and column 14 for Q-ratio. The adjusted R^2 for ROCE is 91.4% and for Q-ratio is 45.3% with both having significant F-statistics at 1%.

Results indicate that NICGI is positively and significantly associated with accounting and market returns. This supports the OLS results reported in Chapter 8 that better governed firms

experience both increasing accounting and market returns more than poorly governed firms. However, board size is negatively associated with ROCE significantly but positively associated with Q-ratio. These results are inconsistent with those reported in the OLS estimates in section 8.3.1; therefore, the OLS results in relation to board size may be sensitive to unobserved firm-level individualities and simultaneity.

Director shareholding showed a positive significant relationship with Q-ratio but a negative significant impact on ROCE. The results of ROCE are consistent with the results reported in 8.3.1 in Chapter 8, whereas, like board size, the negative insignificant impact of director shareholding on Q-ratio in the OLS estimate is not supported by the 2SLS estimate. Consequently, the presence of endogeneity in the director shareholding–Q-ratio association may have limited the significance of this relationship. Institutional shareholding from column 14 shows a positive significant impact on Q-ratio, which is consistent with the OLS estimate results reported in 8.3.1 and is therefore robust to endogeneity. However, positive significant impact of institutional shareholding on ROCE does not support the positive insignificant results of the OLS estimate reported in 8.3.1. Finally, from column 8, gearing is negatively associated with ROCE, which is consistent with the results reported in 8.3.1. Hence, the results based on the impact of gearing on accounting returns reported in Chapter 8 are robust to endogeneity. Nevertheless, the positive significant association between gearing and Q-ratio is not consistent with the insignificant relationship reported for the OLS estimate.

In summary, the 2SLS results show the existence of significant interdependence or simultaneity of between and among the five alternative CG mechanisms and performance variables. The results based on ROCE are generally consistent in both OLS and 2SLS estimates whereas Q-ratio results are slightly sensitive to endogeneity.

Table 29: Nigerian Two-Stage Least Square Regression Results Based on Accounting Performance Measure (ROCE) and Market Performance Measure(Q-ratio) – All (400) Firm Years

	Exp Sign	Estimation Based on Accounting Performance Measure (ROCE)						Estimation Based on Market Performance Measure (Q-ratio)					
		NICGI (5)	Board Size (6)	Director shareholding (7)	Institutional Shareholding (8)	Gearing (9)	ROCE (10)	NICGI (5)	Board Size (6)	Director shareholding (7)	Institutional Shareholding (8)	Gearing (9)	Q-ratio (10)
R-Square (R^2)		.492	.512	.382	. .378	.389	.919	.484	.522	.380	.398	.381	.482
Adjusted R^2		.464	.485	.348	.344	.355	.914	.455	.496	346	.365	.347	.453
F-value		17.45(.000)***	18.9(.000)***	11.12(.000)***	10.95(.000)***	9.430(.000)***	203.82(.000)***	16.89(.000)***	19.68(.000)***	11.04(.000)***	11.94(.000)***	11.1(.000)***	16.75(.000)***
Standard Error		12.231	2.171	22.375	18.526	31.402	6.795	12.329	2.149	22.405	18.217	31.600	1.379
Durbin–Watson		1.707	1.741	1.095	1.055	1.071	1.056	1.711	1.800	1.079	1.069	1.076	1.130
Highest VIF Score		5.455	10.770	10.770	10.770	10.770	9.545	6.071	10.254	10.20	10.254	10.255	9.544
No of observations		400	400	400	400	400	400	400	400	400	400	400	400
Constant		45.810(.000)***	4.502(.000)***	-9.105(.236)	42.364(.000)***	-39.784(.002)***	-123.45(.000)***	45.607(.000)***	4.545(.000)***	-8.289(.281)	53.258(.000)***	-42.588(.001)***	. 3.402(.035)**
NICGI		-	.055(.000)***	.110(.240)	-.127 (.102)*	-.304 (.024)**	1.094(.000)**	-	.055(.000)***	.098(.291)	-.145 (.056)**	- 410 (.002)***	.048(.023)**
Board Size	+/-	1.758(.000)***	-	-1.148(.030)**	-.232 (.597)	. 1.120(.178)	-9.158(.000)***	1.819(.000)***	-	-1.191(.026)**	.007(.987)	1.358(.105)*	.374(.001)***
Director Shareholding	+/-	.033(.240)	-.010(.003)***	-	.358(.000)***	.019(.789)	-.688 (.000)***	.029(.291)	-.010 (.026)**	-	.353(.000)***	.045(.532)	.050(.000)***
Institutional Shareholding	+/-	-.05(.102)*	-.003(.597)	.523(.000)***	-	-125 (.150)	-.227(.000)***	-.066(.056)**	.000(.987)	.534(.000)***	-	-.167(.060)*	.036(.000)***
Gearing	+/-	-.022(239)	.016(.000)***	-.003 (.925)	-.036 (.204)	-	-2.696(.000)***	-.035(.059)**	.017(.000)***	.007(.818)	-.044 (.115)	-	.138(.000)***
ROCE		.091(.002)***	-.005 (.276)	-.076(.158)	.012(.791)	-.233(.000)***	-	-	-	-	-	-	-
Q-Ratio		-	-	-	-	-	-	.724(.068)*	-.207(.003)***	-.715 (.322)	2.080(.000)**	2.227(.030)**	-
Sales Growth	+/-	-.036(.252)	-.000(.963)	-.003(.949)	.001(.984	.151(.064)*	.494(.000)***	-.023(.463)	-.001(.813)	-.015 (.791)	.005(.910)	.121(.136)	-.158 (.000)***
Dual Listing	+/-	1.605(.598)	1.694(.002)***	7.723(.165)	-.816(.859)	-15.373(.049)**	-25.348(.000)***	2.197(.474)	1.56(.003)***	7.227(.195)	.072(.987)	-15.205(.053)**	.476(.263)
Audit Firm Size	+/-	7.042(.001)***	-.203(.492)	14.470(.000)***	-.020 (.993)	1.713(.697)	4.735(.001)***	7.717(.000)***	-.166 (.564)	14.084(.000)***	-.774(.753)	-1.806(.681)	-.171 (.565)
Firm Size	+/-	6.666(.002)***	1.090(.001)***	-12.575(.000)***	7.229(.009)***	12.660(.012)***	31.213(.000)***	6.521(.000)***	1.123(.000)**	-12.371(.000)***	6.470(.017)***	11.679(.022)**	-1.257(.000)***
Total Asset	+/-	.000(.534)	-.000(.339)	.000(.106)*	-.000(.967)	.000(.007)***	.000(.000)***	.000(.417)	-.000(.251)	.000(.128)	.000(.867)	.000(.000)***	-.000(.000)***
Market Value	+/-	-.000(.769)	-.000(.757)	.000(.288)	-.000(.915)	-.000(.000)***	-.000(.000)***	-.000(.593)	.000(.668)	.000(.236)	-.000(.299)	-.000(.000)***	.000(.000)***
Capital Expenditure	+/-	.000(.712)	.000(.103)*	.000(.780)	.000(.289)	.000(.016)***	.000(.000)***	.000(.555)	.000(.264)	.000(.863)	.000(.106)*	.000(.005)***	-.000(.000)***
Agriculture/Consumer Goods		-3.336(.125)	1.144(.003)***	-1.586(.691)	5.744(.081)*	-7.034(.222)	-2.524(.090)*	-2.528(243)	1.14(.002)***	-2.263(.566)	4.774(.136)	-11.727(.040)**	1.595(.000)***
Finance Industry		2.220(.276)	1.774(.000)***	6.41(.085)*	-12.403(.000)***	-16.822(.004)***	-32.489(.000)***	2.938(.156)	1.578(.000)***	5.778(.125)	-10.482(.001)***	-16.95(.004)***	1.348(.000)***
ICT/Real Estate		-5.015(.079)*	.745(.142)	21.335(.000)***	-.498 (.909)	-5.619(.470)	14.707(.000)***	-4.045(.157)	.684(.169)	20.525(.000)***	-.581(.891)	-9.942(.201)	.174(.634)
Industrial/Conglomerate		-3.830(.208)	.193(.721)	-9.116(.101)*	.669(.885)	2.985(.711)	10.505(.000)***	-3.223(.296)	.021(.967)	-9.786(.080)*	2.269(.619)	3.638(.655)	-.319(.422)
Natural Resource/Oil & Gas		-5.182(.062)**	-1.410(.004)***	5.674(.264)	-5.465(.194)	7.489(.331)	21.251(.000)***	-3.456(207)	-1.501(.002)***	4.167(.403)	-4.941(.222)	1.965(.796)	.736(.070)*
Year 2011		-3.235(.097)*	.064(.853)	1.281(.720)	-2.877(.333)	-2.576(.607)	-2.737(.017)***	-3.837(.050)**	.125(.715)	1.764(.621)	-3.200(.270)	-1.908(.705)	.351(.130)
Year 2013		2.367(.235)	-.070(.842)	10.531(.004)***	-3.234(.284)	1.573(.759)	6.886(.000)***	2.126(.291)	-.017(.960)	10.816(.00)***	-3.581(.228)	1.384(.789)	-.543 (.039)**
Year 2014		6.001(.002)***	-.236(.505)	5.689(.119)	1.264(.676)	6.943(.175)	13.238(.000)***	5.651(005)***	-.194 (.597)	6.085(.095)	1.049(.724)	7.962(.121)	-1.460(.000)***
Year 2015		12.281(.000)***	-.802(.029)**	2.485(.513)	3.137(.318)	6.217(.243)	-4.616(.008)***	11.495(.000)***	-.664(.067)*	3.356(.374)	2.155(.484)	7.180(.179)	-.779(.023)**

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. More so, to avoid dummy variable trap, year 2012 and health care/consumer goods industry are excluded from the regression analysis. They are both used as base year dummy and base industry dummy for comparison reasons. As explained in 9.3, to limit endogeneity issues, a system of seven simultaneous equations was developed for Nigeria. In the first-stage estimate, each of the five corporate governance variables [i.e. Nigerian corporate governance index (NICGI), board size (BSZ), director shareholding (D-SH), institutional shareholding (INST-SH) and capital structure (GEAR)] are estimated along with the nine control variables [(sales growth (S-GROWTH), dual listing (DUA-LIST), audit firm size (AF-SIZE), firm size (F-SIZE), total asset (TA), market value (MV), capital expenditure (CAPEX), industry dummies (INDUS) and year dummies (YD)]. The predicted values are saved as instruments for each of the corporate governance variables. In the second stage, each of the five CG mechanisms are substituted with their saved predicted values from the first-stage estimation in equations 10 (based on ROCE) and 11 (based on Q-ratio) in addition to the nine control variables.

9.3.2 Simultaneous Equation Model/Two Staged Least Square (2SLS) Model Results for South Africa

The results of 2SLS estimation are reported in table 30 below. The F-values for equations 5 to 9 in table 30 below, columns 3 to 7 for ROCE and columns 9 to 13 for Q-ratio, are statistically significant at 1% ($p \leq 0.001$). Consequently, the null hypothesis that coefficients of the independent variables for each of the regressions in columns 3 to 7 for accounting returns (ROCE) and columns 9 to 13 for market returns (Q-ratio) are equal to zero is not accepted. Therefore, the coefficients of the exogenous variables in each of the regressions substantially and significantly explain variations in SACGI, board size, director shareholding, institutional shareholding and gearing. The adjusted R^2 for ROCE estimates ranges from 9.1% to 55.7%, while, for Q-ratio estimations, it ranges from 10.1% to 49.2%. The adjusted R^2 are similar to those reported for Nigeria in subsection 9.5.1 and by prior studies. For instance, Ntim et al. (2015b,pp.1), using five alternative CG mechanisms in South Africa, reported adjusted R^2 range from 13.4% to 39.6% for Q-ratio. Similarly, Beiner et al. (2006,pp.265) reported adjusted R^2 ranging from 41% to 44% for six alternative CG mechanisms.

From the results presented in table 30, columns 3 to 6 for ROCE and columns 9 to 13 for Q-ratio, SACGI shows a positive relationship with the other four alternative CG mechanisms but only the board size–SACGI relationship is significant in both the ROCE and Q-ratio estimations. The positive impact of the four alternative CG structures with SACGI (albeit insignificant for some) suggests alternative CG mechanisms are complementary with SACGI, but more significantly with board size. Like the Nigerian results, this supports the expectation that larger boards improve compliance with CG principles. The gearing–SACGI association is consistent with the findings of Ntim et al. (2012,pp.52) in South Africa. More so, the results of the SACGI–board size link are consistent with the results reported by Ntim et al. (2012,pp.52) in South Africa.

In relation to the performance variables, columns 4 and 9 show that SACGI is significantly positively affected by ROCE but negatively affected by Q-ratio. Hence, similar to Nigeria, there is a reverse relationship between SACGI and accounting performance but inverse association with market performance. This suggests that firms with increasing accounting returns put in place better CG structures. Contrarily, firms with high market returns have poor CG structures.

The regression of board size as the dependent variable is reported in columns 4 and 10. These results suggest that SACGI, institutional shareholding and gearing positively affect board size, but only SACGI is significant across both financial measures, whereas institutional shareholding is significant only under Q-ratio 2SLS. In contrast, and similar to the Nigerian results, director shareholding negatively affects board size, but the results are insignificant irrespective of the performance estimate. The statistically significant SACGI–board size and institutional shareholding–board size relationship indicates that there is a complementary association between board size and SACGI and board size–institutional shareholding. This implies compliance with King III CG regulations is associated with increase in board size. In addition, institutional shareholders are more likely to advocate for an increase in board size. The insignificant gearing–board size results are consistent with the insignificant results reported by Ntim et al. (2015b,pp.29) in South Africa. Finally, similar to the Nigerian results, the impact of Q-ratio and ROCE on board size is negative and statistically significant. This indicates that firms with high market and accounting returns do not necessarily have larger boards. In addition, these findings are contrary to those reported in South Africa by Ntim et al. (2015b,pp.29), who reported positive impact of Q-ratio on board size.

Columns 5 and 11 show results based on director shareholding as dependent variable. SACGI and institutional shareholding have a positive impact on director shareholding, but only the impact of the latter is significant in both columns 5 and 11, while SACGI–director shareholding impact is significant only in column 5, whereas director shareholding is negatively affected by gearing and board size insignificantly. The significant positive SACGI–director shareholding and institutional shareholding–director shareholding association suggests that they complement each other. Like Nigeria, the results of the institutional shareholding–director shareholding link imply institutional shareholders in South Africa use director shareholding as a mechanism to align the interest of directors with theirs. In addition, the SACGI–director shareholding impact implies that firms with good CG structures tend to encourage director shareholding to align the interest of directors with that of stockholders. Similar to Nigeria, performance variables in South Africa impact negatively on director shareholding but insignificantly. The negative impact suggests firms with increasing accounting and market returns do not value director share ownership as the latter may give directors autonomy to make risky and unprofitable decisions.

Table 30: South African Two-Stage Least Square Regression Results Based on Accounting Performance Measure (ROCE) and Market Performance Measure(Q-ratio) for all (500) Firm Years

	Exp Sign	Estimation Based on Accounting Performance Measure (ROCE)						Estimation Based on Market Performance Measure (Q-ratio)					
		SACGI (5)	Board Size (6)	Director shareholding (7)	Institutional Shareholding (8)	Gearing (9)	ROCE (10)	SACGI (5)	Board Size (6)	Director Shareholding (7)	Institutional Shareholding (8)	Gearing (9)	Q-ratio (11)
R-Square (R²)		.367	.557	.174	.273	.129	.694	.354	.492	.172	.264	.139	.469
Adjusted R²		.334	.538	.138	.242	.091	.681	.326	.469	.135	.232	.101	.445
F-value		13.19(.000)***	28.620.000)***	4.3810(.000)***	8.560(.000)***	3.400(.000)***	51.667(.000)***	12.51(.000)***	22.02(.000)***	4.71(.000)***	8.180.000)***	3.660(.000)***	20.060(.000)***
Standard Error		6.696	2.266	22.909	15.189	31.527	14.681	6.761	2.427	22.949	15.284	31.370	.732
Durbin–Watson		0.733	.712	.838	.812	.705	2.000	.722	0.726	.825	.826	0.693	1.827
Highest VIF Score		3.657	4.956	5.072	4.948	5.073	8.034	4.459	3.651	4.547	4.402	4.550	8.0342
No of observations		500	500	500	500	500	500	500	500	500	500	500	500
Constant		68.443(.000)***	-7.675(.000)***	-15.210(.339)	64.644(.000)***	-23.06(.318)	-210.336(.000)***	72.886 (.000)***	1.562(.293)	-16.000(.255)	57.708(.000)***	11.605(.558)	17.083(.000)***
SACGI		-	0.035(.024)**	.131(.411)	.113(.289)	0.293(.184)	5.430(.000)***	0.475 (.000)***	0.063(.000)***	.0858(.578)***	0.064(.532)	.337(.112)	-0.244(.000)***
Board Size	+/-	0.589 (.000)***	-	-0.562(.228)	.352(.253)	-0.100 (.875)	-8.397(.000)***	0.0120 (.375)	-	-0.585(.175)	0.572(.044)**	0.268(.647)	-0.140 (.012)***
Director Shareholding	+/-	0.012 (.346)	-0.005(.207)	-	.209(.000)***	. -0.040 (.528)	0.608(.000)***	0.012(.532)	-0.006(.175)	-	0.222 (.000)***	-0.037(.551)	-0.032(.000)***
Institutional Shareholding	+/-	0.023 (.239)	0.007(.252)	.4878(.000)***	-	0.211(.026)**	-.963(.000)***	0.012(.532)	0.015(.033)**	0.499(.000)***	-	0.234(.012)***	0.025(.000)***
Gearing	+/-	0.015 (.118)	-0.000(.859)	-0.010(.753)	.049(.026)**	-	-1.912(.000)***	0.015(.112)	0.002(.550)	-0.006(.851)	0.056(.012)***	-	0.064(.000)***
ROCE		0.040 (.002)***	-0.009(.056)**	-.065(.157)	-.069(.027)**	-0.140(.032)**	-	-	-	-	-	-	-
Q-Ratio		-	-	-	-	-	-	-0.783(.031)**	-.271(.035)**	-0.491(.686)	-0.107(.896)	2.090(.215)	-
Sales Growth	+/-	0.009(.385)	0.0001(.971)	0.0426(.264)	0.073(.950)	0.754(.755)	0.051(.049)**	0.015 (.181)	0.002(.643)	0.040(.299)	-0.013(.600)	0.033(.532)	.007(.000)***
Dual Listing	+/-	1.534(.092)*	-1.088(.000)***	-5.953(.059)**	7.947(.000)***	-0.589(.892)	0.417(.853)	1.010(.267)	-0.709(.030)**	-5.738(.064)*	8.730(.000)***	1.180(.780)	-.483(.000)***
Audit Firm Size	+/-	2.389(.041)**	0.1263(.748)	-6.093(.133)	-9.456(.000)***	-5.283(.335)	-18.03(.000)***	1.846(.116)	1.168(.006)***	-5.524(.171)	-8.836(.001)***	0.281(.959)	.026(.875)
Firm Size	+/-	3.615 (.004)***	1.2711(.006)***	-2.438(.613)	-11.08(.000)	-5.686(.379)	2.8911(.620)	3.402(.007)***	4.208(.000)***	-2.590(.555)	-11.00(.000)***	2.995(.609)	.1.293(.000)***
Total Asset	+/-	.000(.105)*	0.000(.000)***	-0.458(.840)	-0.000(.699)	6.8942.028)**	0.000(.000)***	.000(.120)	0.000(.000)***	0.000(.595)	-0.000(.206)	0.000(.002)***	0.000(.981)
Market Value	+/-	.000(.465)	0.000(.599)	-0.000(.505(	0.000(.215)	-0.000(.056)**	0.000(.000)	.000(.018)***	0.000(.000)***	-0.000(.484)	-0.000(.930)	-0.000(.001)***	.000(.000)***
Capital Expenditure	+/-	.000(.005)***	-0.000(.073)*	-0.000(.241)	-0.000(.019)***	-0.000(.965)	0.000(.282)	-.000(.184)	-0.000(.006)***	-0.000(.216)	0.000(.110)	0.000(.050)**	-.000(.000)***
Basic Material		4.603(.000)***	-0.151(.691)	16.932(.000)***	-10.63(.000)	-21.08(.000)***	-86.19(.000)***	3.714 (.001)***	0.358(.381)	18.420(.000)***	-9.857(.000)	-19.66(.000)***	2.09(.000)***
Consumer Goods		3.024 (.019)***	0.849(.052)**	4.843(.274)	2.765(.347)	-7.047(.248)	-15.99(.000)***	3.714(.013)***	0.902(.054)**	4.797(.280)	2.831(.336)	-8.212(.174)	1.636(.000)***
Finance Industry		-0.49(.624)	0.056(869)	12.066(.000)***	-12.79(.000)***	3.026(.521)	-10.73(.000)***	1.123(.174)	0.349(.346)	11.623(.001)***	-12.00(.000)***	3.705(.440)	-.290(.029)**
Industrial		3.011(.004)***	0.493(.167)	13.534(.000)***	-3.780(.114)	-4.176(.401)	-26.67(.000)***	2.271(.033)**	1.294(.001)***	13.864(.000)***	-3.579(.138)	-0.766(.877)	1.237(.000)***
Telecoms/Technology		2.317(.067)*	-0.535(.211)	4.8592(.267)	-3.631(.206)	-12.41(.037)**	-41.12(.000)***	2.513(.052)**	-0.894(.054)**	4.633(.291)	-4.186(.155)	-16.79(.005)***	1.384(.000)***
Year 2010		-4.776 (.000)***	0.035(.916)	0.501(.879)	0.305(.891)	3.917(.395)	26.337(.000)***	-4.571(.000)***	0.152(.668)	0.389(.907)	-0.108(.961)	3.596(.431)	-1.105(.000)***
Year 2012		2.408 (.011)***	-0.379(.240)	-0.273(.933)	-0.349(.872)	-0.353(.937)	-13.30(.000)***	2.345(.015)***	-0.315(.362)	-0.173(.958)	-0.153(.944)	0.024(.996)	.545(.000)***
Year 2013		3.981(.000)***	-0.714(.029)**	-2.180(.511)	0.333(.880)	1.701(.710)	-18.63(.000)***	3.635(.000)***	-0.581(.096)*	-1.730(.601)	1.042(.636)	2.747(.543)	.551(.000)***
Year 2014		4.547(.000)***	-0.749(.024)**	-3.105(.355)	0.930(.677)	3.194(.490)	-17.64(.000)***	3.944(.000)***	-0.590(.093)*	-2.594(.436)	1.865(.400)	4.834(.288)	.434(.005)***

