AN EMPIRICAL INVESTIGATION OF THE RELATIONSHIP BETWEEN CORPORATE GOVERNANCE AND FIRM PERFORMANCE: EVIDENCE FROM GHANA

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Thesis submitted in partial fulfilment of the requirements of the Robert Gordon University for the degree of Doctor of Philosophy

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November 2012

ABSTRACT

This thesis investigates the relationship between corporate governance and firm performance prompted by the Ghanaian Code introduced in 2003. Using a sample of the Ghanaian listed firms from 2000-2009 and the directors of these same firms, the thesis attempts to achieve four specific objectives. The first objective is to measure the degree of compliance with the Ghanaian Code provisions from the Ghanaian listed firms' annual reports during the whole, pre 2003 and post 2003 introduction of the code. The second objective is to empirically investigate the relationship between the degree of compliance with the Ghanaian Code and firm performance. The third objective is to empirically evaluate the perceptions of the directors of the Ghanaian listed firms on the adoption of the Ghanaian Code and its benefit to their firm's performance. The final objective is to critically examine whether the use of multiple governance data has the potential to affect the research on governance-performance relationship findings. Given the multiple governance data from the Ghanaian listed firms' annual reports and the directors' responses, the results based on the degree of compliance with the Ghanaian Code suggest a statistically significant improvement from pre 2003 period to post 2003 period. This evidence is supported by the directors' responses who noted that the standard of corporate governance has improved in their firms after the introduction of the Ghanaian Code. Also, the regression results based on the annual report data suggest that there is a statistically significant and positive relationship between the Ghanaian corporate governance index (*GCGI*) and profitability across Ghanaian listed firms, evidence supported by the directors' responses who noted that the full adoption of the Ghanaian Code is beneficial to their firm's performance. By contrast, the regression results based on the CEO duality, board size, proportion of non-executive directors, audit and remuneration committees suggest either statistically significant or no relationship between each of the five mechanisms and firm performance. These results are not supported in most cases by the directors' responses where they showed support for the adoption of these mechanisms except board size as beneficial to their firm's performance. Overall, the empirical analysis suggests a consensus between the regression results and the directors' opinions on the full adoption of the Ghanaian Code rather than the selective adoption of its specific provisions where there is disagreement. These results raise questions about the effectiveness of the selective adoption of a particular code provision to improve firm performance.

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CHAPTER ONE

INTRODUCTION

1.1   BACKGROUND OF THE THESIS

The Security and Exchange Commission Ghana (SECG) introduced corporate governance guidelines on best practices (hereafter the Ghanaian Code) in 2003 with which all Ghanaian listed firms were encouraged to comply. This was consistent with the implementation of codes in many countries around the world, for example, the Cadbury Committee (1992) to the Combined Code (1998) in the UK, King Report I (1994) and II (2002) in South Africa, Sarbanes Oxley Act, 2002 (hereafter SOX) in the US, amongst others. It is also reflected in the importance attached to corporate governance by the international organisations such as the Organisation for Economic Corporation and Development (OECD) and the Commonwealth Association for Corporate Governance (CACG). These codes underpinned by the agency theory were to address the misalignment of shareholder and manager interests resulting from the separation of ownership and control (Berle and Means, 1932). Given the objective of these codes of aligning shareholder and manager interests, listed firms were encouraged to comply with these codes because better-governed firms are expected to perform better than their poorly-governed counterparts.

But, does the adoption of corporate governance provisions from these codes really matter to firm performance? Weir and Laing (2000) pre 1992 and post 1992 regression results suggest that the adoption of the Cadbury Code recommendations has no impact on firm performance in the UK, the findings supported by CBI/Touch Ross (1995) directors' opinions study which suggests that Cadbury recommendations have had no positive impact on their firm's performance. By contrast, Ntim (2009) regression results suggest

that the adoption of the South African Code provisions (King Report II) has positive and statistically significant impact on firm performance, evidence supported by Jenkins-Ferrett (2001) where the directors of South African listed firms rated the adoption of corporate governance as *utmost important* to *important* in contributing to their firm's performance.

After the passage of SOX Act in 2002, Reed *et al* (2006) in their directors' opinions study asked financial executives of privately-held firms to identify other benefits that could be derived from the voluntary implementation of the Act. They reported that private-held firms get better financing options, better credit opportunities and the opportunities to take the firm public following the implementation of some of the provisions of the Act, suggesting that the cost of financing their firms operations is expected to be lower. Recently, Bhagat and Bolton (2009) separated their sample listed firms into pre 2002 and post 2002 SOX Act to investigate how governance-performance relationships might have been impacted by the Act. Their regression results suggest a negative and significant relationship between board independence and operating performance during the pre 2002 period, but a positive and significant relationship during the post 2002 period. However, their corporate governance indices introduced by Gompers *et al* (2003) and Bebchuk *et al* (2009) failed to provide consistent results during the sub-periods.

Given the diversity of findings, and as in Metrick and Ishii (2002) and Klapper and Love (2004) that firm-level corporate governance quality matter more in countries with weak legal systems, more research is needed to further understanding the adoption of corporate governance provisions and its impact on firm performance. In this respect, and given the widespread introduction of codes of corporate governance, this thesis will investigate the relationship between corporate governance and firm performance in Ghana from 2000 to 2009. As will be discussed in chapter four, there is substantial evidence to suggest that the relationship between the specific governance mechanisms and firm performance studies have taken place in Ghana (e.g.

Kyereboah-Coleman and Biekpe 2006a; 2006b; Abor and Biekpe, 2007; Kyereboah-Coleman and Amidu, 2008; Kyereboah-Coleman and Osei, 2008; Isshaq *et al*, 2009; Aboagye and Otieku, 2010). However, no single study to date has considered the degree of compliance with the Ghanaian Code specific governance provisions introduced in 2003 and its impact on firm performance. Beside, only transparency and disclosure scores have been developed for Ghanaian listed firms (Tsamenyi *et al*, 2007; Bokpin and Isshaq, 2009) but the authors failed to link the scores to firm performance. Furthermore, the directors' opinions on the current state of corporate governance in Ghana (Ocran, 2001) failed to ask directors views on whether the adoption of corporate governance is beneficial to their firm's performance.

In this respect, the study investigating the degree of compliance with the Ghanaian Code and its impact on firm performance provides good foundation to incorporate the development of a Ghanaian Corporate Governance Index (*GCGI*) as the main explanatory variable and the specific governance mechanisms[1] as additional explanatory variables. In addition, the directors' opinions on corporate governance and firm performance may help to validate and complement the findings of the *GCGI* and the specific governance mechanisms for the first time in the same study and context. This is because it is the board responsibility to implement good corporate governance[2] in their various firms and therefore incorporating their views regarding the formal adoption of the Ghanaian Code reflect the importance attached to its implementation, which may or may not support the findings from the governance-performance relationships from the regression results of the *GCGI* and the specific governance mechanisms.

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[1] These include the CEO duality, board size, proportion of non-executive directors, audit committee and a remuneration committee

[2] This is especially important in countries where the adoption of corporate governance is based on principles with the philosophy of comply or explain basis which is not backed by the force of law as in the case of Ghana.

1.2 MOTIVATION AND THE NEED FOR THE THESIS

This thesis is motivated by the following four reasons. First, it is almost a decade since the Ghanaian Code was introduced in Ghana. However, no research to date has investigated the degree of compliance with the Ghanaian Code provisions and its impact on firm performance. Prior to its introduction, and as will be discussed in chapter three, there were some inconsistencies and weaknesses in the regulation of firms in Ghana (Adda and Consulting, 2006). In this respect, it has provided a consistent approach to which the Ghanaian firms are governed and therefore provides the opportunity to investigate the relationship between the degree of compliance with the Ghanaian Code provisions and firm performance. Second, and as will be discussed in chapter four, the type of governance data used in each governance-performance relationship study may affect the research findings. In particular, most prior studies on governance–performance relationship have used either the specific governance mechanisms or a corporate governance index or the directors' opinions on corporate governance and firm performance which may significantly affect the research findings. Exceptions to this are Ntim (2009) and Bhagat and Bolton (2009) who integrated the specific governance mechanisms and corporate governance index in their governance-performance relationship studies. To date, research on this topic in Ghana has mostly used the specific governance mechanisms which are then regressed on firm performance (e.g. Kyereboah-Coleman and Biekpe 2006a; 2006b; Abor and Biekpe, 2007; Kyereboah-Coleman and Amidu, 2008; Kyereboah-Coleman and Osei, 2008; Isshaq *et al*, 2009; Aboagye and Otieku, 2010). These specific governance mechanisms in isolation may not be sufficient to discover the relationship with firm performance because some governance mechanisms are more effective than others in promoting profitability (Diacon and O'sullivan, 1995).

Beside, and as will be discussed in chapter four, these specific governance mechanisms are mostly collected from the Ghanaian listed firms through

questionnaire administration and interviews (e.g. Kyereboah-Coleman and Biekpe 2006a; 2006b) which might not reflect the actual governance practices against the firm performance measures used for these studies. Given the above reasons, one can argue that, the governance data in this thesis, for the first time, will be based on the degree of compliance with the Ghanaian Code provisions directly collected from the listed firms' annual reports to represent the specific governance mechanisms and the development of the *GCGI*, as well as questionnaire responses from the directors of these listed firms. This will be an extension to previous studies by Ntim (2009) and Bhagat and Bolton (2009) which will provide a platform for a comparison between the regression results based on the annual report data and the questionnaire responses from directors to determine whether the adoption of the Ghanaian Code provisions is beneficial to firm performance in Ghana. Third, all prior governance-performance relationship studies in Ghana (e.g. Kyereboah-Coleman and Biekpe 2006a; 2006b; Abor and Biekpe, 2007; Kyereboah-Coleman and Amidu, 2008; Kyereboah-Coleman and Osei, 2008; Isshaq *et al*, 2009) have failed to address the potential problems of endogeneity which is always an issue in governance-performance relationship studies (Black, 2001). Hence, the regression analysis of prior Ghanaian studies may suffer from the potential problems of endogeneity. As will be discussed in chapters five and nine, this thesis for the first time specifically addresses the potential problems of endogeneity of the governance-performance relationship investigation in Ghana.