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. More so, to avoid dummy variable trap, year 2011 and consumer services/health care industry are excluded from the regression analysis. They are both used as base year dummy and base industry dummy for comparison reasons. As explained in 9.3, to limit endogeneity issues, a system of seven simultaneous equations was developed for South Africa. In the first-stage estimate, each of the five corporate governance variables [i.e. South African corporate governance index (SACGI), board size (BSZ), director shareholding (D-SH), institutional shareholding (INST-SH) and capital structure (GEAR)] are estimated along with the nine control variables [(sales growth (S-GROWTH), dual listing (DUA-LIST), audit firm size (AF-SIZE), firm size (F-SIZE), total asset (TA), market value (MV), capital expenditure (CAPEX), industry dummies (INDUS) and year dummies (YD)]. The predicted values are saved as instruments for each of the corporate governance variables. In the second stage, each of the five CG mechanisms are substituted with their saved predicted values from the first-stage estimation in equations 10 (based on ROCE) and 11 (based on Q-ratio) in addition to the nine control variables.

Institutional shareholdings estimate is shown in columns 6 and 12. The results indicate all four alternative CG mechanisms, i.e. SACGI, board size, director shareholding and gearing, positively affect institutional shareholding, but only board size, director shareholding and gearing have significant impact under Q-ratio 2SLS, whereas board size and director shareholding have significant impact under ROCE 2SLS. The positive significant impact of board size, director shareholding and gearing indicates they complement each other. Contrary to the Nigerian results, South African results show that both ROCE and Q-ratio impact negatively on institutional shareholding; however, only the results of ROCE are significant. Contrary to expectations, this demonstrates that more successful firms are less attractive to institutional shareholders. The results of Q-ratio impacting negatively on institutional shareholdings in South Africa are contrary to the results reported by Ntim et al. (2015b,pp.29).

Gearing estimates are presented in columns 7 and 13. The results illustrate that SACGI and institutional shareholding impact positively on gearing, but only the impact of the latter is significant. Meanwhile, board size and director shareholding show negative effects on gearing in ROCE 2SLS estimations, whereas board size shows positive impact on gearing but none of the latter results are significant. The institutional shareholding–gearing impact suggests complementary association between both CG mechanisms. This implies firms with institutional investors can raise debt finance at a cheaper cost. Finally, similar to the Nigerian results reported in 9.3.1, gearing is impacted positively by Q-ratio insignificantly but negatively by ROCE significantly. This implies that firms with increasing accounting returns do not seek debt finance. Conversely, the positive Q-ratio–gearing impact, though insignificant, markets value such geared firms more highly than lowly geared firms.

Consistent with Nigeria, the 2SLS in South Africa was meant to validate whether results presented in Chapter 8 are robust to endogeneity concerns. Regression results of the performance variables are presented in column 8 for ROCE and column 14 for Q-ratio. The adjusted R^2 for ROCE is 68.1% and for Q-ratio 44.5%, with both having significant F-statistics at 1%.

Results from columns 8 and 14 reported in table 30 show that SACGI positively and significantly impacts on accounting returns but negatively impacts on market returns. This result supports the OLS estimates results reported in subsection 8.2.2 that better governed

firms in South Africa benefit from increasing accounting returns but are faced with decreasing market returns more than poorly governed firms. Similar to Nigeria, board size in South Africa significantly negatively affects both ROCE and Q-ratio. The results based on impact of board size on both performance measures are consistent with those reported in the OLS estimates in section 8.3.2. Therefore, these results are robust to endogeneity.

Contrary to the results reported in 2SLS for Nigeria (9.3.1), in South Africa, director shareholding showed a positive significant relationship with ROCE but a negative significant impact on Q-ratio. The results based on Q-ratio are consistent with the results reported in 8.3.2 in Chapter 8, though the OLS estimate for Q-ratio was not significant. The positive significant impact of director shareholding on ROCE in the 2SLS estimate does not support the significantly negative relationship reported in the OLS estimates. Consequently, the presence of endogeneity may have affected the OLS results on the impact of director shareholding on ROCE. From column 14, institutional shareholding positively and significantly impacts on ROCE, which is consistent with the OLS estimates results reported in 8.3.2, and is therefore robust and not sensitive to endogeneity. However, the positive significant impact of institutional shareholding on Q-ratio does not support the negative insignificant results of the OLS estimate reported in 8.3.2.

Finally, from column 8, gearing negatively and significantly affects ROCE but positively affects Q-ratio significantly, which is consistent with the results reported in 8.3.1. Therefore, the results based on the impact of gearing on both accounting and market returns reported in Chapter 8 (8.3.2) are robust to endogeneity.

Similar to the Nigerian results, the 2SLS results in South Africa support the results of the OLS estimates reported in Chapter 8 for the compliance index model. Similarly, the 2SLS results based on the equilibrium variable model show overall robustness to endogeneity problems with a few dissimilar results.

The next section presents a test of robustness based on a Dynamic System Generalised Method of Moments for both the compliance index model and the equilibrium variable model in Nigeria and South Africa.

9.4 Dynamic System Generalised Method of Moments (GMM) Regression

As discussed earlier, an extensive body of empirical research in CG suggests that certain governance mechanisms enhance firm performance. However, some scholars (e.g. Lu et al., 2009, Schultz et al., 2010, Di Miceli da Silveira et al., 2010, Pham et al., 2011, Roberts and Whited, 2012, Wintoki et al., 2012, Barros et al., 2013) have noted that these research results are plagued with endogeneity problems. As Wintoki et al. (2012) point out, it is not often possible to determine whether the causation in CG–firm performance association is actually reversed. For example, does performance drive firms to choose good CG structure rather than the other way around as investigated in CG scholarship? What if CG is merely an indication of an essential unobservable factor which also affects firm performance? As a result, to determine what estimates of parameters may suggest becomes difficult.

As mentioned earlier, corporate finance research has observed at least three sources of endogeneity, i.e. simultaneity, unobserved heterogeneity. However, endogeneity problems arising from the possibility that current CG mechanism values can be because of past financial performance values (dynamic endogeneity) have been ignored either explicitly or implicitly. As noted by (Wintoki et al., 2012; p.1), ignoring this source of endogeneity can pose serious consequences for inference arrived at from the OLS estimates. Schultz et al. (2010;p.145) observed that variations and inconsistencies in the results of CG–performance association are because of the inability of scholars to control for all forms of endogeneity. Consequently, the failure to control all forms of endogeneity can lead to spurious CG–performance relationships. Hence, some writers have contended that corporate governance and firm performance are 'simultaneously' determined by unobservable firm-specific dynamics and that CG variations are determined by present and/or expected and past firm-level idiosyncrasies. Some scholars (e.g. Lu et al., 2009, Schultz et al., 2010, Di Miceli da Silveira et al., 2010, Pham et al., 2011, Roberts and Whited, 2012, Wintoki et al., 2012, Barros et al., 2013) have provided evidence suggesting that there are three types of endogeneity in CG research, namely unobserved heterogeneity, simultaneity and dynamic endogeneity. Therefore, CG studies which do not control for these endogeneity issues should be interpreted with caution.

The results reported for the OLS estimate and subsequently investigated for endogeneity with the use of the Durbin–Wu–Hausman exogeneity test and instrumental variable confirm the

argument put forward by scholars (e.g. Lu et al., 2009, Schultz et al., 2010, Di Miceli da Silveira et al., 2010, Pham et al., 2011, Roberts and Whited, 2012, Wintoki et al., 2012, Barros et al., 2013) that the CG–firm performance relationship suffers from endogeneity issues. The 2SLS model further confirms the existence of reverse causation (simultaneous endogeneity) for CG–firm association. For example, the 2SLS results for both South Africa and Nigeria indicate that the respective CG indices (NICGI and SACGI) are both affected by firm performance and firm performance is also impacted by these CG indices. However, the instrumental variable estimation and 2SLS estimations have controlled for unobserved heterogeneity and simultaneity, with the results showing aggregate robustness with the OLS estimate reported in Chapter 8 across both countries. However, the instrumental variable estimation and 2SLS estimations do not control for dynamic endogeneity.

Drawing from Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998), the dynamic system generalised method of moments (dynamic systems GMM) is employed to overcome the problems of unobserved heterogeneity, simultaneity and dynamic endogeneity in this research, consistent with a few prior corporate governance scholars (e.g. Schultz et al., 2010, Wintoki et al., 2012) who employed the dynamic systems GMM; hence, this study provides unbiased and consistent estimates by employing internally generated valid instruments in the estimation.

As noted earlier, prior studies (e.g. Lu et al., 2009, Di Miceli da Silveira et al., 2010, Schultz et al., 2010, Pham et al., 2011, Roberts and Whited, 2012, Wintoki et al., 2012, Barros et al., 2013) are the foundation for employing dynamic systems GMM in this study. These studies, however, investigated single or a few corporate governance structures on firm performance. For example, Wintoki et al. (2012) investigated board structure–performance association; Schultz et al. (2010) examined the impact of director compensation, director ownership, block ownership, board independence and size on firm performance. Pham et al. (2011) employed board independence and size, insider shareholdings, outsider shareholdings on firm performance. However, this research extends these previous studies by employing 14 alternative CG structures in the equilibrium variable model to investigate the CG–performance relations using dynamic systems GMM. More so, these prior studies have also hugely concentrated on developed economies. For example, Schultz et al. (2010) and Pham et al. (2011) used Australian firms; meanwhile, Wintoki et al. (2012) used US-listed firms. However, until now, only a few studies in emerging markets, particularly in Africa, have

addressed endogeneity issues arising from CG–firm performance relationship (e.g. Kyereboah-Coleman, 2008, Ntim et al., 2010, Ntim et al., 2012, Ntim, 2013c, Ntim et al., 2015a) using either lagged OLS, pooled GLS or 2SLS estimations. For example, Ntim et al. (2015a) employed 2SLS; Ntim (2013c) and Ntim et al. (2012) employed lagged OLS and 2SLS. Meanwhile, Kyereboah-Coleman (2008) employed random-effect GLS regression. Nonetheless, these few African studies controlled for unobserved heterogeneity and simultaneity but failed to control for dynamic endogeneity. Hence, by controlling for the three forms of endogeneity, this study also contributes to extend on the empirical models employed in the CG–firm performance association in Africa. Furthermore, studies in both developed and emerging economies have not examined unobserved heterogeneity, simultaneity and dynamic endogeneity issues using the compliance index model. This study intends to fill this gap in CG scholarship. In summary, this research provides a more comprehensive examination of the relationship between CG and firm performance by including a broader range of CG measures and controls than prior studies.

9.4.1 Dynamic System GMM Equation

The dynamic system GMM is based on the notion that OLS and instrumental variable approach (IV and 2SLS) do not exploit all the available information in a sample. Thus, dynamic system GMM exploits all the available information in a sample and therefore provides more efficient estimates of causal associations (Arellano and Bond, 1988, Arellano and Bond, 1991, Arellano and Bover, 1995, Blundell and Bond, 1998). Consistent with prior research, to be able to conduct a dynamic system GMM model, it is essential to first conduct OLS regressions to compare with dynamic system estimates. The estimate for OLS has been reported in Chapter 8 for both Nigeria and South Africa, but, in addition, the Durbin–Wu–Hausman exogeneity test, instrumental variable model and 2SLS estimations have been conducted as a pre-requisite to conduct the dynamic system GMM.

In the main OLS equation examined in Chapter 8, firm performance = f (corporate governance mechanisms, exogenous/control variables, fixed effects). Where corporate governance mechanism(s) is the corporate governance index (CGI) for respective countries as stated in the compliance index model. Similarly, corporate governance mechanism(s) are the 14 CG mechanisms in the equilibrium variable model equation and the control are the nine controls for the compliance index model and equilibrium variable model equations. This

study posits that for the dynamic model, firm financial performance = f (past firm performance, corporate governance mechanisms, exogenous/control variables, fixed effects). In this dynamic systems GMM, the first transformation equation (1) is determined by a first difference model and then uses the lagged level of regressors and differences in the lagged levels as an instrument to transform the first difference regressors. Hence, in the compliance index model, the instruments are the level of CGI, while, in the equilibrium variable model, the instruments are 14 CG variables (board size, independent NED, NED, ED, CEO/chairman separation, board meetings, director shareholding, institutional shareholding, board busyness, ethnic diversity, gender diversity, board interlocks, audit-committee independence and gearing) in addition to the level of non-dummy controls (sales growth, market value, total asset, capital expenditure) in both South Africa and Nigeria and difference at t-1. The rest of the control dummy variables are included as exogenous instruments. Last, one lag for the performance variables (L. ROCE and L. Q-ratio) is added to capture the persistent impact of past performance on current CG structures.

As Schultz et al. (2010,pp.149) noted, one of the essential properties of difference GMM is that it uses internal instruments embedded in the existing dataset which are available to the econometrician. Schultz et al. (2010,pp.149) add that since all variables are time variant, unobservable firm idiosyncrasies are eliminated without the compulsion for strict exogeneity assumptions, which therefore allows for performance lag (dependent variable lag) to be included in the right-hand side of the equation to account for any likely dynamic endogeneity. Hence, the estimates produced from the equation are robust to firm fixed effects, endogenous regressors, serial correlation of financial performance improvement and heteroscedasticity. Therefore, using the compliance index model as an example and consistent with Schultz et al. (2010,pp.149), the dynamic difference equation for the compliance index model is stated as:

$$P_{it} = L.\ \Delta P\delta_{it} + \Delta\beta_1 CGI_{it} + \sum_{t=1}^{n} \beta_2 \Delta CONTROLS_{it} + U_{it} \dots\dots\dots\dots\dots\ (12)$$

Note: L is a one-period lag operator; $\Delta\mathbf{P}$ is a $(N - I) \times 1$ trajectory/vector of the differenced firm financial performance variable across N observations and I firms, where δ is a 1×1 scalar of lag time coefficient for differenced financial performance proxy, $L\Delta P$, across N observations. ΔCGI is a $(N - I) \times H$ matrix of the H differenced corporate governance index variable (NICGI and SACGI) across N observations and I firms. $\boldsymbol{\beta_1}$ is a $H \times 1$ vector of

coefficients for the *H* differenced corporate governance index. $\Delta_{CONTROLS}$ is a $(N - I) \times Q$ matrix of the *Q*-differenced firm-level exogenous variables across *N* observations for *I* firms. $\boldsymbol{\beta_2}$ is a $Q \times 1$ vector of coefficients for the *Q*-differenced firm-level exogenous variables. Finally, $\Delta \mathbf{U}$ is a $(N - I) \times 1$ vector of the error terms across *N* observations for *I* firms.