Finally, only few previous governance-performance relationship studies in the developed countries have considered pre and post adoption of their respective country's code to determine the governance-performance relationship impact during the sub-periods. For example, and as will be discussed in chapter four, Weir and Laing (2000) studied pre 1992 and post 1992 Cadbury recommendations on the specific governance mechanisms-performance relationship in the UK, while Cui *et al* (2008) focuses on the development of a corporate governance index based on the pre 2003 and the

post 2003 Australian Stock Exchange (ASX) recommendations on good corporate governance. In the US, Bhagat and Bolton (2009) studied the pre 2002 period and the post 2002 period of the SOX Act by integrating the specific governance mechanisms and the corporate governance indices introduced by Gompers *et al* (2003) and Bebchuk *et al* (2009) to determine the governance-performance relationship impact as a result of the Act. In this respect, there is no available pre and post governance-performance relationship study in developing countries and in particular Africa where this thesis is based. Given the lack of evidence, this thesis in Ghana will separate the degree of compliance with the Ghanaian Code provisions into the pre 2003 (2000-2002) and the post 2003 (2004-2009) periods to investigate how the governance-performance relationship is impacted by the formal adoption of the Ghanaian Code. As in Cui *et al* (2008) and Bhagat and Bolton (2009), and given the introduction of the Ghanaian Code, 2003 is used as a seminal year and will be excluded from the analysis during the pre 2003 and the post 2003 periods.

1.3   OBJECTIVES OF THE THESIS

The principal objective of this thesis is to carry out an empirical investigation of the relationship between corporate governance and firm performance in Ghana prompted by the Ghanaian Code introduced in 2003. An investigation of the degree of compliance with the Ghanaian Code provisions and the directors' opinions on the adoption of the same code will help to improve our understanding of the applicability of corporate governance mechanisms replicated from the worldwide corporate governance reforms. In order to achieve the principal objective of this thesis, four specific objectives will have to be achieved. First, the thesis measures the degree of compliance with the Ghanaian Code provisions from the Ghanaian listed firms' annual reports and the subsequent development of the *GCGI* and its sub-indices. An important focus of this aspect of the thesis is to assess the extent to which the degree

of compliance is in line with the recommendations of the Ghanaian Code during the whole, pre 2003 and the post 2003 periods of its introduction.

The second specific objective of the thesis is to empirically investigate the relationship between the degree of compliance with the Ghanaian Code provisions and firm performance during the whole, pre 2003 and the post 2003 periods. This will be achieved in two ways. First, the specific governance mechanisms-performance relationship will be investigated to understand whether each governance mechanism on its own can have positive impact on firm performance. Second, the *GCGI*-performance relationship will also be examined to determine whether the development of the *GCGI* which covers several Ghanaian Code provisions is more important to firm performance than its specific governance provisions. Consequently, and after systematically addressing the potential problems of endogeneity, it might be expected that the development of the *GCGI* will have a more positive and statistically significant impact on firm performance than each specific governance mechanism.

The third specific objective of the thesis is to empirically evaluate the perceptions of the directors of the Ghanaian listed firms on the adoption of the Ghanaian Code provisions and its benefit to their firm's performance. In this respect, the achievement of this objective will help to validate and complement the regression results of the specific governance mechanisms and the *GCGI* impact on firm performance. On the other hand, it will help to identify additional issues that may not be addressed by the regression results from the annual report data. The final specific objective of the thesis is to critically examine whether the use of multiple governance data[3] has the potential to affect the relationship between corporate governance and firm performance. In this respect, the thesis will compare the regression results of

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[3] As will be discussed in chapter five, the multiple governance data include the specific governance mechanisms, the *GCGI* and the directors' opinions on corporate governance and firm performance to investigate the governance-performance relationship in the same study and context.

the specific governance mechanisms and the *GCGI* with the directors'
opinions on corporate governance and firm performance.

The opportunity to achieve these objectives will be provided by the Ghanaian
listed firms where data on the specific governance mechanisms and the
development of the *GCGI* will be based on their annual reports data from
2000 to 2009. Similarly, the questionnaire data will be collected from the
executive and non-executive directors of the same listed firms. In this
respect, the method of analysis will be based on multiple regression models
for the annual report data and a simple statistical analysis for the
questionnaire data.

1.4   CONTRIBUTIONS OF THE THESIS

There are six main contributions of the thesis to the existing corporate
governance research. First, the Ghanaian Code on corporate governance
suggests that the practices embodied in it are not backed by the force of law
but no study to date has investigated the degree of compliance among
Ghanaian listed firms since its introduction. As will be explained in chapter
six, this thesis seeks to fill this gap in the extant literature by providing for
the first time the degree of compliance with the Ghanaian Code provisions
across Ghanaian listed firms. In particular, the sample is grouped into pre
2003 and post 2003 introduction of the Ghanaian Code to determine whether
compliance with corporate governance provisions is better than when the
code was not in place. Although, considerable variability is expected in
corporate governance standards among Ghanaian listed firms, the results
indicate significant improvement from pre 2003 to post 2003 in the degree of
compliance with the Ghanaian Code provisions.

Second, the thesis provides the first direct evidence of the relationship
between the degree of compliance with the Ghanaian Code provisions and

firm performance in Ghana. Unlike prior governance-performance relationship studies in Ghana, the sample will be divided into sub-periods to show how the governance-performance relationships have been impacted by the introduction of the Ghanaian Code. In addition, the developed *GCGI* incorporates several specific governance provisions that are recommended by the Ghanaian Code and expected to have a more positive and significant impact on firm performance than the selective adoption of its specific governance provisions. In line with prior studies, and after systematically addressing the potential problems of endogeneity for the first time in Ghana, the regression results based on the *GCGI* show a positive and statistically significant impact on firm performance. However, the regression results based on the specific governance mechanisms suggest either statistically weak or no association between each of the five specific governance mechanisms and firm performance.

Third, the thesis attempts to offer the first direct evidence of the directors' opinions on the adoption of the Ghanaian Code provisions and its benefit to their firm's performance. In line with the degree of compliance with the Ghanaian Code, the directors' responses indicate that the standard of corporate governance in their firms has improved after the introduction of the Ghanaian Code. Contrary to the regression results of the specific governance mechanisms-performance relationship, the directors' responses offer strong support to a majority of selective adoption of the specific governance mechanisms as beneficial to their firm's performance. Consistent with the regression results of the *GCGI*-performance relationship, the directors' responses indicate strong support for the full adoption of the Ghanaian Code provisions as beneficial to their firm's performance instead of the selective adoption of its specific governance provisions. Furthermore, the directors' responses suggest their preparedness to comply with further corporate governance provisions such as the establishment of a nomination committee, as well as their strong support for an independent committee to review the Ghanaian Code.

Fourth, the thesis seeks to offer methodological extensions to previous corporate governance research because it integrates not only the extensively used specific governance mechanisms to the study of governance-performance relationship, but also other approaches, including the governance index-performance relationship and the directors opinions on corporate governance and firm performance in the same study and context. The integration of the multiple governance data in this thesis helps evaluate the consistency or otherwise of the governance-performance relationship testing. In particular, the directors' opinions on corporate governance and firm performance support the interpretation and understanding of the findings from the *GCGI* and the specific governance mechanisms impact on firm performance. Furthermore, it has helped to establish the directors' preparedness to comply with further corporate governance provisions not imposed by the Ghanaian Code and therefore not captured in the analysis of the *GCGI* and the specific governance mechanisms impact on firm performance findings.

Fifth, this thesis provides for the first time a comparison of the regression results and questionnaire responses among Ghanaian listed firms in the same study and context, which helps to build up an understanding of the relationship between corporate governance and firm performance from different standpoint. Comparing the findings across different research results helps to establish whether the specific governance mechanisms on their own or a set of such mechanisms is beneficial to firm performance with the responses from directors validating and complementing the regression results based on the annual report data.

Finally, investigating the degree of compliance with the Ghanaian Code and its impact on firm performance in Ghana has important policy implications. The investigation of corporate governance practices from the Ghanaian listed firms' annual reports and the responses from directors regarding the

adoption of the Ghanaian Code provisions helps offer suggestions to corporate governance regulators in relation to the likely success and the outstanding challenges of the implementation of corporate governance in Ghana. Also, the findings based on the governance-performance relationship which show that better governed firms perform better than poorly governed firms may encourage the Ghanaian firms to adopt the Code provisions in anticipation of improving their firm's performance.

1.5 STRUCTURE OF THE THESIS

The thesis is structured as follows. As a foundation to the development of corporate governance in Ghana, chapter two will provide an historical account of the worldwide corporate governance reforms underpinned by the agency theory and its effect on corporate governance practices across firms. Included in this chapter are discussions of the agency theory as an underlying theory for the development of corporate governance around the world, corporate governance reforms in the UK, US and South Africa, transnational institutional corporate governance reforms, and the evaluation of these reforms on worldwide firms' corporate governance practices. Chapter three contains the full account and where possible, a review of the Ghanaian corporate governance framework and how it fits into the worldwide corporate governance landscape. Areas that will be reviewed include; a comprehensive description of the Ghanaian legal and regulatory environment and the challenges facing the regulatory system; a detail discussion of the Ghanaian Code provisions; a critique of the Ghanaian Code against some of the world codes; and a discussion of potential improvement of the standard of corporate governance practices in Ghana.