The difference GMM estimation is improved upon by a simultaneous difference and level equation as developed by Arellano and Bond (1991), Arellano and Bover (1995), Blundell and Bond (1998) which yields more efficient estimators than difference GMM. As noted by, for example, Schultz et al. (2010,pp.150), in addition to difference GMM equation, all level equations are added to develop a system of equations as stated below:

$$\Delta P_{it} = L. \; \Delta P \delta_{it} + \beta_1 \Delta CGI_{it} + \sum\nolimits_{t=1}^{n} \beta_2 \Delta CONTROLS_{it} + \Delta U_{it} \; \ldots\ldots\ldots\ldots\ldots \; (13)$$

The first system of equation (12) shows the impact of lag performance variable in addition to CGI variables plus the control variables. The second system of equation (13) shows the impact of lag financial performance changes in addition to changes in CGI variable and changes in control variables regressed on change in performance variable. According to Schultz et al. (2010,pp.150), dynamic system GMM model increases the efficiency of difference GMM specification in two ways. First, supposing the true relationship between CGI and firm financial performance is in levels, equation 13 provides a more accurate and robust specification of associations underlying dynamics. Finally, Schultz et al. (2010,pp.150) point out that, if there exists slight persistence in variables levels, then the variable lagged levels may be weak instruments for difference equation. Thus, the dynamic system GMM improves the moment conditions by instrumenting CGI–firm financial performance association with lagged variations of firm financial performance, CG variables and control variables. Hence, dynamic system GMM produces consistent and efficient estimates for the compliance index or equilibrium variable model parameters which are robust to biases presented by unobserved heterogeneity, simultaneity and dynamic endogeneity.

A key exogeneity assumption in the dynamic system GMM equation is that historical firm financial performance and CG variables are exogenous with respect to financial innovations and current shocks. Consistent with Wintoki et al. (2012,pp.15) and following from Arellano

and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998), two essential tests are to be conducted to verify this assumption.

In the first test, the second-order serial correlation ascertains whether or not the system GMM equation in this study has included sufficient lags to control for dynamic characteristics of empirical associations (Wintoki et al., 2012,pp.15). If this assumption is true, then any historical performance value beyond the lags is a hypothetically valid instrument. This is because the values will be exogenous to current firm financial performance shocks. Hence it is expected that, given this assumption, the dynamic system GMM estimates are valid. By creation, the residual values in first differences AR (1) can be correlated; however, no serial correlation should exist in the second differences AR (2).

Second, the dynamic system GMM estimation uses multiple time lags as instruments, and therefore if the system in this equation is over identified, Hansen test of over-identification verifies over-identification in the equation (e.g. Schultz et al., 2010,pp.157, Wintoki et al., 2012,pp.15). The Hansen test produces J-statistics following a chi-square distribution with null hypothesis that instruments in the dynamic system GMM are valid. In addition, the Diff-in-Hansen tests of exogeneity with the null of instruments in the system GMM equation levels are exogenous is tested.

Following from the derivation of the dynamic system GMM equation, the subsequent subsections discuss the results of dynamic system GMM equation for the compliance index model and equilibrium variable model in Nigeria and South Africa.

9.4.2 Dynamic System GMM Results–Compliance Index Model for Nigeria

Table 31 below shows the results of dynamic system GMM equation for Nigeria. Following the suggestions of Larcker and Rusticus (2010,pp.196), OLS estimates are also reported in table 31 to allow comparison of the statistical significance, magnitude, signs of the OLS estimates with the results of the endogenously corrected alternative estimates. This allows for verification of the level and extent to which the main results are robust and/or sensitive to endogeneity issues. Columns 3 to 5 show the dynamic system GMM results for NICGI, Shareholder–NICGI and Stakeholder–NICGI for ROCE as dependent variables. Columns 6 to 8 report the results of dynamic system GMM for NICGI, Shareholder–NICGI and Stakeholder–NICGI for Q-ratio as dependent variable. Columns 9 to 11 are the results of

OLS estimates of NICGI and NICGI-sub indices with ROCE as dependent variable; meanwhile, columns 12 to 14 are OLS estimates of NICGI and sub-indices with Q-ratio as dependent variable. It should be noted that the dynamic system GMM reduces the number of observations from 400 firm years to 320 firm-year observations because of a one-year lag.

From table 31, columns 3, 4 and 5, the F-values for ROCE and columns 6, 7 and 8 for Q-ratio for NICGI, Shareholder–NICGI and Stakeholder–NICGI respectively indicate that the dynamic system GMM results are statistically significant at 1% ($p \leq 0.00001$). This therefore suggests that the null hypothesis that the regression coefficient of the NICGI and NICGI sub-indices and the control variables is equal to zero is rejected. Comparing the F-values with those reported under the OLS estimates (columns 9 to 14) shows consistency; however, the system GMM F-values are on average higher than those reported for OLS estimates.

In addition, the test of second-order serial correlation AR (2) across all the dynamic system GMM results in columns 3 to 8 shows that there is no serial correlation between the variables. Therefore, the equations have sufficient lag instruments to control for the dynamic characteristics of empirical associations and hence dynamic system GMM estimates are valid. In addition, Hansen J test of over-identification indicates that the instruments included in all the system GMM regressions are valid and none of the equations is over-identified. More so, Diff-in-Hansen tests of exogeneity indicate GMM equation-level instruments across all the system GMM regressions are exogenous. These results are similar to those reported by prior studies (e.g. Schultz et al., 2010, Pham et al., 2011, Wintoki et al., 2012).

For the compliance index model, the main interest is whether the quality of internal corporate governance structures in Nigeria as measured by the NICGI and NICGI sub-indices has any meaningful impact on the market and accounting returns of listed firms in Nigeria as reported in OLS estimates in Chapter 8 and included in table 31. From table 31, column 3 (ROCE) and column 6 (Q-ratio), the results indicate that NICGI is positively related to both accounting and market returns with statistical significance at 1% ($p \leq 0.001$). The significant positive relationship between NICGI and both performance variables therefore supports hypothesis 10a and is consistent with the OLS estimate results reported in Chapter 8 and columns 11 and 12 of table 31.

The system GMM results for Shareholder–NICGI and Stakeholder–NICGI for dynamic system GMM are reported in columns 4 and 5 for ROCE and 7 and 8 for Q-ratio in table 31 respectively. Shareholder–NICGI positively impacts significantly on Q-ratio (1%) and ROCE (5%). This is also consistent with the results reported in Chapter 8 (8.4.1) for OLS estimates that firms that comply with the NICGI turn to comply with shareholder provision of SEC 2011.

From columns 5 and 8, Stakeholder–NICGI for dynamic system GMM indicates positive significant impact on both ROCE and Q-ratio both at 1%. These results are consistent with those reported in Chapter 8 (8.4.1) and in columns 11 and 14 for OLS estimates in table 31. As noted earlier, these results suggest that firms that comply with both NICGI and Shareholder–NICGI tend to comply with the stakeholder provision of the SEC 2011 corporate governance provisions. Thus, overall results for the Nigeria corporate governance index and sub-indices in Chapter 8 are robust to possible unobserved heterogeneity, simultaneity and dynamic endogeneity.

The next subsection reports the results of dynamic system GMM equation for the compliance index model for South Africa.

Table 31: Dynamic System GMM Results for the Nigerian Corporate Governance Index (NICGI), Sub-Indices and Accounting Returns (ROCE) and Market Returns (Q-ratio) Relations for All (320) Firm Years

	Dynamic System GMM on Corporate Governance Structure (NICGI and NICGI Sub-Indices) – Financial Performance (320 firm years)						Results Based on OLS Estimates of Corporate Governance Structure (NICGI and NICGI Sub-Indices) – Financial Performance (400 firm years)					
	Dynamic Systems GMM Estimation Based on ROCE			Dynamic Systems GMM Estimation Based on Q-ratio			OLS Estimates Based on ROCE			OLS Estimates Based on Q-ratio		
R-Square (R^2)	-	-	-	-	-	-	.208	.203	.240	.294	.296	.308
Adjusted R^2	-	-	-	-	-	-	.171	.165	.204	.264	.262	.275
F-value	43.81(.000)***	45.16(.000)***	22.02(.000)***	68.72(.000)***	78.1(.000)***	70.22(.000)***	5.568(.000)***	5.405(.000)***	6.678(.000)***	8.947(.000)***	8.887(.000)***	9.415(.000)***
Standard Error	-	-	-	-	-	-	21.143	21.208	20.717	1.524	1.529	1.512
Durbin–Watson	-	-	-	-	-	-	.970	1.021	1.000	1.074	1.068	1.131
AR (1) test (p-value)	.027	.024	.026	.19	.196	.169	-	-	-	-	-	-
AR (2) test (p-value)	.134	.134	.184	.291	.288	.306	-	-	-	-	-	-
Hansen test of over-identification (p-value)	.392	.332	.649	.360	.394	.258	-	-	-	-	-	-
Diff-in-Hansen tests of exogeneity (p-value)	..701	.607	.955	.836	.817	.582	-	-	-	-	-	-
No of observations	320	320	320	320	320	320	400	400	400	400	400	400
Constant	-7.050(.271)	-5.892(.408)	1.175(.757)	-.554(.492)	-.887(.316)	1.005(.068)*	-9.070(.133)	-8.477(.194)	-2.075(.622)	2.334(.000)***	2.212(.000)***	2.746(.000)***
L. ROCE	.310(.000)***	.333(.000)***	.249(.000)***	-	-	-	-	-	-	-	-	-
L. Q-ratio	-	-	-	.269(.001)***	.293(.001)***	.301(.000)***	-	-	-	-	-	-
NICGI	.282(.006)***	-	-	.045(.003)***	-	-	.241(.004)***	-	-	.013(.043)**	-	-
Shareholder–NICGI	-	.242(.022)**	-	-	.044(.001)***	-	-	.212(.014)***	-	-	.012(.101)*	-
Stakeholder–NICGI	-	-	.198(.007)***	-	-	.025(.012)***	-	-	.155(.010)***	-	-	.013(.002)***
Sales Growth	.035(.488)	..024(.631)	.093(.102)*	.018(.000)***	.017(.000)**	.020(.000)**	.139(.011)***	.138(.012)***	.130(.015)***	.001(.803)	.001(.802)	.001(.780)
Dual Listing	.322(.918)	.440(.890)	2.345(.491)	-.709(.010)***	-.623(.018)***	-.659(.019)***	1.725(.739)	2.111(.684)	1.558(.759)	-.581(.119)	-0.572(.126)	-.637(.086)*
Audit Firm Size	2.969(.117)	3.469(.101)*	1.560(.518)	.234(.153)	.259(.108)*	.148(.387)	8.500(.002)***	9.148(.001)***	8.294(.003)***	.631(.002)***	.652(.001)***	.524(.010)***
Firm Size	-2.695(.210)	-1.965(.341)	-3.292(.194)	.116(.615)	.194(.353)	-.004(.987)	-.571(.850)	.122(.967)	-.255(.939)	.639(.008)***	.659(.007)***	.549(.024)**
Gearing	-.071(.017)***	-.066(.020)**	-.093(.007)***	.002(.445)	.002(.552)	.001(.691)	-.12(.000)***	-.121(.000)***	-.110(.001)***	.004(.128)	.003(.131)	.003(.102)*
Total Asset	.000(.676)	.000(.676)	.000(.633)	-.000(.297)	.000(.517)	-.000(.528)	.000(.673)	.000(.674)	-.000(.059)**	-.000(.003)***	-.000(.001)***	-.000(.000)***
Market Value	.000(.000)***	.000(.000)***	.000(.000)***	.000(.000)***	.000(.000)***	.000(.000)***	.000(.119)	.000(.111)	.000(.035)**	.000(.000)***	.000(.000)***	.000(.000)***
CAPEX	-.000(.008)***	-.000(.020)***	-.000(.019)***	-.000(.000)***	-.000(.000)***	-.000(.000)***	-.000(.517)	-.000(.492)	.000(.001)***	-.000(.047)**	-.000(.048)**	-.000(.027)**
Agriculture/Consumer Goods	4.132(.111)	4.582(.058)**	3.229(.308)	1.076(.002)***	1.148(.002)***	.574(.062)*	12.460(.000)***	12.916(.000)***	7.917(.040)**	.905(.002)***	.937(.002)***	.798(.005)***
Finance Industry	-1.683(.460)	-.821(.689)	-2.268(.438)	-.161(.561)	-.082(.756)	-.465(.131)	.770(.817)	1.414(.669)	.271(.943)	-.50(.074)*	-.479(.090)*	-.585(.036)**
ICT/Real estate	.257(.920)	.104(.966)	1.238(.621)	.646(.080)*	.675(.063)*	.351(.353)	10.583(.027)**	10.581(.028)**	9.865(.043)***	.569(.120)	.574(.118)	.574(.110)
Industrial/Conglomerate	-1.728(.519)	-1.177(.626)	-2.653(.428)	.482(.123)	.576(.080)*	-.024(.925)	1.741(.740)	1.952(.711)	-2.648(.620)	-.407(.309)	-.386(.339)	-.459(.240)
Natural Resource/Oil & Gas	16.469(.000)***	17.132(.000)***	15.105(.001)***	1.470(.000)***	1.429(.000)***	1.032(.003)***	19.729(.000)***	19.678(.000)***	16.274(.001)***	.420(.244)	.432(.234)	.413(.237)
Year 2011	-	-	-	-	-	-	-4.699(.163)	-4.869(.149)	-3.994(.226)	.089(.711)	.088(.715)	.101(.672)
Year 2013	-4.042(.001)***	-4.162(.000)***	-2.783(.008)***	.258(.038)**	.254(.048)**	.318(.007)***	-2.038(.550)	-1.949(.569)	-1.569(.638)	.257(.295)	.257(.296)	.250(.304)
Year 2014	-5.574(.000)***	-5.537(.000)***	-4.247(.000)***	-.090(.491)	-.073(.579)	-.005(.967)	-4.750(.165)	-4.546(.186)	-4.216(.207)	.130(.598)	.129(.522)	.117(.629)
Year 2015	-8.696(.000)***	-8.615(.000)***	-6.386(.000)***	.015(.938)	.026(.897)	.201(.222)	-7.630(.031)**	-7.232(.042)**	-6.482(.057)*	.408(.110)	.403(.117)	.396(.111)

***, **, * significant at 1%, 5% and 10% respectively. NICGI is the Nigerian Corporate Governance index based on SEC 2011 corporate governance code. Shareholder–NICGI and Stakeholder–NICGI are the sub-indices for NICGI for shareholder provisions (61) and stakeholder provisions (14) of the based-on SEC 2011 provisions. The Arellano–Bond test statistic (AR1) and (AR2) follows an asymptotic normal distribution, with null (H0): No autocorrelation of order "v in the differenced errors. By creation the residual values in first differences AR (1) can be correlated; however, no serial correlation should exist in the second difference AR (2). The Hanson test of over-identification (J-Statistic) follows a chi-squared distribution with (l-r) degrees of freedom, with l indicating the number of moment conditions whereas r is the parameters to be estimated; with a null (H0) = moment conditions are specified correctly (i.e. instruments in the dynamic system GMM are valid). Diff-in-Hansen tests of exogeneity have a null (H0) = instruments in the system GMM equation levels are exogenous.

9.4.3 Dynamic System GMM Results–Compliance Index Model for South Africa

Similar to Nigeria, table 32 below presents the results of dynamic system GMM equation for South Africa. The dynamic system GMM results for SACGI, Shareholder–SACGI and Stakeholder–SACGI for ROCE are available in columns 3 to 5, whereas those for Q-ratio are in columns 6 to 8. Similarly, columns 9 to 11 and 12 to 14 are the results of OLS estimates of SACGI and SACGI-sub indices for ROCE and Q-ratio respectively. The dynamic system GMM reduces the number of observations in South Africa to 400 firm years from 500 firm-year observations owing to the inclusion of a one-year lag.

Available in columns 3, 4 and 5 from table 32 are the F-values for ROCE, and in columns 6, 7 and 8 is the Q-ratio for SACGI, Shareholder–SACGI and Stakeholder–SACGI respectively. The results for dynamic system GMM as can be seen indicate statistically significant F-values at 1% (p≤0.00001). For that reason, the null hypothesis that the regression coefficient of the SACGI, along with its sub-indices and the control variables, is zero is rejected. Similar to Nigeria, equating the F-values with those reported for OLS estimates (columns 9 to 14) demonstrates consistency. The test of second-order serial correlation AR (2) for South Africa available in columns 3 to 8 shows no serial correlation between variables. Consequently, the equations have sufficient lag instruments to control for any dynamic characteristics of empirical relationships and therefore dynamic system GMM results for South Africa are valid. The Hansen J test of over-identification also shows that the included instruments in the system GMM estimations are valid, and not a single equation is over-identified. Finally, Diff-in-Hansen tests of exogeneity in South Africa show that GMM equation levels instruments are exogenous. These results are consistent with those reported by Schultz et al. (2010,pp.150), Pham et al. (2011), Wintoki et al. (2012) and (Barros et al., 2013).

Similar to Nigeria, dynamic system GMM estimation was conducted to examine whether the results for OLS estimates for SACGI, Shareholder–SACGI and Stakeholder–SACGI association with firm financial results are robust to possible unobserved heterogeneity, simultaneity and dynamic endogeneity. Columns 3 (ROCE) and 6 (Q-ratio) in table 32 show the dynamic system GMM estimation results for SACGI. Reading from these columns, SACGI positively impacts on accounting returns significantly at 1% (p≤0.001), whereas it negatively affects market returns significantly at 5% (p≤0.05).

Table 32: Dynamic System GMM Results for South African Corporate Governance Index (SACGI), Sub-Indices and Accounting Returns (ROCE) and Market Returns (Q-ratio) Relations for All (400) Firm Years

	Exp Sign	Results Based on Dynamic System GMM on Corporate Governance Structure (SACGI and SACGI Sub-Indices) – Financial Performance						Results Based on OLS Estimates of Corporate Governance Structure (SACGI and SACGI Sub-Indices) – Financial Performance					
		Dynamic Systems GMM Estimation Based on ROCE (400 firm years)			Dynamic Systems GMM Estimation Based on Q-ratio (400 firm years)			OLS Estimates Based on ROCE (500 firm years)			OLS Estimates Based on Q-ratio (500 firm years)		
R-Square (R^2)		-	-	-	-	-	-	0.223	0.299	0.288	0.246	0.338	0.288
Adjusted R^2		-	-	-	-	-	-	0.194	0.273	0.261	0.217	0.313	0.262
F-value		19.43(.000)***	55.58(.000)***	57.13(.000)***	12.73(.000)***	26.38(.000)***	5.84(.000)***	7.67(.000)***	11.4000(.000)***	10.808(.000)***	8.70(.000)***	13.634(.000)***	10.824(.000)***
Standard Error		-	-	-	-	-	-	23.328	22.166	22.34	0.869	0.808	0.838
Durbin–Watson		-	-	-	-	-	-	1.055	1.075	1.061	1.041	1.079	1.045
AR (1) test (p-value)		.027	0.027	.006	.006	0.023	.035	-	-	-	-	-	-
AR (2) test (p-value)		0.491	.651	.461	.465	.144	.282	-	-	-	-	-	-
Hansen J test of over-identification (p-value)		.231	.126	.148	.432	.157	.146	-	-	-	-	-	-
Diff-in-Hansen tests of exogeneity (p-value)		.851	.538	.298	.903	.886	.990	-	-	-	-	-	-
No of observations		400	400	400	400	400	400	500	500	500	500	500	500
Constant		9.441(.283)	-19.380(.232)	-51.52(.002)***	3.698(.125)	1.104(.041)**	1.558(.183)	8.099(.55)	10.136(.495)	31.545(.020)**	2.61(.000)***	2.013(.000)***	1.168(.004)***
L. ROCE		.402(000)***	.338(.000)***	.814(.000)***	-	-	-	-	-	-	-	-	-
L. Q-ratio		-	-	-	.522(.000)***	.193(.000)***	.550(.000)***	-	-	-	-	-	-
SACGI	+	.271(.006)***	-	-	-.059(.059)*	-	-	.318(.05)**	-	-	-.013(.038)**	-	-
Shareholder-SACGI	+	-	.387(.043)**	-	-	-.009(.065)*	-	-	0.414(.007)***	-	-	-0.009(.073)*	-
Stakeholder-SACGI	+/-	-	-	.546(.002)***	-	-	-.035(.005)***	-	-	0.067(.547)	-	-	-0.007(.086)*
Sales Growth	+/-	2.267(.052)**	1.241(.087)*	8.016(.000)***	.003(.349)	.002(.000)***	.046(.401)	.072(.065)*	0.070(.058)**	0.074(.048)**	.005(.001)***	.004(.007)***	.082(.003)***
Dual-listing	+	3.952(.007)***	-5.438(.000)***	.268(.845)	-.981(.031)**	-.823(.010)***	.729(.320)	-8.322(.007)***	-6.639(.025)**	-6.566(.028)**	-.144(.209)	-0.129(.224)	-0.123(.266)
Audit firm size	+	-3.721(.184)	-3.093(.242)	3.156(.157)	.526(.387)	.250(.388)	-.128(.899)	-9.972(.007)***	-8.064(.032)**	-7.459(.048)**	-.429(.002)***	-0.525(.000)***	-0.591(.000)***
Firm size	+	2.032(.431)	1.174(.637)	5.398(.007)***	.672(.279)	.514(.066)*	.330(.671)	5.369(.026)**	1.120(.801)	1.712(.702)	.345(.000)***	-0.286(.035)**	-0.349(.012)***
Gearing	+/-	-.089(.001)***	-	-	.010(.008)***	.000(.902)	-	-.107(.002)***	-0.076(.018)***	-0.072(.024)**	.001(.457)	-0.001(.437)	.001(.516)
Total asset	+/-	0.000(.157)	-0.000(009)***	-.000(.012)***	-.000(.568)	-.000(.002)***	-.000(.361)	-.000(.18)	-.000(.001)***	-0.000(.003)***	-.000(.171)	-.000(.693)	-.000(.576)
Market Value	+	0.000(.177)	.000(.003)***	.000(.212)	.000(.000)***	.000(.000)***	.000(.000)***	.001(.035)**	0.000(.001)***	.000(.000)***	.000(.000)***	.000(.000)***	.000(.000)***
CAPEX	+/-	0.000(.305)	.000(.087)*	.000(.241)	-.000(.401)	-.000(.000)***	.000(.539)	.000(.700)	-.000(.572)	-0.000(.991)	-.000(.003)***	-.000(.147)	-.000(.027)**
Basic Material		13.00(.000)***	-14.02(.000)***	-2.537(.358)	-.088(.764)	-.404(.006)***	-.463(.134)	-22.862(.000)***	-21.174(.000)***	-20.29(.000)***	-.104(.461)	-0.160(.212)	-0.185(.167)
Consumer Goods		1.004(.851)	-1.909(.622)	-.786(.801)	-.174(.489)	-.105(.372)	.105(.806)	3.653(.412)	1.333(.753)	2.924(.490)	.355(.033)**	0.179(.247)	0.140(.377)
Finance Industry		-.330(.899)	-2.725(.290)	1.161(.558)	-.705(.012)***	-.699(.000)***	-.263(.471)	-2.488(.458)	-.690(.828)	-1.218(.709)	-.624(.000)***	-0.779(.000)***	-0.629(.000)***
Industrial		-4.961(.091)*	-7.656(.004)***	-5.021(.016)***	-.376(.184)	-.413(.000)***	-.053(.878)	-8.373(.020)**	-8.672(.011)***	-8.113(.020)**	-.236(.078)*	-0.380(.002)***	-0.426(.001)***
Telecoms/Technology Industry		2.708(.376)	1.662(.605)	.911(.613)	.164(.470)	-.116(.386)	.127(.758)	4.476(.312)	6.190(.147)	6.697(.109)*	-.097(.555)	-0.004(.978)	-0.072(.655)
Year 2010		-	-	-	-	-	-	1.371(.686)	2.061(.523)	0.276(.931)	.093(.462)	0.071(.547)	0.118(.322)
Year 2012		-.522(.660)	-1.442(.094)*	-1.697(.166)	.210(.049)**	.033(.213)	.151(.020)**	-.882(.791)	-1.031(.744)	-0.312(.922)	.082(.509)	0.040(.728)	0.025(.831)
Year 2013		-4.295(.000)***	-6.514(.000)***	-7.247(.000)***	.184(.031)**	.032(.340)	.206(.011)***	-6.551(.053)*	-6.587(.039)**	-5.528(.084)*	.074(.556)	-0.010(.931)	-0.024(.839)
Year 2014		2.665(.191)	-8.282(.000)***	-3.004(.106)*	.184(.213)	-.071(.099)*	.133(.227)	8.644(.011)***	-8.336(.008)***	-7.414(.022)**	-.034(.790)	-0.022(.854)	-0.022(.855)

***, **, * significant at 1%, 5% and 10% respectively. SACGI is the South African Corporate Governance index based on King III corporate governance code. Shareholder–SACGI and Stakeholder–SACGI are the sub-indices for SACGI for shareholder provisions (71) and stakeholder provisions (13) based on King III provisions. The Arellano–Bond test statistic (AR1) and (AR2) follows an asymptotic normal distribution, with null (H0): No autocorrelation of order "v" in the differenced errors. By creation the residual values in first differences AR (1) can be correlated; however, no serial correlation should exist in the second difference AR (2). The Hanson test of over-identification (J-Statistic) follows a chi-squared distribution with (l-r) degrees of freedom, with l indicating the number of moment conditions whereas "r" is the parameters to be estimated, and with a null (H0) = moment conditions are specified correctly (i.e. instruments in the dynamic system GMM are valid). Diff-in-Hansen tests of exogeneity have a null (H0) = instruments in the system GMM equation.

These results are consistent with those reported for OLS estimation in columns 9 and 12 of table 32. The significant positive relationship between SACGI and ROCE supports hypothesis 10a but rejects the hypothesis base on Q-ratio.

In addition, the dynamic system GMM results for Shareholder–SACGI and Stakeholder–SACGI are reported in columns 4 and 5 for accounting returns (ROCE) and 7 and 8 for market returns (Q-ratio) in table 32 respectively. Reading from columns 4 and 7, Shareholder–SACGI positively affects ROCE significantly ($p \leq 0.05$) but negatively impacts Q-ratio significantly ($p \leq 0.10$). Similar to the results reported for SACGI, Shareholder–SACGI results are consistent with the results reported in Chapter 8 (8.4.2) and in columns 10 and 13 on table 32 for OLS estimates. Again, this result indicates that South African firms that comply with the SACGI turn to comply with the shareholder provision of the King III corporate governance code.

Equally, the Stakeholder–SACGI in columns 5 and 8 on table 32 for dynamic system GMM points to a positive significant impact on ROCE but a negative significant impact on Q-ratio, both at 1% ($p \leq 0.001$). The results based on both performance measures are consistent with those reported in Chapter 8 (8.4.2) and columns 11 and 14 for OLS estimates on table 32. Nevertheless, the OLS estimate results were insignificant for ROCE. However, these results lend support to the fact that firms who comply with both SACGI and Shareholder–SACGI tend to comply with King III stakeholder provisions. Yet, in contrast to Nigerian results, the negative results based on market return suggest that the market undervalues firms that comply with stakeholder provisions of King III.

Similar to Nigerian results, the overall results for dynamic system GMM in South Africa for SACGI, Shareholder–SACGI and Stakeholder–SACGI demonstrate reliability with the OLS estimates reported in Chapter 8. Accordingly, OLS estimates reported for the South African corporate governance index (SACGI) and sub-indices (Shareholder–SACGI and Social–SACGI) are robust to any possible unobserved heterogeneity, simultaneity and dynamic endogeneity.

The next subsection reports the results of dynamic system GMM equation for equilibrium variable model for Nigeria (9.4.4) and South Africa (9.4.5).

9.4.4 Dynamic System GMM Results–Equilibrium Variable Model for Nigeria

The results of dynamic system GMM equation for equilibrium variable model for Nigeria are available in table 33 below. OLS estimates are also available in table 33 to permit evaluation of statistical significance, magnitude, signs of the OLS estimates compared to those of dynamic system GMM equation. Columns 3 (ROCE) and 4 (Q-ratio) present the dynamic system GMM results for the impact of 14 firm-level alternative internal corporate governance variables on firm financial performance, whereas columns 5 (ROCE) and 6 (Q-ratio) report OLS estimates for the 14 firm-level alternative internal corporate governance mechanisms on firm performance. As noted earlier, owing to one lag period, the dynamic system GMM reduced the number of observations from 400 firm years to 320 firm year observations.

Reading from columns 3 and 4 on table 33, the F-values for ROCE and Q-ratio respectively for the 14 firm-level alternative internal corporate governance mechanisms show dynamic system GMM results are statistically significant at 1% (p≤0.00001). Hence, the null hypothesis that the regression coefficient of the 14 firm-level alternative internal corporate governance mechanisms and the control variables is zero is not accepted. Matching the F-values in columns 3 and 4 for dynamic system GMM estimate with those reported in columns 5 and 6 for ROCE and Q-ratio for OLS estimate displays consistency in significance.

Furthermore, the AR (2) test (the test of second-order serial correlation) for the dynamic system GMM for ROCE (column 3) and Q-ratio (column 4) indicates no serial correlation between the variables. Deducing from this, the equations have appropriate lag instruments to control for dynamic features of empirical relations. Hence, the dynamic system GMM estimates for the 14 firm-level alternative internal corporate governance mechanisms are valid. Likewise, the Hansen J test of over-identification shows instruments contained within the system GMM regressions are valid and the equations are not over-identified. The Diff-in-Hansen tests of exogeneity also evidence that GMM equation-levels instruments in the system GMM regressions are exogenous.

Similar to the compliance index model, the dynamic system GMM estimation of the equilibrium variable model aims at confirming if OLS results reported in Chapter 8 (8.3.1) for the effect of 14 firm-level alternative internal corporate governance mechanisms on firm financial performance are robust to possible endogeneity problems. To begin with, reading

from table 33, column 3 (ROCE) and column 4 (Q-ratio), board size is negatively and insignificantly related to ROCE but negatively and significantly associated with Q-ratio. Comparing with the results reported in columns 5 and 6 for OLS estimate, the sign and coefficients of board size are consistent with Q-ratio estimates. However, board size changes from positive in OLS to insignificantly negative in dynamic systems GMM.

Likewise, NEDs insignificantly impact on ROCE positively and but negatively affect Q-ratio in OLS estimates, but the sign for Q-ratio remained the same but significant in the GMM estimation, whereas for ROCE it has changed to negative. Contrarily, the results of independent NEDs show robustness across both OLS and GMM estimations as its effect remains negative across both ROCE and Q-ratio but significant only with Q-ratio. Similar to NEDs, executive directors (EDs) positively affect ROCE and Q-ratio respectively but insignificantly in GMM estimates. However, the sign of the coefficient of EDs has remained like those reported for Q-ratio in OLS estimate but significantly, whereas for ROCE it has changed from negative to positive insignificantly in the dynamic system GMM estimation.

Furthermore, regarding the results for CEO/Chairman separation, the positive significant impact on Q-ratio is robust across both OLS and dynamic system GMM estimate. However, the sign of the coefficient of CEO/Chairman separation–ROCE association changed from negative insignificance to positive significance from OLS to dynamic system GMM estimate. Similarly, frequency of board meetings showed positive relationships with both performance variables insignificantly in OLS estimate, but in the dynamic system GMM estimate the signs remain the same but significantly. Conversely, the results based on director shareholding show consistent negative significant impact on ROCE but insignificantly with Q-ratio in OLS and dynamic system GMM estimate. This implies the impact of director shareholding on both accounting and market returns is robust to possible endogeneity.

 Similarly, institutional shareholding shows significant positive relationships with Q-ratio under both OLS and dynamic system GMM estimate. However, with regard to ROCE, institutional shareholding shows negative insignificant association in OLS estimate but insignificant positive association in dynamic system GMM estimate. The positive significant institutional shareholding–market returns association is robust to endogeneity, whereas the effect on accounting returns is sensitive to endogeneity.

Table 33: Nigerian Dynamic Systems GMM Estimation of the Equilibrium Variable Model Based on Accounting Performance Measure (ROCE) and Market Performance Variable (Q-ratio) for 320 Firm Years

		Results Based on Dynamic System GMM on Firm-level Alternative Internal Corporate Governance Structure – Financial Performance		Results Based on OLS Firm-level Alternative Internal Corporate Governance Structure – Financial Performance	
		All firm years (320)		All firm years (400)	
	Exp Sign	ROCE	Q-ratio	ROCE	Q-ratio
R-Square (R2)		-	-	.228	.385
Adjusted R2		-	-	.167	.337
F-value		49.14(.000)***	89.45(.000)***	3.742(.000)***	7.972(.000)***
Standard Error		-	-	21.246	1.449
Durbin–Watson		-	-	1.986	1.236
AR(1) test (p_value)		.011	.146	-	-
AR(2) test (p_value)		.322	.514	-	-
Hansen J test of over-identification (p-value)		.651	.461	-	-
Diff-in-Hansen tests of exogeneity (p-value)		.846	.239	-	-
No of observations		320	320	400	400
Constant		-66.053(.221)	-14.88(.036)**	28.916(.068)*	3.418(.001)***
L. ROCE		.499(.000)***	-	-	-
L. Q-ratio		-	.303(.003)***	-	-
Board Size	+/-	-1.178(.132)	-.216(.001)***	.005(.992)	-.101(.005)***
NED	+	-.061(.678)	-.034(.001)***	.003(.971)	-.003(.677)
Independent NED	+	-.203(.187)	-.029 (.007)***	-.117(.306)	-.019(.012)**
Executive Directors	+/-	.061(.678)	.034(.034)**	-.004(.971)	.003(.677)
CEO/Chairman Separation	-	112.112(.019)***	23.376(.002)***	-2.0115(.837)	1.395(.037)**
Board Meetings	+	2.211(.075)*	.3740(.008)***	.784(.457)	.017(.812)
Director Shareholding	+	-.163(.004)***	-.003 (.403)	-.092(.070)*	-.004(.199)
Institutional Shareholding	+	.022(.815)	.022(.004)***	-.042(.501)	.007(.066)*
Board Busyness	-	-2.289(.082)*	-.232(.024)**	-1.545(.100)*	.031(.626)
Ethnic Diversity	+	-.216 (.049)**	-.053 (.000)***	-.181(.023)**	-.018(.001)***
Gender Diversity	+	.260(.051)**	.026(.002)***	.328(.007)***	.016(.004)***
Board Interlocks	+	11.935(.164)	.928(.116)	7.140(.123)	-.196 (.533)
Audit-Committee Independence	+	-.184 (.231)	-.009 (.101)*	-.078(.292)	-.015(.002)***
Gearing	+/-	-.119(.030)**	.003(.313)	-.127(.000)***	.001(.526)
Sales Growth	+	.215(.005)***	.004(.027)**	.128(.021)**	-.002 (.519)
Dual Listing	+	11.532(.213)	1.229(.168)	2.623(.648)	-.175(.655)
Audit Firm Size	+	5.523(.017)***	.316(.275)	11.828(.000) ***	.470(.015)***
Firm Size	+	-3.375(.180)	-.039(.898)	-1.966(.554)	.179(.430)
Total Asset	+/-	.000(.028)**	.000(.657)	-.000(.248)	-.000(.264)
Market Value	+	-.000(.402)	.000(.000)***	.000(.273)	.000(.000)***
Capital Expenditure	+/-	.000(.004)***	.000(.812)	.000(.741)	-.000(.020)**
Agriculture/Consumer Goods		5.113(.101)*	-.188 (.598)	9.836(.013)***	.383(.156)
Finance Industry		6.796(.022)**	.251(.517)	1.872(.607)	-.635(.011)***
ICT/Real Estate		4.784(.294)	.408(.436)	10.329(.046)**	-.083(.813)
Industrial/Conglomerate		-3.796(.410)	-1.997(.006)***	-1.8713(.740)	-1.053(006)***
Natural Resource/Oil & Gas		11.512(.043)**	.322(.713)	16.072(.001)***	-.307(.358)
Year 2011		-	-	-5.574(.100)*	.090(.695)
Year 2013		-2.099(.208)	.165(.234)	-.722(.836)	.219(.356)
Year 2014		-3.312(.053)**	-.066(.622)	-2.492(.475)	.148(.533)
Year 2015		-4.849(.002)***	.176(.036)**	-5.283(.135)	.500(.036)**

The Arellano–Bond test statistic (AR1) and (AR2) follows an asymptotic normal distribution, with null (H0): No autocorrelation of order "v" in the differenced errors. By creation the residual values in first differences AR (1) can be correlated; however, no serial correlation should exist in the second difference AR (2). The Hanson test of over-identification (J-Statistic) follows a chi-squared distribution with (l-r) degrees of freedom, with l indicating the number of moment conditions whereas "r" is the parameters to be estimated, and with a null (H0) = moment conditions are specified correctly (i.e. instruments in the dynamic system GMM are valid). Diff-in-Hansen tests of exogeneity have a null (H0) = instruments in the system GMM equation levels are exogenous.

Likewise, the impact of board busyness showed robustness as it is consistently and significantly associated with ROCE in both OLS and dynamic system GMM estimate negatively. On the other hand, board busyness shows negative association with Q-ratio significantly in GMM estimate but positive association in OLS estimate insignificantly. On the contrary, board interlocks show robustness and consistent significant positive impact on ROCE in both estimates. However, with Q-ratio, board interlocks showed positive insignificant association in dynamic system GMM estimate but negative insignificant impact in OLS estimate.

Furthermore, ethnic diversity consistently affects Q-ratio and ROCE significantly and negatively across both OLS estimates and dynamic system GMM estimate. Similarly, gender diversity shows consistent positive impact on ROCE and Q-ratio significantly across both OLS estimation and dynamic system GMM estimate. This indicates that ethnic and gender diversity results reported in OLS estimate in Chapter 8 (8.3.1) are robust to any endogeneity problems.

Finally, audit committee independence shows consistent negative insignificant impact on ROCE and significant impact on Q-ratio across both OLS estimation and dynamic system GMM. These results indicate the finding in Chapter 8 for audit committee independence in subsection 8.3.1 is robust to possible endogeneity issues. Finally, akin to ethnic, gender diversity and audit committee independence, gearing has a positive insignificant impact on Q-ratio but a negative significant impact on ROCE across both OLS estimation and dynamic system GMM. This shows that the findings reported for gearing in subsection 8.3.1 is robust to possible endogeneity issues.