Chapter four contains a review of prior theoretical and empirical evidence on governance-performance relationship and the directors' opinions on corporate governance and firm performance. Issues that will be reviewed

include; a discussion on the five specific governance mechanisms and the governance index impact on firm performance; a discussion of the directors' opinions on corporate governance and firm performance; hypotheses development on the basis of the review to empirically test the thesis' objectives; and a discussion of literature gaps and the potential thesis contribution. Chapter five presents data considerations and analysis procedures for the empirical analysis of the thesis. The chapter begins by discussing data, sample and the development of the *GCGI*. Included in this section of the chapter are discussions on the development of the *GCGI* based on the annual report data as the main explanatory variable, the measurement of the five specific governance mechanisms as additional explanatory variables, the measurement of the dependent variables and the control variables. The second issue of discussion concerns the description of a panel data analytical framework and how to address the potential problems of endogeneity in the thesis. Finally, the chapter discusses the questionnaire development and the analysis and reporting procedures in relation to the directors' opinions on corporate governance and firm performance.

In chapters six, seven, eight, nine and ten, the thesis presents the empirical analysis of the issues discussed in chapter five. In chapter six, the thesis focuses on the analysis of the degree of compliance with the Ghanaian Code provisions across the sample from 2000 to 2009. Four aspects of the degree of compliance with the *GCGI* developed from 36 specific governance provisions based on the Ghanaian Code recommendations will be analysed in this chapter. First, it discovers the degree of compliance with the *GCGI* for the full sample over the ten year period under investigation. This allows the thesis to investigate the progressive improvement of the degree of compliance with the Ghanaian Code provisions. Second, the thesis examines the degree of compliance with the sub-indices of the *GCGI* to determine each sub-index contribution to the overall *GCGI*. Third, it assesses the degree of compliance with the *GCGI* that existed prior to the introduction of the Ghanaian Code and after its introduction. Of particular concern in this respect

is whether the degree of compliance with corporate governance has improved following the introduction of the Ghanaian Code in 2003. Finally, the thesis tests for the statistically significant differences in compliance with the *GCGI* before and after the adoption of the Ghanaian Code provisions. In this respect, the sample firms are grouped into pre 2003 and post 2003 sub-periods given that the Ghanaian Code was introduced in 2003. Of interest is whether the regulators' effort, and the eventual introduction of the Ghanaian Code, has provided significant improvement of the degree of compliance with the *GCGI* during pre 2003 and post 2003 periods.

Chapter seven contains descriptive statistics, as well as a test of panel regression assumptions. The first section of the chapter examines the summary descriptive statistics of the dependent and control variables, as well as correlation analysis for all the variables used in this thesis. Given that panel regression technique is used to test all hypotheses that will be discussed in chapter four, the second section of the chapter tests the panel regression assumptions to help determine the appropriateness of the empirical model specification. Of particular interest is whether pooled ordinary least square (OLS) or the alternative random and fixed effects is appropriate. In this respect, Breusch and Pagan (1980) Langrange Multiple test will be conducted to choose between pooled OLS and the alternative random or fixed effects. Following that, the Hausman specification test will help to differentiate between random and fixed effects regression models. Chapter seven will conclude that fixed effect regression is appropriate for the accounting-based firm performance (i.e. ROA and ROE), while the random effect will be considered appropriate for the market-based firm performance measure (Q-ratio).

In chapter eight, the thesis presents the empirical evidence of the relationship between corporate governance based on the annual report data and firm performance. In this regard, two aspects of the governance-performance relationship are analysed. First, the thesis explores the

relationship between each of the five specific governance mechanisms, as well as the *GCGI* and firm performance during the whole period under investigation. Of particular interest in this respect is whether each of the five specific governance mechanisms can have an impact on firm performance or a set of these mechanisms developed into the *GCGI* is more important to firm performance. Second, the thesis compares pre 2003 and post 2003 governance-performance relationship based on the five specific governance mechanisms and the *GCGI* from the annual report data. Of interest in this respect is whether the Ghanaian listed firms perform better within the governance environment that existed prior to the introduction of the Ghanaian Code or after the implementation of the Ghanaian Code.

In chapter nine, the thesis conducts endogeneity tests and a series of robustness checks of the results discussed in chapter eight. Given that the *GCGI* is the main explanatory variable, the chapter tests for the presence of endogeneity where the *GCGI* is endogenously related to the accounting-based firm performance measures of ROA and ROE. It then addresses the problems of endogeneity based on two main strategies. First, a lagged governance-performance relationship is estimated for the five specific governance mechanisms and the *GCGI* during the whole, pre 2003 and post 2003 periods. Of particular interest of this estimation is to address the problems of endogeneity that is caused by a time-lag. Second, it estimates panel instrumental variable regressions to address the problems of endogeneity. Of particular interest in this respect is to use the appropriate instrument (s) to represent the *GCGI*. In this respect, instruments such as board size, director holdings and the Ghanaian Code Change are used in two-stage instrumental variable fixed effect regressions to estimate the relationship between the instrumented *GCGI* and the accounting-based firm performance measures of ROA and ROE.

In chapter ten, the thesis presents the empirical evidence on the directors' opinions on corporate governance and firm performance. The main objective

of this section of the thesis is to compare the perceptions of the directors of the Ghanaian listed firms regarding the adoption of the Ghanaian Code and its benefit to firm performance with the regression results based on the annual report data discussed in chapters eight and nine. First, the questionnaire responses help to provide an in-depth insight into corporate governance implementation issues to include whether; the Ghanaian Code is a benchmark for good corporate governance in Ghana, the standard of corporate governance has improved after the introduction of the Ghanaian Code, the directors are prepared to comply with further corporate governance provisions, they received support from regulators in the implementation of corporate governance, and a need to review the Ghanaian Code. Second, the questionnaire responses also allow an in-depth study into the benefit of; separating the roles of the Chief Executive Officer (CEO) and the Chairman, a board size of between eight and sixteen, a balance of executive and non-executive directors, presence of audit and remuneration committees, and the full adoption of the Ghanaian Code provisions. The questionnaire responses provide a platform for the thesis to validate the regression results based on the annual report data. Chapter eleven concludes the thesis with particular focus on the summary of the key results, contributions of the thesis, limitations of the thesis and suggestions for future research.

CHAPTER TWO

AGENCY THEORY AND THE WORLDWIDE GOVERNANCE REFORMS

2.1   INTRODUCTION

This chapter discusses the agency theory and the worldwide corporate governance reforms as a foundation to the development of corporate governance in Ghana that will be discussed in chapter three. Although, the agency theory as an underlying theory for the development of corporate governance will be discussed, the main objective of this chapter is to provide historical account and where possible, a review of corporate governance reforms worldwide and its effect on firms' corporate governance practices. In particular, the chapter focuses on the UK, US, South Africa and transnational institutional reforms (OECD and Commonwealth Association for Corporate Governance) and their effects on the worldwide firms' governance practices. The underlying principle is to get better understanding of international corporate governance practices within which the Ghanaian corporate governance framework that will be discussed in chapter three can be better understood. The rest of the chapter is structured as follows. Section 2.2 discusses the agency theory and corporate governance development. Section 2.3 examines the corporate governance reforms in the UK, US and South Africa. Section 2.4 reviews transnational institutional corporate governance reforms. Section 2.5 evaluates the effects of the various reforms on the global firms' governance practices, while section 2.6 provides summary to the chapter.

2.2 AGENCY THEORY AND CORPORATE GOVERNANCE DEVELOPMENT

The agency theory has been a fundamental part of corporate governance discussions. In this respect, the underlying assumption of the theory is that of the separation of ownership and control (Berle and Means, 1932), where the shareholders mandate the managers to manage their business on their behalf. However, and given the likelihood that managers instead of shareholders may control firms, a number of managerial theories of the firm during the 1960s have attempted to model managerial actions free from the control of shareholders. In particular, researchers such as Williamson (1964), Marris (1964), Monsen and Downes (1965) have argued that in a business operational environment whereby public firms are perceived to be under the control of managers, their objectives are expected to favour the managerial interests rather than the shareholder interests. Arguably, the separation of ownership and control might lead to a conflict of interest on the part of the managers which could subsequently link to the notorious agency problem.

Recognising the seriousness of the agency problem is very important to the shareholders, but in the absence of appropriate governance mechanisms, the shareholders may be unable to exercise control over the managers contracted to look after their interests in the management of a firm. In this respect, agency theorists during the 1970s and 80s argued that a number of governance mechanisms exist that may limit managers from focusing on their own interests rather than the shareholders' interests. For example, Ross (1973) was the first to investigate the agency problem, with a detailed theoretical explanation of the agency theory being presented by Jensen and Meckling (1976). The authors described the managers of the company as the agents, and the shareholders as the principals. They noted that in the case of agency relationship, and provided that both the managers and shareholders are utility maximizers, the managers will not always make decisions in the best interest of the shareholders; therefore the resulting conflict of interest might lead to the agency problem.

Thus, one way of monitoring the managers' actions is to make sure that they are not acting based on a self interest motive but for the benefit of the shareholders. This might be achieved by way of implementing good corporate governance practices which allows non-market control mechanisms to be put in place in order to safeguard the shareholders' interests. For example, the appointment of non-executive directors, separating the role of the CEO from the chairman, establishment of board committees, demanding access to information and allowing shareholders to participate in the running of the firm are all control mechanisms put in place to protect the shareholders' interests. These mechanisms have been the focus of the agency theory to safeguard the shareholders' interests from expropriation by the managers. Similarly, Fama (1980) and Fama and Jensen (1983a; 1983b) are of the view that managerial competition in the labour markets and the presence of non-executive directors may also constrain managers in pursuing their own personal interests.