Generally, the results show consistency and robustness to possible endogeneity problems with a few sensitivities to endogeneity depending on the performance proxy. The next subsection reports the results of dynamic system GMM equation for equilibrium variable model for South Africa.

9.4.5 Dynamic System GMM Results–Equilibrium Variable Model for South Africa

South African dynamic system GMM equation results for equilibrium variable model are presented in table 34 below. Similar to previous discussions, OLS estimations are also available in table 34 to allow for comparative evaluation of statistical significance, magnitude and signs of OLS estimates discussed in Chapter 8 (8.3.2). The F-values for ROCE and Q-ratio are shown in columns 3 and 4 respectively on table 34 for the 14 firm-level alternative internal corporate governance mechanisms. The results of dynamic system GMM are statistically significant at 1% (p≤0.00001). Therefore, the null hypothesis that the regression coefficient of the 14 South Africa firm-level alternative internal corporate governance structures and the nine control variables is zero is not accepted. Comparing the F-values for dynamic system GMM estimate in columns 3 and 4 with OLS estimate F-values in columns 5 and 6 for ROCE and Q-ratio displays consistency in significance.

Akin to reported results for Nigeria (9.6.4) and the compliance index model for South Africa (9.6.3), AR (2) test for both performance proxies (columns 3 and 4) confirms absence of serial correlation between the variables. More so, the Hansen J test of over-identification confirms the instruments in the dynamic system GMM estimations are valid and there is no over-identification in the equations. Finally, diff-in-Hansen tests of exogeneity provide confirmation that GMM equation levels instruments in the system GMM estimation are exogenous.

As earlier mentioned, dynamic system GMM estimation of the equilibrium variable model in South Africa purposes to confirm whether OLS estimates as presented in Chapter 8 (8.3.2) for the influence of 14 firm-level alternative internal corporate governance structures on accounting and market returns are robust to possible endogeneity concerns. First, interpreting from table 34, ROCE (column 3) and Q-ratio (column 4), board size impacts negatively and significantly on ROCE in the dynamic systems GMM regression, which is consistent with results reported for OLS estimate in column 5. Similarly, negative and insignificant impact of board size on Q-ratio in dynamic systems GMM is consistent with results for OLS estimate (column 6), but the latter estimate is significant. In the same way, the results of NEDs are consistently positively associated with ROCE significantly in both OLS and dynamic systems GMM regression, which means these results are robust to possible unobserved heterogeneity, simultaneity and dynamic endogeneity. However, results based on OLS estimate for Q-ratio

have changed sign from negative insignificant to positive insignificant in dynamic systems GMM estimation.

Contrarily to NEDs results, independent NEDs negatively affect ROCE significantly in both OLS and dynamic systems GMM regression but consistently positively impact on Q-ratio insignificantly across both regressions. This implies the OLS results for independent NEDs are robust to possible unobserved heterogeneity, simultaneity and dynamic endogeneity. Similarly, EDs negatively affects ROCE in both OLS and dynamic systems GMM regression significantly. This result implies the OLS estimate for EDs reported for ROCE is robust to possible endogeneity. However, OLS estimate for Q-ratio has changed sign from negative insignificance to positive insignificance in dynamic systems GMM estimation.

CEO/Chairman separation displays constant positive effect on ROCE and Q-ratio across both OLS estimates and dynamic system GMM estimate. Similarly, frequency of board meetings demonstrates consistent negative significant impact on Q-ratio in both dynamic system GMM and OLS estimates, thus suggesting that frequency of board meetings results reported for OLS estimate in Chapter 8 are robust to all forms of endogeneity. Conversely, board meetings, which was positive and significantly affecting ROCE in the OLS estimate, is now significantly negative in the dynamic system GMM estimate.

Similar to results reported for Nigeria, director shareholding shows negative and significant effect on ROCE in OLS estimate and dynamic system GMM estimate, suggesting robust OLS results to endogeneity. Similarly, director shareholding, which was not significant in OLS estimate of Q-ratio, remains negative but now significant in dynamic system GMM estimate. Institutional shareholding shows negative influence on ROCE in both OLS and dynamic system GMM estimate but not significantly in the latter regression. Conversely, Q-ratio is affected by institutional shareholding negatively in OLS estimate but is significant positively in dynamic system GMM estimate.

Contrary to Nigeria results, board busyness in South Africa showed consistent negative significant association with ROCE in both OLS estimate and dynamic system GMM estimate, implying that OLS regression results in column 5 and reported in Chapter 8 are robust to all forms of endogeneity.

Table 34: South African Dynamic Systems GMM Estimation of the Equilibrium Variable Model Based on Accounting Performance Measure (ROCE) and Market Performance Variable (Q-ratio)

		Results Based on Dynamic System GMM on Firm-level Alternative Internal Corporate Governance Structure – Financial Performance		Results Based on OLS Firm-level Alternative Internal Corporate Governance Structure – Financial Performance	
		All firm years		All firm years	
	Exp Sign	ROCE	Q-ratio	ROCE	Q-ratio
R-Square (R2)		-	-	.320	.266
Adjusted R2		-	-	.278	.220
F-value		19.71 (.000)***	144.14(.000)***	7.570(.000)***	5.833(.000)***
Standard Error		-	-	22.145	.869
Durbin–Watson		-	-	2.004	1.841
AR(1) test (p_value)		.057	.003	-	-
AR(2) test (p_value)		.907	.128	-	-
Hansen J test of over-identification (p-value)		.538	.353	-	-
Diff-in-Hansen tests of exogeneity (p-value)		.669	.976	-	-
No of observations		400	400	500	500
Constant		-26.669(.126)	.713(.419)***	16.874(.384)	1.696(.003)***
L. ROCE		.260(.000)***	-	-	-
L. Q-ratio		-	.487(.000)***	-	-
Board Size	+/-	-2.889(.005)***	-.020(.413)	-1.055(.023)**	-.035(.037)**
NED	+	.262(.002)***	.003(.407)	0.290(.009)***	-.001(.862)
Independent NED	+	-.245(.001)***	.005(.345)	-.242(.010)***	.000(.975)
Executive Directors	+/-	-.408(.002)***	-.004(.353)	-0.287(.010)***	.001(.921)
CEO/Separation	-	8.007(.002)***	.253(.376)	5.367(.344)	.414(.062)*
Board Meetings	+	-1.186.001)***	-.103 (.000) ***	2.066(.041)**	-.085(.031)**
Director Shareholding	+	-0.081(.014)***	-.007(.000)***	-.085(.094)*	-.001(.595)
Institutional Shareholding	+	-.054(.284)	.010(.003)***	-.116(.088)*	-.001(.748)
Board Busyness	-	-.723(.002)***	-.032 (.021)**	-1.086(.019)**	.023(.193)
Ethnic Diversity	+	-.010(822)	.002(.573)	-.030(.662)	.003(.287)
Gender Diversity	+	.203(.015)***	.003 (.492)	0.127(.253)	-.003(.457)
Board Interlocks	+	3.929(.003)***	.042(.678)	5.152(.027)**	-.071(.430)
Audit-Committee Independence	+	.149(.128)	-.008(.210)	.102(.383)	.004(.351)
Gearing	+/-	-.020(.389)	.007(.002)***	-.067(.056)**	.001(.413)
Sales Growth	+	.525(.820)	.001(.658)	1.961(.483)	.005(.001)***
Dual Listing	+	-5.911(.015)***	-.258 (.223)	-4.558(.163)	-.182(.151)
Audit Firm Size	+	-4.677(.107)*	-.268(.203)	-9.314(.016)***	-.368(.016)**
Firm Size	+	4.714(.253)	.315(.228)	10.987(.000)***	.396(.000)***
Total Asset	+/-	.000(.144)	-.000(.067)*	-0.000(.037)**	-.000(.394)
Market Value	+	.000(.000)***	.000(.000)***	0.000(.000)***	.000(.000)***
Capital Expenditure	+/-	.000(.062)*	-0.000(.000)***	-0.000(.4467)	-0.000(.001)***
Basic Material		-13.373(.000)***	.174 (.175)	-21.111(.000)***	-.104(.500)
Consumer Goods		3.932(.427)	.352(.054)**	4.563(.293)	.346(.043)**
Finance Industry		-2.929(.387)	-.181 (.152)	-2.83(.524)	-.564(.000)***
Industrial		-5.339(.108)*	-.063 (.581)	-6.039(.096)*	-.224(.111)
Telecoms/Technology		3.422(.376)	.096(.410)	6.450(.161)	-.082(.653)
Year 2010		-	-	-.469(.887)	.157(.208)
Year 2012		-2.484(.031)**	.052 (.267)	-.860(.785)	.043(.720)
Year 2013		-6.592(.000)***	.015(.762)	-5.256(.098)*	.013(.918)
Year 2014		-4.514(.016)***	-.049 (.381)	-6.691(.039)**	-.101(.423)

The Arellano–Bond test statistic (AR1) and (AR2) follows an asymptotic normal distribution, with null (H0): No autocorrelation of order "v" in the differenced errors. By creation the residual values in first differences AR (1) can be correlated; however, no serial correlation should exist in the second difference AR (2). The Hanson test of over-identification (J-Statistic) follows a chi-squared distribution with (l-r) degrees of freedom, with l indicating the number of moment conditions whereas "r" is the parameters to be estimated, and with a null (H0) = moment conditions are specified correctly (i.e. instruments in the dynamic system GMM are valid). Diff-in-Hansen tests of exogeneity has a null (H0) = instruments in the system GMM equation levels are exogenous.

Nonetheless, board busyness shows negative significant association with Q-ratio in dynamic system GMM estimate but positive insignificant association in OLS estimate. On the contrary, board interlocks shows consistent significant positive impact on ROCE in both estimates, implying that OLS results for board interlocks in column 5 and reported in Chapter 8 are robust to all forms of endogeneity. On the other hand, board interlocks showed positive insignificant association with Q-ratio in dynamic system GMM estimate but negative insignificant impact in OLS estimate.

Ethnic diversity consistently affects ROCE insignificantly negatively and insignificantly positively on Q-ratio across both OLS estimates and dynamic system GMM estimate. This indicates the OLS results for ethnic diversity in Chapter 8 are robust to possible unobserved heterogeneity, simultaneity and dynamic endogeneity. Contrarily, gender diversity shows consistent positive impact on ROCE insignificantly in OLS estimation but significantly in dynamic system GMM estimation. Nevertheless, gender diversity shows positive insignificant association with Q-ratio in dynamic system GMM estimate but negative insignificant impact in OLS estimate.

Audit committee independence shows consistent positive insignificant impact on ROCE across both OLS estimation and dynamic system GMM, suggesting that the results in Chapter 8 for ROCE are robust to possible unobserved heterogeneity, simultaneity and dynamic endogeneity. The results based on Q-ratio reported for audit committee independence are negative insignificant in system GMM estimation but positive insignificant in OLS estimation. Last of all, contrary to Nigeria results, gearing has a positive significant impact on Q-ratio across both OLS estimation and dynamic system GMM, but only the results of the latter estimation are significant. On the other hand, the results based on the impact of gearing on ROCE in OLS estimate are positively insignificant but negatively insignificant in dynamic system GMM.

The next subsection summarises and compares the results of the robustness and sensitivity analysis in both countries.

9.5 Comparison of Nigerian and South African Results – Robustness and Sensitivity Analysis

As explained earlier, three main robustness and sensitivity analyses were performed to address the problem of endogeneity, which has called into question the validity of claims made by prior studies in the CG–firm returns association. To address this, the Durbin–Wu–Hausman exogeneity test was conducted in both Nigeria and South Africa to test for exogeneity by using country-level CGI firm performance association as a proxy equation. Subsequently, instrumental variable -2SLS and dynamic system GMM estimations were conducted to verify the robustness of results.

The Durbin–Wu–Hausman exogeneity results indicate the quality of internal corporate governance mechanism in Nigeria (NICGI) is endogenously related to market returns (Q ratio) but exogenously related to accounting returns (ROCE), whereas, in South Africa, the quality of internal corporate governance mechanism (SACGI) is endogenously associated with accounting returns (ROCE) but exogenously associated with market returns (Q ratio). Results of instrumental variable regression indicate that the results reported for Nigeria and South Africa are robust to unobserved endogeneity. This therefore supports the OLS results based on the compliance index model that, in Nigeria, the quality of internal corporate governance mechanism (NICGI) significantly improves both accounting and market performance, whereas, in South Africa, SACGI significantly increases accounting returns but significantly reduces market returns.

Furthermore, a two-stage least square estimation (2SLS) was explored to control for unobserved endogeneity and simultaneity by using five alternative internal CG mechanisms, including the respective country CG indices (NICGI and SACGI), board size, director shareholding, institutional shareholding and gearing. Like the instrumental variable estimate, the 2SLS findings indicate that the results of the compliance index model are robust to unobserved endogeneity and simultaneity in both Nigeria and South Africa.

With regard to the four alternative variables from the equilibrium variable model, in South Africa, the results based on board size and financial performance variables are robust to endogeneity and consistent with those reported in Chapter 8. However, in Nigeria, the board size–accounting performance relationship is consistent and robust but the board size–market

performance relationship reported in Chapter 8 is not robust, suggesting that the latter is sensitive to endogeneity. In addition, director shareholding shows consistent and robust results with accounting returns in Nigeria but robust and consistent results in South Africa with regard to market returns. The other results for director shareholding on market returns in Nigeria and accounting returns in South Africa are sensitive to endogeneity. Similarly, institutional shareholding–market returns association is robust for Nigeria and institutional shareholding–accounting returns results are robust for South Africa. Finally, gearing shows robustness of results to those reported in Chapter 8 in South Africa, but only the gearing–accounting performance relationship is robust in Nigeria.

The 2SLS regression also shows some independence between the five alternative internal CG variables as well as between these variables and performance variables. For example, in both Nigeria and South Africa, CG index (SACGI and NICGI) shows significant positive association with board size, suggesting they are complementary mechanisms. However, institutional shareholding and gearing show negative significant association with NICGI, suggesting substitutability between these variables and NICGI. Similarly, NICGI is positively impacted by both performance variables, which suggests firms with increasing accounting and market performance put in place good CG structures. Similar to Nigeria, accounting returns show positive significant association with SACGI but negative significant market performance–SACGI association. The negative market performance–SACGI association in South Africa suggests that, contrary to Nigeria, firms with high market performance have poor CG structures.

In addition, in South Africa, SACGI and institutional shareholding significantly impact on board size, whereas, in Nigeria, NICGI, gearing and institutional shareholding affect board size positively but director shareholding–board size relationship is negative. The positive relationship suggests complementary use of CG structures, but the negative implies substitutability. Both performance variables impact negatively on board size in South Africa significantly, but only market return–board size negative relationship is significant in Nigeria. This suggests that firms with high market and accounting returns do not necessarily have large boards, as larger boards are costly to manage.

Institutional shareholding is a significant complement to director shareholding in both Nigeria and South Africa, whereas board size indicates substitutability with director

shareholding. In addition, the SACGI–director shareholding association is positive in South Africa, indicating they are complements. Both performance variables show negative insignificant association with director shareholding. Furthermore, in South Africa, SACGI and director shareholding impact positively on institutional shareholding, suggesting complementary use of these corporate governance mechanisms. However, unlike the situation in South Africa, NICGI negatively impacts on institutional shareholding, implying substitutability, whereas, as in South Africa, director shareholding impacts positively on institutional shareholding, suggesting complementary use of these corporate governance mechanisms in Nigeria. Firms with higher financial performance in South Africa are less likely to have institutional investors. Contrarily, the Nigerian results show positive firm performance–institutional shareholding association, implying that more successful firms are attractive to institutional investors.

In Nigeria, NICGI affects gearing negatively, indicating substitutability, whereas director shareholding–gearing association suggests complementary adoption of both mechanisms. However, in South Africa, institutional shareholding–gearing impact suggest complementary association between both CG mechanisms. In both countries, gearing is affected positively by market performance but negatively by accounting returns. Hence firms with increasing accounting returns do not seek debt finance owing to the high cost of financial distress and less flexibility associated with debt finance. On the other hand, the positive market performance–gearing impact suggests investors view geared firms as alternative CG mechanisms and therefore value highly geared firms more than lowly geared firms.

Finally, the dynamic system GMM regression was conducted to control for all forms of endogeneity which are not controlled for by instrumental variable model and 2SLS regressions. Hence, by controlling for the three forms of endogeneity, this study also contributes to expand on the empirical models employed in the CG–firm performance association in Africa.

Table 35 below compares the hypothesis testing results for OLS and dynamic system GMM estimations in both Nigeria and South Africa. The results of dynamic system GMM for the compliance index model show that the compliance with the Nigerian CG index (NICGI) and sub-indices (Shareholder–NICGI and Stakeholder–NICGI) positively and significantly impacts on both accounting and market performance of listed firms in Nigeria.