Given the agency theory proposition that boards dominated by executive directors (insiders) are not accountable to shareholders (Fama, 1980; Sonnenfeld; 2002), the presence of non-executive directors (outsiders) on the board is suggested to be an effective internal governance mechanism used to partially reduce the agency problems in modern firms (Fama, 1980; Lipton and Lorch, 1992; Jensen, 1993). In particular, Fama (1980) and Fama and Jensen (1983a) are of the view that board of directors with significant proportion of non-executive directors can limit the use of executive discretion. For example, and given the outside directors concern to maintain their reputation in the external labour market (Fama and Jensen, 1983a), the presence of non-executive directors on the board can limit the executive discretion by exploiting their monitoring ability and defending their reputations as effective independent decision makers.

The agency theory also suggests that the impetus of the inherent conflict of interests in the shareholders-managers relationship leads to the agency costs. The agency costs arise where there is a separation of ownership and control of a firm and the resulting costs incurred by the shareholders in an attempt to monitor the managers' activities (Fama and Jensen, 1983b). In this respect, the agency costs might result from the shareholders' effort to monitor the behaviour of the managers, as the latter have the power to use some strategic information to their own advantage. The fundamental question is therefore, how can the shareholders exercise control over the managers? Jensen and Meckling (1976) and Benston (1985) have argued that shareholders' and managers' interests may be aligned through managerial ownership. Researchers such as Schleifer and Vishny (1986) have also argued that the managerial interests may be minimised by the predominance of larger blockholders who have the resources and ability to monitor the managers' action. However, Eisenhardt (1989) argued that it is expensive and very difficult for the shareholders to verify what the managers are doing.

That notwithstanding, other incentive schemes and contracts may also be used as monitoring techniques to align the shareholders' and managers' interests. For example, executive compensation packages and linking remuneration to performance are suggested to minimise the agency costs resulted from the separation of ownership and control (Coughlan and Schmidt, 1985; Murphy, 1985). Arguably, managers are likely to pursue their own interests in order to gain higher bonuses if remuneration is linked to performance, which effectively may lead to the tendency to focus on project and firm investments in the short-term rather than the long-term shareholder wealth maximisation (Boatright, 1999). However, Short *et al* (1998) argued that the tendency of short-termism[4] is characterised in countries (e.g. UK) with outsider-dominated shareholders where the business

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[4] Short-termism is defined as a tendency to foreshorten the time period applied to investment decisions, or use the discount rate higher than the firm's opportunity cost of capital (Demirag and Tylecote, 1992).

operational environment is not dominated by firms directly controlled by their managers but through the actions of outsiders such as institutional investors who have not necessarily focused on long-term performance of the firms.

Beyond the internal governance mechanisms, another way in which the agency costs may be minimised between shareholders and managers is through external factors. For example, in a regulatory environment whereby financial disclosures are mandatory, the statutory audits which provide independent confirmation of financial performance measures by external auditors can be the basis to assess the efficient contract between the shareholders and the managers (Watts and Zimmerman, 1983; Wallace, 1987). Similarly, Jensen and Ruback (1983) considered the important role play by the stock market as a means of disciplining firm managers through the takeover mechanism. In this respect, if shareholders are not happy with a firm's managers they can vote in favour of a takeover. Given the threat of takeover as a means of disciplining managers, it discourages them from pursuing their own interests at the expense of shareholders because they do not want to lose their jobs. This is particularly important because according to Rappaport (1990), the takeover market 'represents the most effective check on management autonomy ever devised' (p.100).

The labour market discipline can also be an important external governance mechanism to help reduce the agency costs. For example, Fama and Jensen (1983a) are of the view that the labour market discipline can motivate managers to act in the best interest of shareholders if it provides future opportunities that managers are interested. In this respect, if the available opportunities are responsive to 'on-the-job' performance, then the managerial objectives will be aligned with the shareholders' interests. Also, and given the importance of the market for directors, the discipline provided by the threat of job dismissal in firms with poor performance acts to align the objectives of managers and shareholders (Jensen and Murphy, 1990; Cosh and Hughes, 1997b; Conyon and Nicolitsas, 1998). In particular, and given

'on-the-job' poor performance, the value on the director labour market will fall following dismissal and therefore the threat of job dismissal will align managerial objectives with that of the shareholders' interests.

Since the 1990s several reforms in respect of codes development and policy documents have taken place globally in an attempt to help firms improve their corporate governance standards to safeguard the shareholders' interests. In particular, most of the worldwide corporate governance reforms have focused on agency theory in the development of code of best practices on corporate governance. In the UK, for example, the major corporate governance reports such as the Cadbury Committee (1992), the Greenbury Committee (1995), the Combined Code (2008, 2006, 2003, 1998), the Smith Committee (2003), the Higgs Committee (2003) and the UK Corporate Governance Code (2010) have all focused on the agency theory paradigm by protecting and enhancing wealth maximization of shareholders. Similarly, the 2002 SOX in the US placed much emphasis on the protection and shareholder value maximization. In the developing countries and in particular Africa where the country (Ghana) of study is based, South Africa was the first to develop a corporate governance code of best practice based on the 1994 publication of King I Report (Demirag *et al*, 2000; Mallin, 2004) followed by King II and III in 2002 and 2009 respectively. As a result, the transnational institutions (OECD-1999 & 2004 and Commonwealth Association of Corporate Governance-1999) also focused on the fundamental principles of corporate governance as minimum standards for member countries to develop their own code of best practice suitable for each individual country's legal, cultural and regulatory requirement. Notably, these principles were replicated from the earlier corporate governance reforms mostly experienced in the UK, US and South Africa.

Fundamentally, the key issue addressed by the progressive corporate governance reforms worldwide is the agency problem. To achieve this, the recommendations made by these codes cut across similar non-market

mechanisms in relation to board composition; board committees; shareholder rights; financial affairs and auditing; and disclosure practices in order to safeguard the interest of shareholders. For example, and to minimize the agency problem, the progressive corporate governance reforms underpinned by the agency theory since the Cadbury Report (1992) to date have all recommended the adoption of these mechanisms which are not backed by law in the case of the UK and South Africa. However, this is not the case in the US where the adoption of these specific governance mechanisms is backed by law.

Given that the main purpose of the worldwide corporate governance reforms is to protect the shareholders' interests, this thesis is grounded on the *agency theory* paradigm which posits that the adoption of good corporate governance by a firm reduces its agency costs resulting from the separation of ownership and control, in other words, it helps to improve firm performance by realigning the shareholders' and managers' interest. Thus, how companies are directed and controlled (Cadbury, 1992) in order to minimize the agency problem form the basis of corporate governance provisions adopted by firms worldwide. Within this framework, the worldwide corporate governance reforms are discussed in the following sections, and where possible provides its effect on firms' corporate governance practices.

2.3   CORPORATE GOVERNANCE REFORMS IN THE UK, US AND SOUTH AFRICA

This section examines the corporate governance reforms in the UK, US and South Africa with particular focus on the key recommendations made by the various codes in these countries to address the agency problems. Arguably, corporate governance failures and the various company scandals globally

triggered the need for corporate governance reforms[5] where specific governance mechanisms were introduced to safeguard the interest of shareholders. In the recent past, the global recession in 2008-2009 has also raised questions on the effectiveness of the existing corporate governance provisions adopted by firms globally. Whereas the UK and South Africa governance reforms are characterised with the principles-based approach to corporate governance and the philosophy of *comply* or *explain*[6], the formulation, implementation and enforcement of corporate governance in the US are based on rules. Of particular interest to this thesis is the purpose of the various reports/rules in addressing the agency problems and how they try to achieve their purpose.

2.3.1 UK corporate governance reforms

As indicated in section 2.2, the major corporate governance reports in the UK since the Cadbury Report (1992) to the 2010 UK Corporate Governance Code have all focused on addressing the agency problem in order to maximise shareholder wealth. In this regard, board structure mechanisms, board committees, accounting and auditing, shareholder rights, internal controls and disclosure practices have been the focus of numerous reports. Out of these came the UK Corporate governance Code which identifies key provisions in the area of leadership, effectiveness, accountability, remuneration and relations with shareholders. In particular, and as recommended by the code, the board are mandated to take the strategic

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[5] Iskander and Chamlou (2000) reported the first well-documented failure of governance as the South Sea Bubble in the 1700s in the UK followed by the stock market crash of 1929 in the US which revolutionlised business law in England and the Securities law in the US. In addition, the secondary banking crisis of the 1970s in the UK, the US savings and loans debacle of 1980 and the Asia financial crisis generated much debate about the systematic failures in the corporate world. Further, company scandals such as the Maxwell affair, BCCI, issues of excessive remuneration at the British Gas, the collapse of Baring bank, the Enron affair, Parlamat and WorldCom have all interrupted the history of corporate governance. These, amongst other things, prompted many initiatives of corporate governance reforms globally.

[6] The philosophy of *comply* or *explain* means that firms should be encouraged to *comply* with the code in spirit rather than the letter and where necessary provide explanation (*explain*) why they have not followed the code's provisions.

leadership of a firm with the post of the CEO and the Chairman separated. As part of their function, the percentage of the non-executive directors (NEDs) included in the board should play both monitoring and advisory roles in the process of evaluating management performance. The board committees recommended by the code include nomination, audit and remuneration. These committees are to support the functions of the board in the areas such as risk management and internal control, appointment of directors, audit and the designing of a remuneration policy. Additionally, the code has recommended that there should be a dialogue with shareholders based on the mutual understanding of objectives. Interestingly, the percentage of the NEDs who are supposed to monitor and advise the board could be professionals who are executive directors of other firms. In this respect, firms may have executive directors who sit on other boards as NEDs and therefore their independence in mind and appearance may be questioned. The implication here is that these executive directors may not necessarily play the monitoring and advisory role of non-executive directors as a result of the executive directorship that they hold in other firms.

In the UK, the formulation, implementation and enforcement of the specific governance mechanisms to minimise the agency problem have been successfully achieved through a series of committees' reports[7]. This is very important because different committees address different mechanisms which allowed these committees to focus on specific areas of concern. For example, the Cadbury Report (1992) recommended a minimum number (three) of non-executive directors on the board. However, the Higgs Report (2003) reinforced this provision after the Enron debacle in the US and recommended that at least half of the board should comprise non-executive directors because of its importance. This approach in the UK has set a precedent through which other codes are influenced globally.

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[7] For example, Cadbury Report (1992), Greenbury Report (1995), Hampel Report (1995), Turnbull Report (1999), Higgs Report (2003) and Smith Report (2003) provided good foundation which was later adopted by the Combined Codes (2008; 2006; 2003; 1998) and the subsequent publication of the UK Corporate Governance Code in 2010.

2.3.2 Corporate governance reforms in the US

In the US, the Wall Street Stock Market crash in 1929 uncovered some market manipulation, insider dealing among company directors, general mismanagement and the violation of shareholder rights. This prompted the US Congress to enact the Securities Act 1933 and the Securities and Exchange Act 1934 in response to the abuses. These Acts were enacted to improve transparency in relation to corporate financial disclosure. Unlike the UK principles-based approach to corporate governance, the US corporate governance system is more of rules. The rules-based approach of corporate governance has been the nature of reforms in the US. Over the years, there had been a number[8] of state and federal developments including takeovers and constituency statutes under state laws.

In 2001, the US further experienced corporate crises resulting from the financial scandals of WorldCom, Tyco International, Adeplhia Communication, Global Crossing, Quest Communications, Computer Associates, and Arthur Andersen. However, the collapse of Enron, the largest bankruptcy in the US history, in particular was the focus for attention. It was apparent that an evidence of accounting fraud, regulatory failures, and executive excess as well as close relationship with the company's external auditors led to the corporate governance reforms by the US Congress. The reforms were incorporated in the Accounting Industry Reform Act 2002, generally known as the SOX. Similar to the UK reforms, the purpose of the SOX was to address the agency problems by placing much emphasis on the protection of shareholders value maximisation.

The SOX focused on a broad-based reform of listed firm's accounting oversight with an initial requirement for the CEO and chief financial officer (CFO) to certify that quarterly and annual reports filed on the Security and

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[8] For example, the Delaware corporation law which has been suggested to be company friendly (Mallin, 2007); and the Employee Retirement Income Security Act 1974 which focused on private pension funds.

Exchange Commission (SEC) are in full compliance with applicable Securities laws and present a fair picture of the financial position of the firm. Failure to comply leads to severe penalties up to a fine of $1 million or ten years imprisonment when aware that the information disclosed does not comply with the applicable securities laws requirement. Following that, the Act addressed the strengthening of external auditor independence and the establishment of an audit committee. It stated that all listed firms on the New York Stock Exchange (NYSE) must have in place an audit committee with independent members, and at least one member should be a financial expert. Disclosure requirement of the name of the financial expert and whether the person is independent from management must be stated in the annual report. More importantly, the SOX establishes the Public Company Accounting Oversight Board (PCAOB) as a new regulatory body for external auditors, charged with the responsibility of registering all external auditors for listed firms on the NYSE. This applies to both US and non-US audit firms.

Although the NYSE has mandated listed firms to have majority independent non-executive directors on the board and the establishment of a nomination, compensation and audit committees, the SOX mainly focused on audit by supporting the establishment of audit committee instead of the broader view of governance reforms as in the case of the UK. For example, neither NYSE nor SOX addressed the problem of duality as experienced in the UK which suggests that US regulators encourage firms to combine the two roles. Unlike the UK which used a series of committees to address the governance failures, the progressive corporate governance reforms in the US are mainly based on enactment of laws by law makers to safeguard the interest of shareholders.

2.3.3 The South African corporate governance reforms

The progressive corporate governance reforms in South Africa are similar to the UK where committee reports are used as the basis to address the agency

problem. However, the specific governance provisions go beyond what is experienced in the UK and the US. For example, the King I Report (1994) focused on an integrated approach to corporate governance which went beyond the financial and regulatory aspects of corporate governance by incorporating stakeholder theory[9]. This inclusive approach of corporate governance was based on the consensus of the South African business community. Although the Report addressed the traditional areas of corporate governance such as the role and function of the board and internal audit, it significantly considered the integrated sustainability reporting including stakeholder relations, ethical practices and social and transformation issues. However, the King I Report (1994) failed to specify any number for independent non-executive directors on the board as well as the establishment of a formal nomination committee as experienced in the UK and US. As an improvement as well as reinforcing King I, the King II Report (2002) recommended the majority of the board to be independent non-executive directors, discouraged duality, provided for risk management and internal control, disclosure practices including sustainability reporting, establishment of board committees (nomination, audit and remuneration) and encouraged meaningful dialogue with shareholders.

Out of the King I and II Reports came the King III Report (2009). However, as a result of the enactment of the South African Companies Act no. 71 of 2008, and the changes in the international governance trends, the King III Report was published in 2009 to incorporate the changes. The new issues included in the report for the first time ranges from information technology governance, business rescue, fundamental and affected transactions to language, gender and terminology. Basically, these changes were made

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[9] The underlying assumption of the stakeholder theory is that firms are expected to maximise the welfare of multiple stakeholders who are directly or indirectly affected by their operations but not only the shareholders as in the case of the agency theory paradigm (Blair, 1995). However, Sternberg (1997) rejected the application of the stakeholder theory in the context of business and corporate governance by suggesting that the stakeholder theory distracts business from achieving its objective of maximizing long-term shareholders value, denying accountability to shareholders and also undermines the shareholders from the right of their private property.

based on what has been addressed in the South African Companies Act no.71 2008. But the uniqueness of the King III Report and unlike the King I and II Reports is that the application of the code should be by all entities regardless of the way and form of incorporation or establishment. This means that the code applies to all sectors including public, private and not-for-profit sectors. It is worth noting that the principles contained in King III Report have some similarities with the UK Corporate Governance Code. However, and unlike the UK where the Code is applicable to only listed firms on a '*comply* or *explain*' basis, the South African Code applies to all entities ranging from companies listed on Johannesburg Stock Exchange to not-for-profit organisations. It is expected that the directors should make clear in the company's annual report regarding proof compliance with the code or provide reasons for non-compliance. This will enable the stakeholders to challenge the directors on the quality of its governance (King III Report, 2009).

Although, the specific governance provisions experienced in South Africa to minimise the agency problem is evidenced in the various reports, it has however gone beyond what is experienced in the UK and US. This is very important because firms may have some difficulties in complying with all the provisions and the objective of maximising shareholder value as proposed by the agency theory might not be supported. In this case, compliance with certain provisions replicated from the South African Companies Act no. 71 2008 might not be value relevant as all firms will any way comply with such provisions because they are backed by the Companies Act.

2.4   INTERNATIONAL CORPORATE GOVERNANCE REFORMS

This section reviews the transnational institutional corporate governance reforms. Following the need for international regulation as a result of globalisation of business activities among corporations, this has generated some global agreement on constructive principles of good corporate

governance developed by transnational institutions to apply across countries with different political, legal and economic backgrounds. Of particular interest to this thesis are the OECD principles of corporate governance and the Commonwealth Association for Corporate Governance (CACG) which is examined in turn.

2.4.1 The OECD corporate governance reforms

With the endorsement of the World Bank, International Monetary Fund (IMF) and the Asian Development Bank (ADB), the OECD publication of the principles of corporate governance was the first international corporate governance standards to be adopted by member countries. The business sector advisory group was formed in 1996 and a task force to refine a set of core principles of good corporate governance. As in the case of other governance reforms, this came as a result of corporate scandals and failures around the world and in particular the Asia financial crisis which was an indication of systematic failure in the corporate world. In 1999 the OECD published its first principles of corporate governance which centred on fairness, transparency, accountability and responsibility (OECD, 1999). The body through its task force of the Business Sector Advisory Group identified a framework of five basic principles of corporate governance including protection of shareholder rights, equitable treatment of shareholders, protection of stakeholder rights, timely and accurate disclosure and transparency and diligent exercise of the board of directors' responsibilities. The framework was meant to be adopted by both OECD member countries and non-member countries. However, the degree of application was basically similar to the UK/US corporate governance practices. The principles support the increased disclosure and transparency practices to which the UK and the US firms are required to adhere by their regulators.

Following the 1999 principles, the OECD in May 2004 released a revised version of the principles of corporate governance. The idea was to step up to improve the corporate governance practices by representation on the work of regional corporate governance round-tables for non-OECD countries. The six key practices relevant across an array of jurisdictions for effective implementation covered the following: ensuring the basis for an effective corporate governance framework, rights of shareholders, equitable treatment of shareholders, role of stakeholders in corporate governance, disclosure and transparency and the responsibility of the board (OECD, 2004).