Table 35: Comparative Summary of Hypothesis Testing for Dynamic System GMM & OLS Results for Nigeria and South Africa

Dependent Variables			NIGERIA								SOUTH AFRICA							
			ROCE				Q-ratio				ROCE				Q-ratio			
Independent Variables	Hypothesis	Expected Sign	OLS Sign	OLS Conclusion	GMM Sign	GMM Conclusion	OS Sign	OLS Conclusion	GMM Sign	GMM Conclusion	OLS Sign	OLS Conclusion	GMM Sign	GMM Conclusion	OLS Sign	OLS Conclusion	GMM Sign	GMM Conclusion
Prop. Non-executive Directors	1a	+	+	Rejected	-	Rejected	-	Rejected	-	Rejected	+	Accepted	+	Accepted	-	Rejected	+	Rejected
Prop. Executive Directors	1b	+	-	Rejected	+	Rejected	+	Rejected	+	Accepted	-	Rejected	-	Rejected	+	Rejected	-	Rejected
Prop. Independent NED	1c	+	-	Rejected	-	Rejected	-	Rejected	-	Rejected	-	Rejected	-	Rejected	+	Rejected	+	Rejected
CEO/Chairman Role Separation	2	+	-	Rejected	+	Accepted	+	Accepted	+	Accepted	+	Rejected	+	Accepted	+	Accepted	+	Rejected
Board Size	3	+	+	Rejected	-	Rejected	-	Rejected	-	Rejected	-	Rejected	-	Rejected	-	Rejected	-	Rejected
Gender Diversity	4	+	+	Accepted	+	Accepted	+	Accepted	+	Accepted	+	Rejected	+	Accepted	-	Rejected	+	Rejected
Board Meetings	5	+	+	Rejected	+	Accepted	+	Rejected	+	Accepted	+	Accepted	-	Rejected	-	Rejected	-	Rejected
Ethnic Diversity	6	+	-	Rejected	-	Rejected	-	Rejected	-	Rejected	-	Rejected	-	Rejected	+	Rejected	+	Rejected
Board Interlocks	7a	+	+	Rejected	+	Rejected	-	Rejected	+	Rejected	+	Accepted	+	Accepted	-	Rejected	+	Rejected
Board Busyness	7b	-	-	Accepted	-	Accepted	+	Rejected	-	Accepted	-	Accepted	-	Accepted	+	Rejected	-	Accepted
Gearing	8	-	-	Accepted	-	Accepted	+	Rejected	+	Rejected	-	Accepted	-	Rejected	+	Rejected	+	Accepted
Director Shareholding	9a	-	-	Accepted	-	Accepted	-	Rejected	-	Rejected	-	Accepted	-	Accepted	-	Rejected	-	Accepted
Institutional Shareholding	9b	+	-	Rejected	+	Rejected	+	Accepted	+	Accepted	-	Rejected	-	Rejected	-	Rejetcled	+	Accepted
Country CG Index (NICGI & SACGI)	10a	+	+	Accepted	+	Accepted	+	Accepted	+	Accepted	+	Accepted	+	Accepted	-	Rejected	-	Rejected
Country CG Shareholder Index	10b	+	+	Accepted	+	Accepted	+	Accepted	+	Accepted	+	Accepted	+	Accepted	-	Rejected	-	Rejected
Country CG Stakeholder Index	10c	+	+	Accepted	+	Accepted	+	Accepted	+	Accepted	+	Rejected	+	Accepted	-	Rejected	-	Rejected
Audit-Committee Independence	11	+	-	Rejected	-	Rejected	-	Rejected	-	Rejected	+	Rejected	+	Rejected	+	Rejected	-	Rejected

Similarly, results show that compliance with the South African CG index (NICGI) and sub-indices (Shareholder–SACGI and Stakeholder–SACGI) positively and significantly impacts on accounting returns and but negatively affects market performance of listed firms in South Africa. Except for Stakeholder–SACGI–accounting performance association, which wasn't significant in Chapter 8, the dynamic system GMM findings are consistent with the reported findings for the research and therefore the findings are robust and not sensitive to any possible unobserved heterogeneity, simultaneity and dynamic endogeneity. Similarly, results of dynamic system GMM for the equilibrium variable model indicate estimates are generally consistent with those reported in Chapter 8 across both countries with some noticeable changes. Overall, results discussed in Chapter 8 for both countries based on OLS are robust to endogeneity.

9.6 Summary of Chapter

As noted earlier, empirical research in corporate finance, which has attempted to evaluate cause-and-effect relationship, often suffers from serious endogeneity problems (Wintoki et al., 2012,pp.1). As a result, this chapter examined if the OLS results in Chapter 8 are robust to a raft of econometric tests. Specifically, the chapter has examined whether the results presented in Chapter 8 are sensitive and robust to possible alternative explanations through examination of Durbin–Wu–Hausman Exogeneity Test with other regression models including Instrumental Variable Model, Two-Stage Least Square (2SLS)/Simultaneous Equation Model and Dynamic System Generalised Methods of Moments (GMM) Model.

Results in both countries and across instrumental variable model, two-stage least square (2SLS)/simultaneous equation model and dynamic system GMM indicate that the reported OLS results (in Chapter 8) which examined the impact of the quality of CG mechanism (SACGI and NICGI) and their respective sub-indices on firm financial performance (compliance index model) are generally robust to unobserved heterogeneity, simultaneity and dynamic endogeneity. However, the sensitivity and robustness results based on examining the impact of alternative firm-level internal CG structures (equilibrium variable model) indicate that, overall, most of the variables in the OLS results reported in Chapter 8 in both countries are robust to unobserved heterogeneity, simultaneity and dynamic endogeneity. Nonetheless, some few variables are sensitive to endogeneity depending on the performance proxy.

The next chapter (10) will present the conclusion, recommendation and limitations of this study and direction for future research.

CHAPTER 10

10.0 SUMMARY OF RESEARCH FINDINGS, CONTRIBUTION RECOMMENDATION AND CONCLUSION

10.1 Introduction and Summary

This study is developed because of the absence of prior studies from a multi-country perspective that are aimed at providing a comprehensive and robust understanding of internal CG structures selected by firms as well as the level at which firms comply with institutionalised CG provisions and their bearing on firm financial performance. Consequently, this study fills this gap in CG scholarship by investigating and comparing the impact of internally generated corporate governance structures and compliance with country-level CG provisions on performance of listed firms in South Africa and Nigeria. Using a compliance index model equation, the study specifically investigates and compares if firm-level compliance with exogenously developed country-level corporate governance provisions in Nigeria (as measured by NICGI, Shareholder–NICGI and Stakeholder–NICGI) and South Africa (SACGI, Shareholder–SACGI and Stakeholder–SACGI) impacts on firm financial performance (sub-research question one). On the other hand, using equilibrium variable model, the study further evaluates and compares the effect of 14 endogenously generated firm-level internal corporate governance mechanisms (measured by proportion of NEDs, proportion of EDs, proportion of independent NEDs, CEO/Chairman role separation, board size, board gender diversity, frequency of board meetings, board busyness, board ethnic diversity, board interlocks, gearing, director shareholding, institutional shareholding and audit committee independence) on firm financial performance of listed firms in Nigeria and South Africa (sub-research question two). Finally, the study examines and compares whether firms' choice of individual internal CG structures as measured by the *equilibrium variable model* is associated with increase in firm financial performance compared to firm-level compliance with country-level CG provisions as measured by *the compliance index model* in South Africa and Nigeria (sub-research question three).

To achieve the above objectives, data for compliance with country-level CG provisions were collected from annual reports of 80 listed firms in Nigeria for the period 2011 to 2015 inclusive and 100 South African-listed firms for the period 2010–2014. Data for the 14-

individual firm-level corporate governance mechanisms and financial performance and control variables are extracted from both Datastream and annual reports.

Drawing from these backgrounds, this chapter focuses on, summarising results (10.2) of the impact of CG disclosure/compliance index on firm financial performance in Nigeria and South Africa (sub-research question one). Further, it compares and summarises the results of the 14 alternative internal CG mechanisms–financial performance association as measured by the equilibrium variable model (sub-research question two). Finally, a summary comparison of the results of disclosure/compliance–firm performance relationship (compliance index model) versus the results of the 14 alternative CG structures–firm performance (equilibrium variable model) association in South Africa and Nigeria (sub-research question three) is presented. Section 10.3 provides contribution and recommendations of the research. Section 10.4 presents policy and practical implications of the research. 10.5 discusses the caveats/limitations of the study. Finally, section 10.6 presents directions for future research.

10.2 Summary of Results

To begin with, the results based on the variables for the compliance index in both (SACGI) South Africa and NICGI (Nigeria) are both statistically significant and consistent. They show that, in Nigeria, NICGI, Shareholder–NICGI and Stakeholder–NICGI are positively associated with both accounting and market returns. This is consistent with the results reported by prior researchers (e.g. Ntim, 2009, Ntim, 2013c, Ntim, 2013a, Ntim et al., 2012) in Africa. Similarly, in South Africa, SACGI, Shareholder–SACGI and Stakeholder–SACGI show positive significant relations with accounting performance whereas inverse association with market valuation.

However, the variables in the equilibrium variable models show mixed results, which are similar to the mixed results reported by previous studies which have employed the equilibrium variable model (e.g. Vafeas, 1999, Sanda et al., 2005, Kyereboah-Coleman and Biekpe, 2006a). For example, in South Africa, excluding board size, which showed consistent negative statistically significant coefficients across both performance measures, the rest of the variables in this model are either statistically significant with one performance measure but insignificant with the other performance measure or significant with both measures but with contradictory signs of the coefficients. Similarly, in Nigeria, out of the 14 firm-level internal

corporate governance structures employed in the equilibrium variable model, six showed insignificant results irrespective of the performance measure, whereas six showed significant results with one performance measure and insignificant results with the other. Only gender diversity and ethnic diversity variables showed consistent statistically significant coefficients across both performance measures.

Generally, comparative diagnostic statistics and results for both Nigeria and South Africa suggest that the compliance index model which measured association between the quality of internal CG structures as determined by the SEC 2011 CG code in Nigeria and the King III CG code in South Africa with their sub-indices provides better and superior explanation to changes in firm financial performance than the equilibrium variable model. Theoretical and methodologically, this suggest even though compilation, development and compliance with country-level CG regulations may be laborious, costly and demanding, it remains a better proxy to aggregate the quality of firm-level internal corporate governance structures than any individual or group of selected firm-level internal corporate governance characteristics. In addition, the results indicate that the construction of a country-level broad-based composite index and sub-indices incorporates several internal CG structures which can capture the actual qualitative differences in country-level CG behaviours across firms in different institutional settings. The results also suggests using a composite CG index provides better explanatory power in the CG–firm performance nexus than using a single or a few CG mechanisms in isolation to each other.

The next section discusses the contribution of the study.

10.3 Research Contribution

As discussed in Chapter 1, CG in Africa has been under-researched as compared to CG in many Western economies, and comparative studies of different CG systems and institutional settings are almost non-existent. This research therefore is timely to examine and compare internal CG mechanisms in Nigeria and South Africa, which are the two most advanced economies in Africa (see their historical development of CG in sections 3.3 and 3.4). To begin with, by adopting a multi-theoretical approach and, more importantly, New Institutional Economics (NIE) theory, this study shows cultural, contextual, institutional similarities and differences in corporate governance mechanisms across different countries

impact differently on firm-level behaviour which affects firm financial performance differently. More so, the results of this study show historical and contextual path dependence has produced a diversity of firm-level and country-level specific internal CG structures that may work well within an institutional environment in which they have evolved but may not work well in others. Specifically, this study contributes in advancing NIE by showing that the level of maturity in governance institutions, in addition to normative rules and informal norms across countries, has a significant bearing on firm-level governance practices. The resulting consequence is that, in countries with developed or more mature governance institutions, stock markets undervalue firms with high compliance with normative governance rules, whereas, in countries with emerging/growing governance institutions, local stock markets highly value a firm's compliance with normative governance guidelines.

In addition, the descriptive statistics reveal that emerging African economies are beginning to see the value relevance of governance institutions. In fact, even though African countries like Nigeria have been associated with institutional voids and lack of enforcement of laws, this study shows that firms in these countries are overcoming institutional constraints by improving in their governance disclosure practices, which is seen by local stock markets as valuable in reducing information asymmetry amid weak institutional parameters. The results therefore do not support the theoretical argument put forward by some scholars (e.g. Adegbite, 2012, Adegbite, 2015, Adegbite et al., 2013, Adegbite and Nakajima, 2012, Nakpodia et al., 2016) that institutional voids render CG regulations an idealism in emerging African economies. In fact, the results show that, despite the institutional void, firms are committed in improving governance institutions by adopting recommended good CG practices implemented by regulatory authorities. The findings show firms in emerging African economies are adopting institutional isomorphic practices in governance compliance. Specifically, firms in these markets are transmitting good governance institutions to emerging economies by improving on their CG practices.

In addition, the study has revealed complementary and substitutable uses of different internal CG systems and provides some insights for theoretical configuration approach in comparative institutional CG studies. The study evidences how complementary and substitutable application of different CG structures is shaped by the national institutions in emerging African economies. In fact, this study shows that national institutions shape the degree of substitutability and complementarity among firm-level internal CG mechanisms, which yields

patterns of disparities at both firm and country level. Following the above theoretical contributions, the study makes the following empirical contributions and extends CG scholarship in the following ways:

First, the study argues that economic, governance and financial circumstances perceptibly vary greatly from country to country and therefore employed New Institutional Economics (NIE) Theory as an additional theoretical lens to the traditional CG theories for this research. Using manually collected data from annual reports of listed firms in the two biggest economies in Africa, the study offers for the first-time direct evidence of comparative institutional perspective by examining the association between internal CG mechanisms and firm financial performance. As noted in Chapter 5, the study employs a balance of both small and large firms, which increases the generalisability of results. Different from prior single-country studies in Africa which are highly concentrated in South Africa (e.g. Ntim et al., 2010, Ntim, 2011, Ntim, 2012b, Ntim et al., 2012, Ntim, 2013c, Ntim, 2013d), this research developed a CG compliance index developed within South African and Nigerian institutional governance structures, incorporating both local stakeholder-inclusive contextual requirements and shareholder requirements. In addition, distinct from prior South African research which used the King II CG requirements (e.g. Ntim et al., 2010, Ntim, 2011, Ntim et al., 2012, Ntim, 2013c, Ntim, 2013a), this study offers for the first time evidence on the level of compliance with the most recent CG code in South Africa (King III). In addition, distinct from prior research in Nigeria, this study for the first time provides comprehensive evidence on the level of compliance with the SEC 2011 CG code. In this light, the findings of the research offer for the first-time comparative evidence that the positive impact of compliance with normative CG guidelines on firm accounting performance in countries with mature governance institutions (South Africa) is similar to that with emerging governance institutions (Nigeria). Conversely, the results further evidence that improvement in CG practices in countries with emerging governance institutions is highly valued by investors but undervalued in countries with more mature governance institutions.

More so, with the exception of Ntim (2009) and Ntim et al. (2012), there is dearth of studies investigating compliance with shareholder requirements and firm returns in Africa. This study extends Ntim et al. (2012) studies of King II by incorporating King III requirements. In Nigeria, this study provides evidence for the fist time on compliance with shareholder requirements of SEC 2011 CG code. Consistent with the results of Ntim et al. (2012) in South

Africa, this study provides distinct comparative evidence that compliance with normative shareholder practices as recommended by SEC 2011 CG code improves both market and accounting returns of listed firms in Nigeria but, in South Africa, compliance with King III shareholder requirements improves accounting returns although it negatively affects market returns.

Again, except for Ntim (2009) and Ntim et al. (2012) studies of South Africa's King II, there is deficiency of both single-country and cross-country studies examining the economic consequences of compliance with inclusive stakeholder and contextual corporate governance provisions in Africa. This study offers new contributions in this area. First, the study shows the level of compliance with inclusive normative stakeholder and contextual CG requirements by listed firms in both South Africa and Nigeria is increasing over time. In addition, the research results provide new comparative evidence in Nigeria suggesting that listed firms that provide more transparent information on normative stakeholder compliance practices improve both their market and accounting performance by reducing political cost and gaining access to environmental resources. However, in more mature governance environments, stakeholder compliance practices are valued negatively by investors. From an NIE perspective, the findings indicate that increasing stakeholder disclosures signal that a firm is conforming to societal norms and adapting to local isomorphism, which enhances firm returns in countries with emerging governance institutions, whereas these practices are negatively valued in more mature governance environments.

Furthermore, this study extends on existing studies in CG scholarship by moving away from the traditional use of one or a few CG variables in isolation to each other to examine the CG–firm performance relationships (e.g. Ntim, 2012b, Ntim, 2014, Ntim et al., 2014b, Zattoni et al., 2017). The study fills this gap by examining and comparing 14 alternative internal CG –firm performance associations within two distinct and interesting African economies. The findings show albeit some similarities may exist on how different internal CG mechanisms are structured and adopted by firms in different countries, but there are considerable differences in how these mechanisms impact on firms' financials.

In addition, as noted earlier, most studies conducted in Africa and beyond have used a sample of non-financial firms or financial firms (e.g. Abor, 2007, Barako et al., 2006, Kula, 2005, Ntim, 2009, Ntim, 2013c, Ntim et al., 2010). This study fills this gap in the research as it uses

a large sample of firms across both countries including both financial and non-financial firms. This provides a robust and representative comparison between countries and increases the statistical significance and validity of the results as well as providing stronger evidence for generalisation of the findings. Hence, the study contributes immensely in understanding the trend of global CG governance divergence and convergence across different countries and industries. Specifically, the findings indicate that, in countries with emerging governance institutions, financial firms are more compliant with normative governance guidelines than non-financial firms. Contrarily, in more mature governance environments, non-financial firms comply more with normative governance guidelines than financial firms.

This study offers two methodological contributions. First of all, for the first time, this study offers comparative analysis of the compliance index model and the equilibrium variable model using multi-country evidence. The multi-country evidence shows that methodological choices on analysing CG–firm performance nexus have the potential to influence research findings, which has important implications for future research.

Second, the research results make a new analytical methodological contribution to CG scholarship. As noted earlier, only a few studies particularly in Africa have addressed endogeneity issues arising from the CG–firm performance relationship (e.g. Kyereboah-Coleman, 2008, Ntim et al., 2010, Ntim, 2012b, Ntim et al., 2012, Ntim, 2013c, Ntim, 2013a). However, these studies controlled for unobserved heterogeneity and simultaneity but did not control for dynamic endogeneity. As Schultz et al. (2010,p.145) observed, variations and inconsistencies in findings of CG–financial returns research may be a consequence of the inability of scholars to control for all forms of endogeneity. As a result, in addition to the traditional OLS, Instrumental Variable, 2SLS estimations, a dynamic systems GMM estimation which controls for unobserved heterogeneity, simultaneity and dynamic endoge-neity is examined. This study provides multi-country evidence that findings based on the compliance index model are unbiased and consistent across a raft of econometric models compared to those of the equilibrium variable model. The study shows that most of the findings of the CG–firm performance association are robust and not sensitive to possible endogeneity issues.

10.4 Policy Implications and Recommendations

The research results have essential regulatory, policy and practical implications for firms, governments and regulatory authorities. First, analyses of the level of compliance with CG code in both Nigeria and South Africa indicate that there is a general improvement of CG standards by listed firms, with an average of above 70% over 5-year periods. This implies the efforts put in place by stakeholders in both countries are beginning to yield some fruit. The evidence shows that the introduction of CG standards in the form of codes of good CG practices in both countries is substantially improving corporate practices of listed firms. Given this evidence, it may be useful for policy makers to require implementation by unlisted firms, especially in Nigeria where only listed firms are to comply with SEC 2011 CG code.

Similarly, the evidence shows that CG practices vary from country to country and from one firm to another. This implies that policy makers should apply some level of judgement and flexibility in developing CG guidelines between small firms and large firms given that compliance is very expensive, and it is may be costlier for smaller firms to comply than larger firms. For example, the UK combined code of 2006 includes requirements which are not applicable to smaller firms (i.e. firms listed below FSTE 350) and with initial public offerings (IPOs). For example, smaller firms are allowed to have remuneration and audit committees with only two independent NEDs. Hence policy makers in other countries should design and provide guidance on how to comply with recommended practices which are proportional to and are in line with firm size and resources.

Third, low or zero compliance as is the case for some firms in Nigeria for stakeholder requirements, or 23% as in the case of South Africa, suggests that some of the provisions may be inappropriate within the country context or that enforcement of compliance is weak. This suggests policy makers need to improve on enforcement of normative governance guidelines, otherwise institutional void and unethical practices such as corruption will perpetuate for short- and long-term performance goals and may adversely affect the internationalisation objectives of firms, especially firms seeking to expand to developed markets.