First, the principles state that the basis for corporate governance framework should be consistent with the rule of law, promote transparent and efficient market and make sure that responsibilities of different supervisory, regulatory and enforcement agencies is segregated. Second, the protection and exercise of shareholder rights should be embodied in the corporate governance framework. Third, the governance framework should ensure that shareholders, including minority and foreign shareholders, are treated equally and also put measures in place to safeguard shareholders whose rights have been violated. Fourth, the corporate governance framework should acknowledge the rights of stakeholders as detailed by law and any other agreements to allow for co-operation for the creation of jobs, wealth and sound enterprises. Fifth, the corporate governance framework should ensure that disclosure is made in areas of the financial position, performance, ownership and governance practices of the company in a timely manner for relevant stakeholders. And lastly, the corporate governance framework should ensure the existence of strategic guidance, mechanisms in place for effective monitoring by the board and to make clear the board accountability to shareholders in particular and to the company. As much as the OECD revised version aimed to strengthen the effective application of corporate governance with the introduction of the need for effective corporate governance framework, the other five principles were replicated from the 1999 OECD principles.

Arguably, the principles described above appear to be of a general nature rather than addressing the specific issues affecting the agency problem. For example, the specific provisions regarding the establishment of board committees as experienced in the UK, US and South Africa as well as duality and the percentage of non-executive directors on the board were not addressed. Notwithstanding the lack of specifics, the purpose of the reform appears to provide a fundamental framework for member and non-member countries to develop their own code. It can also be said that the OECD principles came out of what is experienced in the UK, US and South Africa.

2.4.2 The Commonwealth Association for Corporate Governance

The Commonwealth Association for Corporate Governance (CACG-1999) principles of guidelines placed much emphasis on developing African economies in relation to corporate governance practices. The guidelines covered fifteen principles within which the role and responsibilities of the directors were dominant. These include the following: leadership, board appointments, strategy and values, company performance, compliance, communication, accountability to shareholders, relationships with stakeholders, balance of power, internal procedures, board performance evaluation, management appointments and development, technology, risk management and annual review of future solvency. Fundamentally, and similar to the OECD principles described earlier, the CACG (1999) has also provided a basic framework for the development of corporate governance in the African developing countries. Although, the guidelines appear not to directly address the agency problem, it has influenced most of the developing African countries in their effort of improving corporate governance practices of which Ghana is no exception.

2.5 EFFECTS OF CORPORATE GOVERNANCE REFORMS SINCE 1992 ON FIRMS GOVERNANCE PRACTICES

This section evaluates the progressive corporate governance reforms worldwide since 1992 and their effects on firms' governance practices. The corporate governance practices experienced by firms may best be seen as inter-related from one reform to another. For the purposes of clarity in this section, however, the main effects on board composition; board committees; shareholder rights; financial affairs and auditing; and disclosure practices will each be evaluated in turn. The effects of the reforms will be evaluated in detail for two reasons. Firstly, they contain the relevant corporate governance provisions covered by the UK, US, South Africa and the transnational institutions to which the Ghanaian corporate governance framework will be better understood in chapter three. Secondly, and as has been noted earlier, the various principles and rules represent the main mechanisms to help partly reduce the agency costs.

2.5.1 Board composition effects experienced worldwide

In relation to the board composition, there were some differences regarding board composition in corporate governance regulatory environment between the UK, US, South Africa and transnational institutional reforms. For example, there was no requirement to separate the role of the CEO and the Chairman of the board prior to 1992 in the UK, US and South Africa. However, the Cadbury Report in 1992 recommended the separation of the two roles which was supported by the subsequent governance reports in the UK and South Africa. In this respect, Conyon (1994) documented that 77% of UK firms separated the role of the CEO and the Chairman immediately after the publication of the Cadbury Report in 1992. Rayton and Cheng (2004) also recorded an improvement in the separation of the role in 2002. They noted that 88% of the listed firms in the UK separated the roles of the CEO and the chairman in 2002 compared with 80% in 1998, the evidence

supported by McKnight and Weir (2009). These figures show that listed firms in the UK progressively complied with this provision. Consistent with the UK provision, the King Reports recommended the role of CEO and the chairman to be separated of which compliance levels has improved from 61% in 2002 to 86% at the end of 2006 (Ntim, 2009).   In the US however, the securities laws did not directly address the board composition until the enactment of SOX. In this case, the separation of the role of the CEO and the Chairman was not mandated and therefore encouraged the leadership duality. Notwithstanding the fact that the SOX has no provision regarding leadership duality, Linck *et al* (2009) noted that more firms separated the post of CEO and the chairman post-SOX. In particular, the small firms showed the steepest decrease from 54.8% in 2001 to 45.5% in 2005.

Further, Short and Keasey (1999) indicated that there is a major difference on the operations of the board in the UK and the US. Whereas the board of the UK firms are dominated by executive directors, the US firms are mainly dominated by outside directors (Short and Keasey 1999; Dahya and McConnell 2009). This view is not consistent with Rayton and Cheng (2004) who documented that, on average, the main boards in the UK have contained an in-built majority of non-executive directors. Recently, Cosh *et al* (2008) noted that the proportion of non-executive directors on the board in the UK rose from an average of about one-third in 1980/81 to one-half in 1995/96. This further increased in 2006 where the non-executive directors of the top 100 listed companies' board on average accounted for 60% of the total board. The reform has also affected the board size. Cosh *et al* (2008) reported that the UK board size has declined since 1980s and is more directly related with the debate regarding the appropriate composition of the board prompted by the progressive corporate governance reports. Cosh and Hughes (1997a) documented that the board size and composition for all directors in the UK declined from 14 in 1980/81 to 13 in 1995/96. This figure further reduced to 11 in 2005/06 (Cosh *et al*, 2008). Similarly, the board size of the US decreased by 5.6% from 1989 to 2001 but the average size of the

board increased by 8.4% from 2001 to 2005 after the publication of the SOX. This is a reverse of the entire reduction in board size over the previous twelve years (Linck *et al*, 2009). Effectively, the US board size increased after the reform whereas the UK board size continues to decrease. It is important to note here that the progressive corporate governance reforms have impacted on the composition of the board in the UK, US and other parts of the world.

2.5.2 Board committees effects experienced worldwide

The main committees experienced by listed firms globally include audit, remuneration/compensation and nomination/corporate governance. Nonetheless, the focus for attention has been the audit committee due to the Enron debacle. The evidence in the UK principles-based approach to corporate governance suggests that almost all quoted companies operated a remuneration committee and an audit committee in 2002 (Rayton and Cheng, 2004), the findings supported by Weir and Laing (2000) who found that 95% of the UK listed firms had a remuneration committee in 1995 and Weir *et al* (2002) who reported that 96% of the UK listed firms operated an audit committee in 1996. In contrast, Carcello *et al* (2002) documented that only 85% of their sample of 150 proxy statements filed in spring 2001 have a completely independent audit committee in the US. This means that the rules-based approach to corporate governance does not guarantee full compliance. In South Africa, Ntim (2009) reported that the compliance levels for remuneration (audit) committees improved from 85 % (87%) in 2002 to 95% (95%) at the end of 2006.

With regard to a nomination committee, Rayton and Cheng (2004) reported that the proportion of the UK companies using a nomination committee doubled in 1993 from 39% (reported by Conyon, 1994) to approximately 84% in 2002, the findings supported by McKnight and Weir (2009) who

found 85% large UK listed firms in 2000 to have a formal nomination committee in place. In contrast, only 26% of South African firms had a nomination committee in 2002 but doubled in 2006 to 60% (Ntim, 2009). It is however important to note that compliance with a formal nomination committee has been slow post 1992 compared with other board committees discussed earlier in all jurisdictions.

2.5.3 Shareholder rights effects experienced worldwide

The progressive corporate governance reforms globally were partly meant to restore public confidence which was challenged by the corporate governance failures around the world. In particular, the shareholder rights effects experienced may be well understood by looking into the governance reforms in the UK, US, South Africa and transnational institutions. The reforms seem to have empowered shareholders in the decision making process of a particular firm. This includes the voting rights of the shareholders during the AGM to enable them to re-elect directors and the approval of their remuneration packages. In this respect, the surveys conducted by several institutional investor bodies in the UK have indicated that there has been some increase in voting levels by institutional investors in recent years. For example, The National Association of Pension Fund (NAPF) in 1989 reported that 20% of the UK pension funds showed their intention to vote. This figure increased to 30% three years later with 26% of those surveyed intending to vote on a regular basis. Another survey carried out by Institutional Shareholders Committee (ISC) in 1990 suggests that an average of 20% of shares were voted in the companies they surveyed. This figure also increased to 34% in 1993 but they however noted that most insurance companies were found to be more active than pension funds in this regard.

Nonetheless, Dedman (2002) reported that although institutional investors are using their votes more, the Cadbury Report and the ISC have a long way

to go before their wishes are fully met regarding voting levels. This means that the shareholder rights have not been exercised effectively by those institutions that hold majority of shares (62% in 1993 according to Cosh *et al*, 2008) among the UK firms. However, Choi *et al* (2008) reported that the SOX in the US have had a significant effect on firms with weak shareholder rights than those with strong shareholder rights. They argue that the market anticipated benefits to shareholders from the improved accounting and governance reforms imposed by the SOX, suggesting that the reaction was positive and significant. They however were of the view that strong shareholder rights firms decreased shareholder protection after the passage of SOX. This means that SOX provisions in relation to shareholder rights were under regulated compared with what the strong shareholder rights firms anticipated. Despite gaining recognition and several endorsements from policy makers globally, there is little evidence to suggest that the South African King Reports and the transnational institutional reforms have had any significant impact on shareholder rights. This is not however, to state that the recommendations made by these reforms in relation to shareholder rights have not been effective. Nonetheless, anecdotal evidence suggests that (Armstrong *et al* 2006; Malherbe and Segal, 2003; Mallin, 2007) the King Report is considered as one of the examples of good corporate governance models around the world. These might have gone a long way to influence the formulation, implementation and enforcement of corporate governance practices in the developing countries.