Fourth, the study evidences that, while CG compliance is seen as beneficial by investors in Nigeria, this may not be the case in South Africa as investors in the latter undervalue firms who comply with King III. This implies that the 'apply or explain' requirements of King III

may not fit well with South African investors and therefore they undervalue firms that increase their application of King III. Hence policy makers in South Africa need to incorporate such considerations in the draft King IV report. More so, the evidence suggests that compliance with CG requirements has reached a point of inertia for investors in South Africa, some of whom do not value CG's contribution. Therefore, the draft King IV needs to incorporate investors' perspectives in the final guidelines, without which investors will not legitimise the guidelines and will undervalue compliance firms.

Fifth, increasing levels of compliance with institutionalised stakeholder-inclusive provisions in both countries suggest that increase in compliance is linked to access to resources and local government contracts. Therefore, firms' compliance with these provisions may offer them access to resources including government contracts, tax breaks and subsidies among others.

More so, the positive association between CG compliance and firm financial performance, especially in Nigeria, provides governments and regulatory authorities with strong incentives to pursue policy reforms and extend reforms which are relevant to the local institutions and encourage firms to provide for specific institutional stakeholder needs (e.g. needs of employees, local and traditional councils, creditors, suppliers etc.). For firms, the results evidence they can improve on their accounting performance by disclosing more transparent information on broad-based CG disclosures and shareholder and stakeholder disclosures.

In addition, the positive CG compliance–market performance association in Nigeria whereas inverse relationship in South Africa suggests in some countries investors may not view CG requirements favourably. Therefore, copy and paste some CG requirements from one country to another may not be suitable with the institutions in some countries and as a result may not yield the expected outcome. This may call into question whether the continuous changes in the various King reports are seen as burdensome to investors, and any future amendments of the King III in the forthcoming King IV need to consider investors' input and approval.

In addition, significant ethnic diversity–performance relations in Nigeria and insignificant results in South Africa may suggest high homogeneity (Nigeria) or heterogeneity (South Africa). This does not lend support to the King III code requirement for ethnic diversity. However, the positive gender diversity results in both South Africa and Nigeria suggest that the presence of women on boards can significantly improve performance if their number

increases. In fact, it lends support to both the King III and SEC 2011 and gender diversity literature which encourages firms to increase the number of women on corporate boards. Specifically, the results suggest that, despite the patriarchal nature of African societies (e.g. South Africa and Nigeria), female directors are instrumental in enhancing decision making which impacts positively on accounting profitability and market valuation. Hence regulatory authorities should develop gender quota laws in boardrooms and TMT to encourage female representation. More so, firms can enhance their performance by restructuring their boards to encourage more female representation.

In addition, the interdependence between some of the internal CG variables in both countries suggests that firms can complement and substitute CG structures to fit the needs of the firm. As such, one-size-fits-all structures may not be beneficial. This lends support to both King III requirements and SEC 20111 CG code which recommend that firms should set up CG structures which are fit for purpose, diverse and demographically effective. Therefore, firms have to structure their boards to ensure adaptation to the business environment of the firm.

More so, findings in both countries suggest that, on average, director shareholding and institutional shareholding impact negatively on firm performance. This suggests copying perceived good practices from developed economies which suggests director ownership and concentrated/institutional shareholding reduce agency cost may not be beneficial in the African context. Therefore, firms and regulators in African economies should take such recommended best practices with caution, as the legal and institutional context, especially in emerging economies characterised by weak enforcement of laws and strong informal societal norms, can encourage managers to show limited accountability. Specifically, owing to the high level of concentrated ownership, coupled with weak enforcement mechanisms, diffuse ownership should be encouraged to avoid opportunistic behaviour from institutional shareholders or director investors. Furthermore, more stringent regulations should be implemented in corporate governance codes to align the interest of institutional shareholders to those of minority investors in emerging African economies.

Finally, on average, CEO/chairman separation, frequency of board meetings and board interlock positively impact on firm financial performance in both countries, implying that separating leadership roles, having a minimum of four board meetings and employing resourceful directors as required by the CG codes of both countries are good practices and

other firms in both countries and beyond can benefit from such good practices. However, firms should avoid excessive board interlock, as this limits directors' concentration on monitoring management and assisting the company, meaning that they may become too busy to serve. As the evidence shows in both countries, board busyness negatively impacts on firm performance.

10.5 Limitations of Study

Every research study suffers from limitations. As such, the findings of this research should be interpreted considering the following caveats. First, there is potential limitation of the sample selected. The sample of 100 firms in South Africa and 80 firms in Nigeria may be relatively small. However, this sample size is larger compared to other cross-country studies which have included both countries. For example Kyereboah-Coleman (2008) included 16 firms, and Sanda et al. (2005) 93 firms from Nigeria. In South Africa, Mangena and Chamisa (2008) used 81 firms. In addition, the sample size surpasses those used in prior African studies (e.g. Barako et al. (2006). More so, most of the corporate governance variables were manually extracted from annual reports for 900 firm years, which is highly laborious. As such, time limitations, cost and practical circumstances meant the sample was chosen to ensure it is large enough for statistical significance and significant contribution while ensuring that the PhD is completed within the time frame.

More so, the various country CG compliance indices (SACGI and NICGI) were coded using a binary coding scheme and the indices are unweighted. As noted by Barako et al. (2006), Ntim (2009) and Ntim et al. (2012), unweighted indices are not able to capture important groups of requirements as they treat all CG provisions as equal in importance, which may be inconsistent in theory and practice. However, empirical research in CG suggests that weighted and unweighted indices give similar results especially where CG provisions are large (e.g. Barako et al., 2006, Ntim et al., 2010, Ntim et al., 2012, Ntim, 2013c). Specifically, this study did not use weighted indices because, in the latter, some CG provisions are awarded more weight than others which is not an accurate representation of respective country CG regulations. More so, the use of unweighted indices in this study is consistent with prior research (Ntim, 2013a, Ntim, 2013c, Black et al., 2006).

In addition, the study utilised primarily annual reports for data collection, especially for Nigeria, owing to the absence of data in databases such as DataStream and Compustat. The absence of other data sources limited the ability of the research to triangulate some of the annual reports' data with those from other sources. More so, as enforcement of good practices and accounting standards in emerging economies is notably weak, the reported information on annual reports may not reflect the true state of affairs. However, the use of annual reports in this study is consistent with previous CG studies conducted in Africa which have used principally annual reports (e.g. Ntim et al., 2014b, Ntim et al., 2014a, Ntim, 2014, Akinkoye and Olasanmi, 2014).

10.6 Direction for Future Research

Comparative corporate governance research in emerging economies, especially in Africa, is nascent and relatively new. This study has contributed in filling this gap, but there is still potential for future research. First, this study used the two biggest Africa economies, which may be similar in some form. Therefore, future comparative studies of large and a small economy, two smaller economies or a mix of more than two Africa economies will greatly improve on comprehensive understanding of CG practices.

Furthermore, comparing CG studies of emerging African economies and other developing economies across the globe may increase our understanding of how corporate governance interplays with local institutions to shape firm behaviour. More so, comparative studies between developed and emerging African economies testing similar constructs may improve our understanding of global corporate governance.

In addition, the study has mainly examined and compared the internal corporate governance–firm performance nexus. Future research can investigate how external CG mechanisms, (including the impact of market for corporate control, managerial and labour market, law among others) impact on firm financial performance. More so, future comparative studies can examine the impact of interdependence between internal and external CG structures on firm financial performance.

Moreover, other internal corporate governance variables not included in this research can be included in future research. For example, though this research incorporated 14 CG internal structures, other structures such as executive and non-executive compensation, board human

capital, intellectual diversity, board education diversity, and CEO and chairman tenure can be examined.

Fifth, future research should examine whether compliance with past CG regulations and current CG regulations has similar firm performance effect. For example, a longitudinal study of compliance with King II–firm performance association and compliance with King III–firm performance relations will enhance our understanding of how firms comply with various CG regulations over time.

In addition, future research can improve on the current study by constructing weighted and unweighted CG indices to investigate whether there are sensitivities between weighted CG index–firm performance and unweighted–firm performance. More so, the reliability of the results may be improved upon if future research includes at least two coders to check inter-coder consistencies. More so, future research can also use questionnaires to supplement information from annual reports.

Furthermore, this study adopted a purely positivist approach in studying CG behaviours. However, a mixture of both quantitative and qualitative research can provide a more holistic interpretation of results. For example, the results of this research can be improved through follow-up interviews with company directors to understand the reason for compliance with normative governance guidelines. This will add deeper understanding of quantitative results. Specifically, this method will provide information which is not reported in annual reports and may lead to deeper understanding of why firms comply with some provisions and not others and reasons for such behaviours.

Finally, future research can investigate what motivates corporate governance reforms in countries and the reasons for moving from one CG code to another. This can be done by conducting face-to-face interviews with key stakeholders in different countries who are involved with CG reforms. This will enhance our understanding of how CG structures and systems in different countries evolve.

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APPENDICES

APPENDIX A: TABLES

Table 25: Nigerian Instrumental Variable Regression Results for the Compliance Index Model Based on Accounting Performance Measure (ROCE) and Market Performance Variable (Q-ratio) for All 400 Firm Years

	Exp Sign	Durbin–Wu–Hausman Test		Instrumental Variable Estimate		OLS Estimates	
		ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio
R-Square (R^2)		.211	.303	.204	.277	.208	.294
Adjusted R^2		.171	.268	.167	.243	.171	.264
F-value		5.331(.000) ***	8.683(.000)***	5.431(.000) ***	8.100(.000)***	5.568(.000) ***	8.947(.000) ***
Standard Error		21.141	1.520	21.408	1.602	21.143	1.524
Durbin–Watson		1.008	1.138	1.017	1.143	.970	1.074
No of observations		400	400	400	400	400	400
Constant	+	-16.372(.080)*	2.658(.000)***	13.084(.001)***	7.021(.006) ***	-9.070(.133)	2.334(.000) ***
NICGI	+	.371(.014)***	-.026(.014)***	-	-	.241(.004) ***	.013(.043)**
R-NICGI	+/-	-2.023(.306)	.449(.002)***	-	-	-	-
P-NICGI	+/-	-	-	10.11(.004)***	1.484(.054)**	-	-
Sales Growth	+	.142(.009) ***	-.001(.620)	.153(.006)***	.006(.239)	.139(.011) ***	.001(.803)
Dual Listing	+	1.062(.204)	-.347(.356)	-1.049(.846)	-1.064(.028)**	1.725(.739)	-.581(.119)
Audit Firm Size	+	7.424(.012)***	.730(.001)***	3.993(.256)	.075(.846)	8.500(.002) ***	.631(.002) ***
Firm Size	+/-	-1.783(583)	.485(.038)**	-5.649(.150)	.377(.203)	-.571(.850)	.639(.008)***
Capital Structure (Gearing)	+/-	-.121 (.000)***	.001(.662)	-.118(.000)***	.008(.026)**	-.12(.000) ***	.004(.128)
Total Asset	+	.000(739)	-.000(.528)	.000(.957)	-.000(.002)***	.000(.673)	-.000(.003)***
Market Value	+/-	.000(.097)*	.000(.000)***	.000(.050)**	.000(.000)***	.000(.119)	.000(.000) ***
Capital Expenditure (CAPEX)	+/-	-.000(.421)	-.000(.004)***	-.000(.200)	-.000(.026)***	-.000(.517)	-.000(.047)**
Agriculture/Consumer Goods		12.553(.001)***	.391(.137)	15.91(.000)***	2.054(.000*)**	12.460(.000)***	.905(.002) ***
Finance Industry		-.144(.967)	-.932 (.000)***	-3.062(.425)	-1.164(.000)***	.770(.817)	-.50(.074)*
ICT/Real Estate		11.06(.022)**	.001(.998)	15.652(.003)***	1.836(.001)***	10.583(.027)**	.569(.120)
Industrial/Conglomerate		2.279(.665)	-.970 (.011)***	7.058(.209)	1.078(.115)	1.741(.740)	-.407(.309)
Natural Resource/Oil & Gas		20.607(.000) ***	-.296(.381)	26.468(.000)***	2.141(.006)***	19.729(.000)***	.420(.244)
Year 2011		-4.211(.215)	.001(.997)	-2.654(.454)	.330(.257)	-4.699(.163)	.089(.711)
Year 2013		-2.385(.486)	.287(.244)	-3.493(.321)	.030(.917)	-2.038(.550)	.257(.295)
Year 2014		-5.516(.116)	.313(.213)	-7.960(.036)**	-.436(300)	-4.750(.165)	.130(.598)
Year 2015		-9.082(.017)***	.823(.003)***	-13.711(.003)***	-.658(.332)	-7.630(.031)**	.408(.110)

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. More so, to avoid dummy variable trap, year 2012 and health care/consumer goods industry are excluded from the regression analysis. They are both used as base year dummy and base industry dummy for comparison reasons. NICGI is the Nigerian Corporate Governance index. R-NICGI is the residuals of the NICGI regressed against the control variables. P-NICGI is the instrumental variable used in the Instrumental Variable Estimate. It is the predicted values of NICGI got from regressing the NICGI against the control variables and four other internal variables including Board Size, Director Shareholding, Institutional Shareholding and Capital Structure (Gearing).

Table 26: Nigerian Correlation for Alternative Internal Corporate Governance Structures and Firm Performance for All 400 Firm Years

	ROCE	Q-Ratio	NICGI	Shareholder–NICGI	Stakeholder–NICGI	P_NICGI	R_NICGI	Board Size	Director Shareholding	Institutional Shareholding	Gearing
ROCE		.174***	.091*	.062	.147***	.105**	.030	-.004	.103**	.147***	-.168***
Q-Ratio	.248***		.170***	.145***	.186***	.156***	.036	.094*	.097**	.382***	.098**
NICGI	.130***	.070		.975***	.897***	.785***	.521***	.498***	-.031	-.034	.241***
Shareholder–NICGI	.097**	.039	.983***		.782***	.753***	.527***	.474***	.003	-.017	.218***
Stakeholder–NICGI	.192***	.138***	.883***	.782***		.735***	.437***	.468***	-.081*	-.081*	.241***
P_NICGI	.098**	.013	.775***	.739***	.742***		-.062	.625***	-.035	-.042	.257***
R_NICGI	.085*	.095**	.632***	.650***	.487***	.000		-.025	.045	-.016	-.021
Board Size	-.037	-.113**	.495***	.459***	.508***	.640***	0.000		-.137***	-.128***	.304***
Director Shareholding	.048	.161***	.004	.018	-.033	.005	0.000	-.183**		.409***	-.070
Institutional Shareholding	.089*	.349***	-.079	-.073	-.080	-.051	-0.062	-.173**	.476**		-.051
Gearing	-.105*	.043	.212**	.184***	.250***	.273***	0.000	.374**	-0.057	-0.067	

***, **, * denotes Pearson Parametric and Spearman non-parametric correlation significant at 1%, 5% and 10% respectively. Spearman correlation coefficients are at the top right of the table while Pearson correlation coefficients are at the bottom left of the table. NICGI is the Nigerian Corporate Governance index. R-NICGI is the residuals of the NICGI regressed against the control variables. P-NICGI is the instrumental variable used in the instrumental variable estimate. It is the predicted values of NICGI got from regressing the NICGI against the control variables and four other internal variables including Board Size, Director Shareholding, Institutional Shareholding and Capital Structure (Gearing).

Table 27: South African Instrumental Variable Regression Results for the Compliance Index Model Based on Accounting Performance Measure (ROCE) and Market Performance Variable (Q-ratio) for All 500 Firm Years

	Exp Sign	Durbin–Wu–Hausman Test		Instrumental Variable (IV) Estimate		OLS Estimates	
		ROCE	Q-ratio	ROCE	Q-ratio	ROCE	Q-ratio
R-Square (R^2)		.288	.277	.233	.328	.223	.246
Adjusted R^2		.260	.248	.205	.303	.194	.217
F-value		10.214(.000)***	9.674(.000)***	8.133(.000)***	13.065(.000)***	7.67(.000)***	8.70(.000)***
Standard Error		22.355	0.851	23.800	.827	23.328	.869
Durbin–Watson		1.055	1.101	2.005	1.856	1.055	1.041
Highest VIF Score		10.376	10.376	4.032	4.596	2.057	2.022
No of Observations		500	500	500	500	500	500
Constant	+	48.732(.136)	1.427(.252)	-142.936(.123)	7.269(.024)**	8.099(.55)	2.61(.000)***
SACGI	+	-.574(.161)	-.008(.589)	-	-	.318(.05)**	-.013(.038)**
R-SACGI	+/-	.950 (.031)**	-.008(.628)	-	-	-	-
P-SACGI	+/-	-	-	2.033(.081)*	-.076(.061)*	-	-
Sales Growth	+	.078(.036)**	.004(.002)***	.060.160)	.005(.002)***	.072(.065)*	.005(.001)***
Dual Listing	+	-7.425(.012)***	-0.120(.285)	-9.157(.005)***	-.092(.409)	-8.322(.007)***	-.144(.209)
Audit Firm Size	+	-8.573(.025)***	-.569(.000)***	-16.190(.001)***	-.381(.021)**	-9.972(.007)***	-.429(.002)***
Firm Size	+/-	-2.967(.486)	-.326(.045)**	-16.367(.026)**	.072(.779)	5.369(.026)**	.345(.000)***
Capital Structure (Gearing)	+/-	-.073(.024)**	.001(.274)	-.122(.001)***	.002(.201)	-.107(.002)***	.001(.457)
Total Asset	+	-.000(.657)	-.000(.425)	-.000(.057)*	-.000(.893)	-.000(.18)	-.000(.171)
Market Value	+/-	.000(.001)***	.000(.000)***	.000(.192)	.000(.000)***	.001(.035)**	.000(.000)***
Capital Expenditure (CAPEX)		-.000(.372)	-.000(.090)*	.000(.001)***	-.000(.000)***	.000(.700)	-.000(.003)***
Basic Material		-18.040(.000)***	-.142(.331)	-28.799(.000)***	.065(.733)	-22.862(.000)***	-.104(.461)
Consumer Goods		4.939(.268)	.218(.199)	-2.275(.631)	.401(.055)**	3.653(.412)	.355(.033)**
Finance Industry		-2.907(.369)	-.638(.000)***	1.276(.723)	-.840(.000)***	-2.488(.458)	-.624(.000)***
Industrial		-6.980(.063)*	-.418(.004)***	-16.918(.004)***	-.106(.606)	-8.373(.020)**	-.236(.078)*
Telecoms/Technology Industry		8.916(.039)**	-.014(.931)	3.885(.410)	.083(.608)	4.476(.312)	-.097(.555)
Year 2010		-2.157(555)	.11(.424)	9.158(.138)	-.221(.304)	1.371(.686)	.093(.462)
Year 2012		0.852(.797)	.059(.638)	-4.847(.261)	.193(.197)	-.882(.791)	.082(.509)
Year 2013		-3.638(.298)	.047(.720)	-12.780(.018)***	.231(.218)	-6.551(.053)**	.074(.556)
Year 2014		-5.390(.135)	-.048(.726)	-15.836(.008)***	.256(.213)	8.644(.011)***	-.034(.790)

Note: ***, **, * regression significant at 1%, 5% and 10% respectively. More so, to avoid dummy variable trap, year 2011 and consumer services/health care industry are excluded from the regression analysis. They are both used as base year dummy and base industry dummy for comparison reasons. SACGI is the South African Corporate Governance index. R-SACGI is the residuals of the SACGI regressed against the control variables. P-SACGI is the instrumental variable used in the instrumental variable estimate. It is the predicted values of SACGI got from regressing the SACGI against the control variables and four other internal variables including board size, director shareholding, institutional shareholding and capital structure (gearing).