2.5.4 Financial affairs and auditing impacts experienced globally

The progressive corporate governance reform is suggested to have had an impact on the way companies deal with their financial affairs and auditing around the world. The Cadbury Report placed much emphasis on the financial aspects of corporate governance (Dahya *et al*, 2002). Understandably, one of the principal areas dealt with by the Report was the use of creative

accounting practices being used to conceal the calculation of shareholder wealth, which later attracted much attention from the accounting profession in the UK to drive the harmonisation of accounting standards (Whittington, 1993). Evidence also suggests that the Turnbull Report in relation to internal control systems had contributed to the improvement of UK listed firms internal control (Financial Reporting Council, 2005).

In the US however, the aftermath of the Enron debacle prompted the law makers to strengthen the way public firms' financial affairs and auditing should be managed. The SOX establishes PCAOB to regulate accounting professionals who audit financial statements of public firms. The PCAOB was made responsible to oversee and investigate audits and auditors of public firms. The audit functions objectivity and effectiveness have improved subsequent to the Act in the following ways: prohibiting the registered accounting firms from providing a number of non-audit services to the client that they audit; rotating the lead auditor of the registered accounting firms every 5 years; reporting to the audit committee all critical accounting policies and practices used by the client; attesting to and reporting on the assessment made by management of the effectiveness of internal control as part of the audit of financial statements; and auditors are made to keep audit working papers and evidence for not less than 5 years subsequent to the audit of financial statements. Following that, section 302 of the SOX mandated CEOs and CFOs that, each issuer shall prepare a statement to accompany the audit report to certify the appropriateness of the financial statements and disclosures contained in the periodic report, and that those financial statements and disclosures fairly present, in all material respect, the operations and financial condition of the issuer. These measures have helped to improve the financial affairs and auditing of public firms.

Generally, the progressive corporate governance reforms worldwide have had some impact on the firms' governance practices. This is in relation to increased management accountability for financial reporting which has

helped to reduce accounting irregularities and or aggressive financial reporting in recent years. The recommendations made regarding audit committees and their relationship with external auditors, rigorous financial reporting and auditing process might have influenced public firms' financial affairs and auditing globally.

2.5.5 Impacts of governance reforms on disclosure globally

As a result of the progressive corporate governance reforms, public firms are required to provide a minimum amount of information for interested parties. Notably, the requirement is on *comply* or *explain* basis in the UK and South Africa, while this is mandatory in the US. In this case, public firms are able to disclose accounting information, board remuneration, the activities of board committees and the internal control effectiveness, which enhances transparency and also partially reduces the agency problem. In this respect, and right from the Cadbury Committee Report, King Report, and OECD to the SOX, disclosure practices on relevant accounting information, board remuneration, board committees' activities and internal control effectiveness were all recommended. This shows the importance attached to disclosure practices which have gone a long way to impact on the information provided by public firms. Focusing on disclosure of share options in the UK, Forker (1992) noted that the CEO dominance has a negative impact on disclosure practices. This means that not much information will be provided if the combined roles of CEO and the chairman are in the hands of one person. Hence, the separation of the two roles was much emphasised by the corporate governance reforms in the UK and later adopted by subsequent reforms.

Furthermore, SOX overwhelmingly endorsed disclosure practices in the US. For example, section 401, 402 and 403 requires all registrant to provide explanation for their off-balance sheet events, prohibits companies from

making loans to insiders which necessitate electronic filing of disclosures of insider transactions in company stock. Following that, section 404 requires CEO and CFO certifications of disclosure controls to be made in a timely manner together with information and risk relevant to the entity's business. Empirical evidence suggests that the introduction of the SOX in the US is found to have had a significant effect on public firms governance practices (Linck, *et al*, 2009). Disclosure effectiveness underpins transparency which is good for any capital market; hence, it is one of the objectives and the key principles of corporate governance reforms globally.

2.6   CHAPTER SUMMARY

This chapter has focused on the agency theory and the worldwide corporate governance reforms. The main objective has been to give an historical account of the progressive corporate governance reforms and its effect on the world corporate governance landscape. Following the extant literature, it concentrated on corporate governance reforms in selected countries and transnational institutions. The selected countries corporate governance reforms is made up of the UK, US and South Africa which are generally considered as pace setters in both developed and developing countries. The formulation, implementation and enforcement of corporate governance practices in these countries were based on *comply* or *explain* philosophy (UK and South Africa) and the application of rules in the US. However, all these reforms focused on addressing the notorious agency problem in order to safeguard the interest of shareholders.

The transnational institutional corporate governance reforms considered in this chapter include the OECD and the CACG. The recommendations made by these reforms focused on fundamental principles of corporate governance as minimum standards for member countries to develop their own code of best practice for individual country's legal, cultural and regulatory

requirement. Evidence in the governance reforms literature suggests that all the institutions adopted the principles-based approach practised in the UK and South Africa and considered the principles to be a replication of the earlier corporate governance reforms. As a result, the overall effect of the progressive corporate governance reforms experienced since 1992 is quite significant in both the national and international contexts. In this respect, the reforms have impacted on the board composition, board committees, shareholder rights, financial affairs and auditing, and disclosure practices of public firms. More importantly, the reforms have helped in promoting good corporate governance practices, which takes into account the interest of shareholders, with the necessary mechanisms to help partially reduce the agency problem. This is the basis on which other countries have developed their own code of best practices on corporate governance for implementation.

Fundamentally, the chapter identified two major corporate governance reforms within the international context: the *principles-based* and the *rules-based* approaches. It is suggested in the existing literature that the *principles-based* approach refers to the reforms pioneered in the UK, and later adopted by South Africa and the transnational institutions, in which case the *comply* or *explain* philosophy is dominant and is usually not backed by the force of law. In contrast, the *rules-based* approach refers to the regulatory reforms in the US, where the SOX is paramount and does not allow for any flexibility for non-compliance. Nonetheless, and due to the increased globalisation and the integration of the world stock market resulted from cross-listing, corporate governance practices worldwide are progressively converging across different countries.

Overall, one clear achievement of the worldwide governance reforms underpinned by the agency theory is the consensus by the codes with specific governance mechanisms in addressing the agency problem. For example, a majority of the codes considered CEO duality as harmful and recommended

the separation of the two posts. The codes also have considered the important advisory and monitoring roles played by the non-executive directors on the board with particular focus on independent non-executive directors in addressing the agency problem. Given the benefit of board committees in addressing the agency problem, a majority of the codes have recommended the establishment of audit, remuneration and nomination committees to perform their special functions to support the board. In respect of the shareholder rights, a majority of the codes have encouraged shareholders/institutional shareholders to participate in the decision making of their firms during the AGM through voting. Notably, a majority of the codes have also placed much emphasis on the financial affairs and auditing and disclosure practices of which strong recommendations have been provided by the various codes for firms to provide a statement of compliance with corporate governance among others. Given the worldwide governance reforms with the various codes recommendations in addressing the agency problems, the next chapter introduces the development of corporate governance in Ghana where this thesis is based.

CHAPTER THREE

THE DEVELOPMENT OF CORPORATE GOVERNANCE IN GHANA

3.1 INTRODUCTION

This chapter introduces the development of corporate governance in Ghana. Its main objective is to provide a full account and where possible, a review of the Ghanaian corporate governance framework and how it fits into the worldwide corporate governance landscape. In particular, it examines the legal and regulatory environment as well as the Ghanaian Code provisions experienced in Ghana. However, and unlike the UK and the South Africa where the formation of independent committees are dominant for the provision of the code of best practices on corporate governance, the Ghanaian Code was for the first time introduced in 2003 by the Security and Exchange Commission Ghana (SECG). Whereas the UK and the South African codes have been subjected to a series of revisions to date, the Ghanaian Code has not been reviewed. The remainder of the chapter is structured as follows. Section 3.2 presents a comprehensive description of the Ghanaian legal and regulatory environment. Section 3.3 examines the Ghanaian Code on corporate governance. Section 3.4 critiques the Ghanaian corporate governance environment, while section 3.5 provides a summary to the chapter.

3.2 THE GHANAIAN LEGAL AND REGULATORY ENVIRONMENT

This section presents a comprehensive description of the Ghanaian legal and regulatory environment within which companies operate. Specifically, subsection 3.2.1 will look into the Companies Code 1963 (Act 179, henceforth the Companies Code); subsection 3.2.2 will discuss the role of

SECG, while subsection 3.2.3 examines the role of the Ghana Stock Exchange (GSE) in relation to the development of corporate governance in Ghana.

3.2.1 The Ghanaian Companies Code and corporate governance

Recognition of the existence of corporate governance in Ghana dates back to July 1963, when the Companies Code was enacted to govern the formation and operation of Ghanaian companies. Its provisions are largely based on the English Common Law, and notably, similar to the UK Companies Act 1948 (Adda and Consulting, 2006). It is directed and administered by the Attorney General's office and Ministry of Justice through the Registrar General's Department. Focussing on its contribution to the development of corporate governance in Ghana, it has mandated companies to apply the following key mechanisms. First, the Companies Code focuses on the board composition requirements with particular emphasis on the membership of the board. It specifically called for all public companies to have a minimum number of three directors (section 300a) to manage the affairs of a company to the benefit of its shareholders.