Table 28: South African Correlation for Alternative Internal Corporate Governance Structures and Firm Performance for All 500 Firm Years
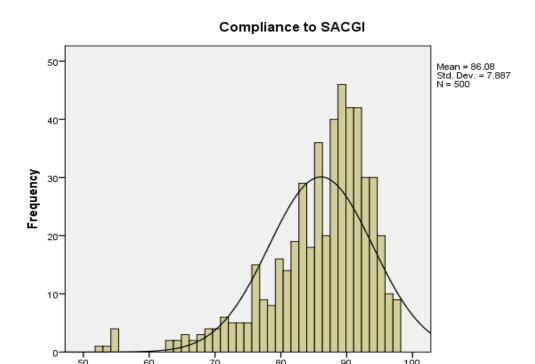
	ROCE	Q-Ratio	SACGI	Shareholder–SACGI	Stakeholder–SACGI	P_SACGI	R_SACGI	Board Size	Director Shareholding	Institutional Shareholding	Gearing
ROCE		.456***	-.065	-.036	-.120***	-.182***	.097**	-.049	-.105**	-.062	-.089**
Q-Ratio	.303***		-.090**	-.078**	-.084*	.002	-.100**	.032	-.086*	.066	-.032
SACGI	-.027	-.065		.972***	.640***	.591***	.716***	.346***	-.072	.035	.079*
Shareholder–SACGI	-.013	-.054	.984***		.464***	.564***	.713***	.301***	-.075*	.026	.069
Stakeholder–SACGI	-.075*	-.086*	.663***	.528***		.424***	.412***	.331***	-.012	.066	.094**
P_SACGI	-.157***	.001	.649***	.626***	.492***		-.069	.578**	.006	.081*	.128***
R_SACGI	.100**	-.086*	.760***	.761***	.453***	.000		-.028	-.075*	-.026	-.029
Board Size	-.087*	-.046	.359***	.333***	.307***	.547***	.000		-.036	.018	.156***
Director Shareholding	-.128***	-.035	.042	.040	.056	.066	.000	-.029		.193***	-0.007
Institutional Shareholding	-.094**	.079*	.094**	.096**	.054	.144***	.000	.044	.302***		.098**
Gearing	-.108**	-.026	.082*	.082*	.031	.121***	.000	.138***	.007	.107***	

***, **, * denotes Pearson Parametric and Spearman non-parametric correlations significant at 1%, 5% and 10% respectively. Spearman correlation coefficients are at the top right of the table while Pearson correlation coefficients are at the bottom left of the table.
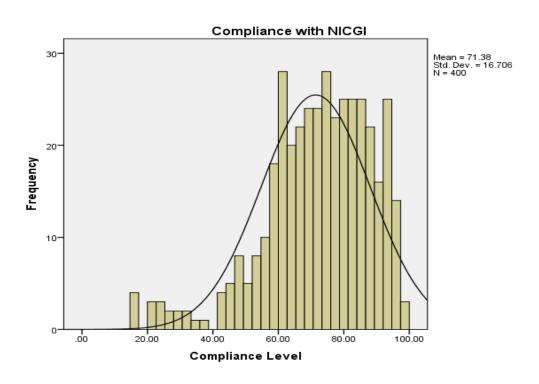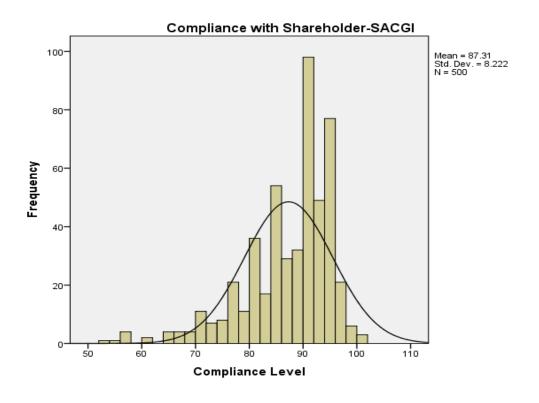
APPENDIX B: SUMMARY OF VARIABLES

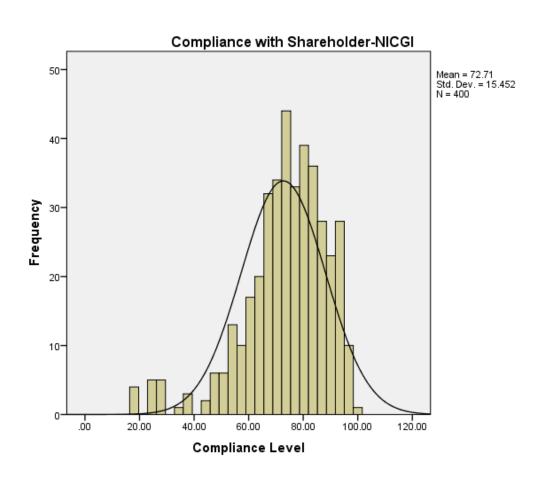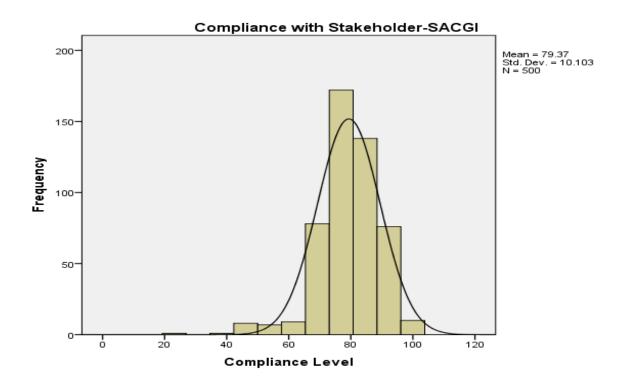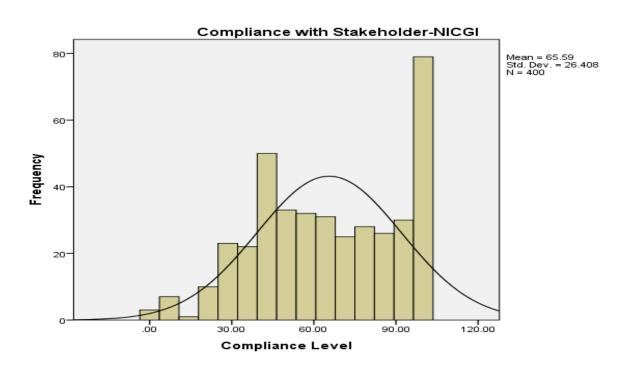| FIRM FINANCIAL RETURN VARIABLES (DEPENDENT VARIABLES)	
Q-ratio	Ratio of total assets minus equity book value plus market value of equity to total assets.
ROCE	Percentage of earnings before interest and tax (EBIT) divided by capital employed.
INDEPENDENT VARIABLES COMPLIANCE INDEX MODEL	
NICGI	Binary variable which takes a score of '1' or '0' if a firm complies with any of the 75 CG provisions of the SEC 2011. A firm's total compliance score for the year ranges from zero (0%), indicating no compliance, to 75 (100%), indicating full compliance.
SACGI	Binary variable which takes a score of '1' or '0' if a firm complies with any of the 84 CG provisions of the 2009 King III. A firm's total compliance score for the year ranges from zero (0%), indicating no compliance, to 84 (100%), indicating full compliance.
Shareholder–NICGI	Binary variable which takes a score of '1' or '0' if a firm complies with any of the 61 shareholder CG provisions of the SEC 2011. A firm's total compliance score for the year ranges from zero (0%), indicating no compliance, to 61 (100%), indicating full compliance.
Shareholder–SACGI	Binary variable which takes a score of '1' or '0' if a firm complies with any of the 71 shareholder CG provisions of the 2009 King III. A firm's total compliance score for the year ranges from zero (0%), indicating no compliance, to 71 (100%), indicating full compliance.
Stakeholder–NICGI	Binary variable which takes a score of '1' or '0' if a firm complies with any of the 14 stakeholder CG provisions of the SEC 2011. A firm's total compliance score for the year ranges from zero (0%), indicating no compliance, to 14 (100%), indicating full compliance.
Stakeholder–SACGI	Binary variable which takes a score of '1' or '0' if a firm complies with any of the 13 stakeholder CG provisions of the 2009 King III. A firm's total compliance score for the year ranges from zero (0%), indicating no compliance, to 13 (100%), indicating full compliance.
INDEPENDENT VARIABLES EQUILIBRIUM VARIABLE MODEL	
Board Structure (NEDs)	A variable which measures percentage of non-executive directors to total number of directors who serve on a board.
Executive Directors (EDs)	A variable which measures percentage of executive directors to total number of directors who serve on a board.
Proportion of independent NEDs (INEDs)	A variable which measures percentage of independent non-executive directors to total number of directors who serve on a board.
Frequency of Board Meetings	A variable which measures number of board annual meetings.
CEO/Chairman Role Separation (Duality)	A dummy of '1' if the positions of board chairman and CEO are held by separate individuals, otherwise '0' where the positions are held by an individual.
Gender Diversity	Measures percentage of women directors to total number of directors.
Ethnic Diversity	Measures the percentage of black directors to total number of directors.
Interlocking Directorate	Average number of boards the directors of a firm sit on.
Board Busyness	Average firm-level number of board meetings multiplied by average firm-level board interlock.
Gearing	Percentage of total debt to total equity.
Institutional Shareholding	Percentage of institutional shareholders to the total shares of a firm.
Director Shareholding	Number of shares held by directors (both executive and non-executive) to the total shares of a firm as a percentage.
Independent Audit Committee (IAC)	Percentage of independent non-executive directors to total number of directors who serve on the audit committee.
CONTROL VARIABLES	
Sales Growth	Percentage change of current year's sales minus previous year's sales divided by previous year's sales.
Dual Listing	A dummy variable '1' if a firm is listed on another stock market, otherwise '0'.
Total Asset	Firm's total asset.
Market Value	Firm's Market Value (a firm share price multiplied by number of issued shares).
Capital Expenditure (CAPEX)	The percentage of total capital expenditure to total assets of a firm at the end of a financial year.
Audit Firm Size	A dummy variable '1' if a firm is audited by top big four firms (i.e. PricewaterhouseCoopers, Deloitte Touche Tohmatsu, KPMG and Ernst and Young), otherwise '0'.
Industry	Six industry dummies for the classification of industry in each country.
Year	Dummy variable representing each year of the sample period in respective countries.
Firm Size	A dummy variable '1' if a firm is classified as a big firm in an industry per respective stock market rating, otherwise '0'.

APPENDIX C: NORMALITY CURVES FOR COMPLIANCE LEVELS

Compliance with Shareholder-SACGI

Mean = 87.31
Std. Dev. = 8.222
N = 500

Compliance with Shareholder-NICGI

Mean = 72.71
Std. Dev. = 15.452
N = 400

Compliance with Stakeholder-SACGI

Mean = 79.37
Std. Dev. = 10.103
N = 500

Compliance with Stakeholder-NICGI

Mean = 65.59
Std. Dev. = 26.408
N = 400

APPENDIX D: LIST OF SAMPLED FIRMS FOR NIGERIA

Company Name	Industry
A.G. Leventis	ICT/Real Estate
Access Bank	Finance Services
AfroMedia	Health Care/Consumer Services
AIICO	Finance Services
Airline Services/Logistics	Health Care/Consumer Services
Ashaka Cement	Industrial/Conglomerate
AXA MANSAARD	Finance Services
C & I Leasing	Industrial/Conglomerate
Cadbury Nigeria	Agriculture/Consumer Goods
CAP OIL	Natural Resource/Oil & Gas
Capital Hotels	Health Care/Consumer Services
Caverton	Health Care/Consumer Services
Champion Brewery	Agriculture/Consumer Goods
CHAMS	ICT/Real Estate
Computer Warehouse Group	ICT/Real Estate
ConOil	Natural Resource/Oil & Gas
Consolidated Hallmark	Finance Services
Continental Insurance	Finance Services
Cornerstone Insurance	Finance Services
CourtVille	ICT/Real Estate
Custodian	Finance Services
Dangote Cement	Industrial/Conglomerate
Dangote Sugar	Agriculture/Consumer Goods
Diamond Bank	Finance Services
Ecobank	Finance Services
Equity Insurance	Finance Services
Eternal Oil	Natural Resource/Oil & Gas
Fidelity Bank	Finance Services
Fidson	Health Care/Consumer Services
First Community Monument Bank	Finance Services
First Aluminium	Industrial/Conglomerate
First Bank	Finance Services
Flour Mill	Agriculture/Consumer Goods
Forte Oil	Natural Resource/Oil & Gas
GlaxoSmith	Health Care/Consumer Services
GoldInsure	Finance Services
Guarantee Trust	Finance Services
Guinness Nigeria	Agriculture/Consumer Goods
Honeywell Flour	Agriculture/Consumer Goods
Julius Berger	ICT/Real Estate
Livestock Nigeria	Agriculture/Consumer Goods
Mobil Oil	Natural Resource/Oil & Gas
Morison	Health Care/Consumer Services
MRS Oil	Natural Resource/Oil & Gas
Multiverse	Natural Resource/Oil & Gas
Nascom	Agriculture/Consumer Goods
NEM Insurance	Finance Sector
Nestlé Nigeria	Agriculture/Consumer Goods
Niger Insurance	Finance Services
Nigeria Aviation	Health Care/Consumer Services
Nigeria Brewery	Agriculture/Consumer Goods
OANDO	Natural Resource/Oil & Gas
Okomo Oil	Agriculture/Consumer Goods
Pharmdeko	Health Care/Consumer Services
Presco ltd	Agriculture/Consumer Goods
Prestige	Finance Services
PZ Cussons	Agriculture/Consumer Goods
Red Star	Health Care/Consumer Services
Regency	Finance Services
Royal Exchange Plc	Finance Services
Skye Bank	Finance Services
Sovereign Insurance	Finance Services
STACO	Finance Services
Stanbic	Finance Services
Standard Insurance	Finance Services
Sterling Bank	Finance Services
Total	Natural Resource/Oil & Gas

Tourist Company of Nigeria	Health Care/Consumer Services
Transcorp	Industrial/Conglomerate
UACN	ICT/Real Estate
UBA	Finance Services
Unilever	Agriculture/Consumer Goods
Union Dicon Salt	Agriculture/Consumer Goods
Unity Bank	Finance Services
Unity Kapital	Finance Services
University Press Plc	Health Care/Consumer Services
VITAFOAM	Agriculture/Consumer Goods
WAPCO/LARFARGE	Industrial/Conglomerate
Wema Bank	Finance Services
Zenith Bank	Finance Services

APPENDIX E: LIST OF SAMPLED FIRMS FOR SOUTH AFRICA

Company Name	Industry
Abdulela	Financial Services
Adaptit	Technology/Telecommunications
Adcock	Consumer Services/Health Care
AECI	Industrial
Africa Bank	Financial Services
Africa Equity	Financial Services
Africa Media Entertainment	Technology/Telecommunications
Africa Rainbow	Basic Materials/Oil and Gas/Utilities
Afro Centric	Consumer Services/Health Care
Afrox	Industrial
Anglo Gold Ashanti	Industrial
Anglo-American Platinum	Industrial
Arcelormittal	Industrial
Argent	Industrial
Aspen	Consumer Services/Health Care
Assore	Industrial
Astra Foods	Consumer Goods
Aveng Group	Industrial
Avi	Consumer Services/Health Care
Barclays Africa	Financial Services
Barloworld	Industrial
Basil Read	Industrial
Bauba	Basic Materials/Oil and Gas/Utilities
Bell Equipment	Industrial
Bidvest	Industrial
Biege	Consumer Goods
Blu Label Telecoms	Technology/Telecommunications
Buildmax	Basic Materials/Oil and Gas/Utilities
Cadiz	Financial Services
Capitec	Financial Services
Cargo Carriers	Consumer Services/Health Care
Cash Build	Consumer Services/Health Care
Caxton	Consumer Services/Health Care
Click Group	Consumer Goods
Clientele	Financial Services
Coronation	Financial Services
Datacentrix	Technology/Telecommunications
Datatec	Technology/Telecommunications
Discovery	Financial Services
Distell	Consumer Goods
DRD GOLD	Basic Materials /Oil and Gas /Utilities
Emira	Financial Services
EOH	Technology/Telecommunications
EVRAZ	Industrial
EXXARO	Basic Materials/Oil and Gas/Utilities
Finbond	Financial Services
First Rand	Financial Services
Fortress	Financial Services
Goldfields	Basic Materials/Oil and Gas/Utilities
Goliath	Basic Materials/Oil and Gas/Utilities
Grand Parade	Financial Services
Grindrod	Industrial
Group Five	Industrial
Growth Point	Financial Services
Harmony	Basic Materials/Oil and Gas/Utilities
Hosken	Financial Services
Hospitality	Financial Services
Howden	Industrial
Hulamin	Basic Materials/Oil and Gas/Utilities
ILOVO	Consumer Goods
Implates	Basic Materials/Oil and Gas/Utilities
Infrasors	Basic Materials/Oil and Gas/Utilities
Invicta	Industrial
JD Group	Industrial
JSE	Financial Services
Kumba Iron Ore	Basic Materials/Oil and Gas/Utilities
Lewis Stores	Consumer Goods

Liberty	Financial Services
Life Healthcare	Consumer Services/Health Care
Marafe	Basic Materials/Oil and Gas/Utilities
Mediclinic International	Consumer Services/Health Care
MetAir	Consumer Goods
MTN	Technology/Telecommunications
Naspers	Consumer Services/Health Care
Nu-World	Consumer Services/Health Care
Oasis	Financial Services
Omnia	Industrial
Pick & Pay	Consumer Goods
Pinnacle	Technology/Telecommunications
PPC	Industrial
PSG	Financial Services
Purple	Financial Services
Royal Bafokeng Platinum	Basic Materials/Oil and Gas/Utilities
Santova	Consumer Services/Health Care
Sasfin	Financial Services
Sasol	Basic Materials/Oil and Gas/Utilities
Sentula	Basic Materials/Oil and Gas/Utilities
Shoprite Holdings	Consumer Services/Health Care
Standard Bank	Financial Services
Tiger-Brands	Consumer Goods
Trencor	Consumer Services/Health Care
Value Group	Consumer Services/Health Care
Verimark	Consumer Services/Health Care
Vodacome	Technology/Telecommunications
Vukila	Financial Services
Vunani	Financial Services
Wesizwe	Basic Materials/Oil and Gas/Utilities
Woolworths	Consumer Services/Health Care
York Timba	Basic Materials/Oil and Gas/Utilities
Zeder	Financial Services