The Companies Code also mandated boards in section 190 to appoint a company secretary who may be a body corporate. As will be discussed in section 3.3, the Ghanaian Code also makes provision for the appointment of a company secretary to advise and guide the chairman in undertaking his responsibilities. With regard to CEO duality, section 193 mandates the board from time to time to appoint a Managing Director (MD) to direct and administer the business of a company. However, there is no provision made by the Companies Code regarding the chairmanship of the board which suggests that it does not prohibit the MD to occupy the two positions. Further, the Companies Code placed much emphasis on the appointment of

executive directors (section 192) but failed to make provision for the appointment of non-executive directors to the board.

Second, even though the Companies Code does not mandate Ghanaian companies to establish board committees, it does ask the board to exercise their powers through committees as they think fit (section 138a). It is unclear as to which committee the board should delegate its power to act on their behalf and whether the committees' composition includes board members or not. It also suggested that the determination of the directors' remuneration from time to time should be agreed through an ordinary resolution of the company (see section 194) which implies that there is no specific committee charged with the responsibilities to handle board remuneration. However, section 128 stipulates that a note to the accounts regarding particulars of directors' emoluments and pensions for both existing and past directors is required. To make things clearer and as will be described in section 3.3, the Ghanaian Code makes provision for the establishment of two main committees namely, an audit committee and a remuneration committee who have the delegated authority from the board to perform their assigned functions.

Third, the Companies Code grants shareholders a number of rights and powers to exercise over the companies that they have invested in. For example, sections 149 to 178 mandate companies to hold an annual general meeting (AGM) where the shareholders participate in the decision making process. It noted that such an AGM should take place not earlier than twenty one days following the receipt of the company's audited financial statements, directors' report and auditors report by its members which will subsequently be laid before the AGM for consideration. In this case, the AGM on an annual basis should not be held more than fifteen months between the date of one AGM and the next. This is where the shareholders exercise their right to attend, speak and vote at the AGM (see section 31). Also, section 185 empowers shareholders to remove directors' from office and through

cumulative voting, re-elect the longest serving board members who retire by rotation during the AGM (see sections 298 and 300). And, as will be discussed in section 3.3, the Ghanaian Code also empowers shareholders to exercise their rights during the AGM as noted above.

Finally, the Companies Code in relation to financial affairs and auditing requires that, every company must keep proper books of accounts with subsequent circulation to its members the profit and loss account, balance sheet and reports once at least every calendar year (sections 123 and 124). In this regard, section 131 stipulates that every company's board must give approval to the accounts prior to their publication where a signature of two members on behalf of the board is required before such publication. In addition, the board is required to provide a report of the state of affairs of the company including whether there have been any changes regarding the nature of business of the company or associated companies during the financial year (see section 132). In this respect, all public companies are required to prepare and file to the Registrar General's office an annual return which should include a certified copy of profit and loss, balance sheet, group accounts, directors' report and auditors report sent to the members (sections 122 and 295). Further, section 296 requires public companies to appoint an auditor who is a member of the Institute of Chartered Accountants-Ghana (ICAG). As will be explained in chapter five, each company's annual report will be used as the basis on which corporate governance practices will be benchmarked for this thesis.

3.2.2 The SECG and corporate governance development

Evidence suggests that the Companies Code makes room for additional regulation of companies subject to special regulation (Adda and Consulting, 2006). In this case, the Securities Industry Law 1993 (PNDCL 333) created SECG to supervise the operation of stock exchanges and companies. In May

2000, the SECG was admitted as a full member of the International Organisation of Securities Commission. The SECG primary objective spans from the protection of investors to the maintenance of integrity of the securities market in Ghana. It has an Administrative Hearings Committee established by an amendment to the Securities Industry (Amendment) Act 2000 (Act 590), charged with the responsibilities of law enforcement in relation to securities and the Companies Code. Focusing on the contribution to the development of corporate governance in Ghana, the Securities and Exchange Regulations 2003, LI 1728 have provided a series of corporate governance mechanisms that govern companies in the area of board composition, board committees, financial affairs and auditing and disclosure practices.

Regarding board composition, section 3 of the regulations has indicated qualifications and disqualifications of directors and executive officers that should serve in the office of a particular company. Specifically and similar to the Companies Code provisions discussed earlier, section 3 (1) mandates listed companies to have not less than three directors as its board members. In this respect, a majority of the board members must have recognised academic or professional qualifications or experience in banking, accountancy, economics, business administration, dealing in securities or any other relevant qualifications (SECG Regulations, 2003, section 3 [2]). Consequently, section 4 of the regulations placed much emphasis on the CEO of such companies that, no licence shall be given if the CEO does not qualify up to the requirement outlined in section 3(2) above. Further, section 3 (3a-3e) disqualifies a person to become a director or executive officers if such person has the following: convicted; adjudged bankrupt; misconduct himself in the public office; any breach of law or regulation; and if the person is prohibited to hold such position.

However, section 3 of the regulations fails to provide the maximum number that should constitute the board membership. This failure is a replication of

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the weaknesses of the Companies Code governance framework discussed in subsection 3.2.1 and the GSE Listing Rules that will be examined in subsection 3.2.3. Although the GSE Listing Rules maintained that 50% of the board should be non-executive directors, it does not prescribe the minimum and a maximum number that should constitute the board. As will be described in section 3.3, the Ghanaian Code recognises the minimum number of eight and a maximum number of sixteen to constitute the board.

With respect to the formation of the board committees, section 61 of the regulations mandates all public companies to make available to the Commission with written evidence on the operation and effectiveness of the audit committee. This section of the regulation is important because it is one of the board committees that have oversight responsibilities of listed companies financial affairs and auditing. Arguably, and as explained in chapter two, the worldwide corporate governance development has also considered the establishment of an audit committee as an important governance mechanism. In this case, any person in Ghana who contravenes section 61 of the regulations shall be liable to a fine of 2 million old Ghana cedis for each day that the default subsists (SECG Regulations, 2003, section 62). Although the Companies Code does not recommend this provision, as will be discussed in subsection 3.2.3 and section 3.3, the GSE and the Ghanaian Code also requires audit committees to be established by listed firms.

With regards to financial affairs and auditing, section 54 of the regulations stipulates that every public company must prepare and circulate to the Commission, the GSE, its shareholders and bondholders and the stock exchange on which it is listed prior to the expiration of three months from the close of its financial year, an annual report with the audited financial statements prepared in accordance with the Ghana National Accounting Standards issued by the ICAG. Similarly, and as will be explained in section 3.3, the Ghanaian Code also considers the financial affairs and auditing as

best practices in the development of corporate governance in Ghana. Finally, section 60 of the regulations mandates listed companies to comply with the disclosure requirements of the stock exchange in which they are listed. In this respect, the GSE Listing Rules 42 (2d) and 54 which will be discussed in subsection 3.2.3 is supported by SECG Regulations. As will be discussed in section 3.3, the disclosure provisions in the Ghanaian Code are not consistent with the Companies Code, GSE and SECG requirements. In particular, it requires a statement in the company's annual report to the extent of its compliance with the law and corporate governance practices.

3.2.3 The GSE and corporate governance development

Apart from the Companies Code and the SECG Regulations, the revised GSE's 2006 Listing Rules has played a very substantial role in the regulation of companies and the development of corporate governance in Ghana. Adda and Consulting (2006) noted that the weaknesses of the governance framework of the Companies Code are somewhat dealt with by the GSE Listing Rules. In this regard, the GSE Listing Rules have reinforced, if not all, some of the corporate governance provisions found in the Companies Code and the SECG Regulations. The main aim of the GSE is to provide a fair, orderly and efficient market for trading of securities issued (GSE Listing Rules, 2006, intro. Para). In particular, the rules for a potential listing and existing listed companies are detailed in Part I to Part X with the various sections dealing with a range of issues regarding the sponsorship for listing new applicants and the authority of the GSE in relation to ownership structure. The focus for attention in this subsection is the contribution that is being made by GSE in the development of corporate governance in Ghana. In this regard, the Listing Rules placed much emphasis on the following corporate governance mechanisms: board composition; board committees; shareholder rights; and disclosure practices among potential listing and existing listed firms.

In relation to the board composition, the GSE Listing Rules have a requirement for a company seeking admission to the official list as follows. It is expected that the character and integrity of the directors' and management of a new applicant is considered to be of high standard. More importantly, the board should be composed of at least 50% non-executive directors to which 2 or 25% of the total board shall be independent (Revised GSE Listing Rules, 2006, rule 11, 1-3). This listing requirement meets international best practice in relation to the inclusion of non-executive directors on the board. However, it did not state the minimum and a maximum number that shall constitute a particular company's board membership as in the case of the UK and South African codes. Beside, the requirement of the 50% non-executive directors is not consistent with the provisions made by the Companies Code and the SECG Regulation, where only the minimum number of three is provided to constitute the board. As will be described in section 3.3 and consistent with what is experienced in the UK and South Africa, the Ghanaian Code only called for the majority of the board to be non-executive directors without stating the exact proportion that should constitute non-executive directors. In this respect, failure to comply with rule 11 regarding the quality of management as indicated above can lead to the suspension of listing and compulsory de-listing. This confirms the assertion that listing on the GSE further increases the chances of a company strengthening its corporate governance practices (Adda and Consulting, 2006).

With regard to the establishment and function of board committees, the GSE Listing Rules do not make mention of such committees but the Guidelines and steps for listing on the GSE states that a written evidence of the existence, operation and effectiveness of audit committee of a particular company must be submitted as one of the listing requirements (GSE Listing Regulation 1990, LI 1509). It is therefore expected that companies seeking a listing on the GSE must prove the establishment, operation and effectiveness

of an audit committee of which the membership should be comprised of non-executive directors. Although the number of the membership is not stated in the guidelines, its function should include the oversight for the appointment and remuneration of statutory auditors; review and evaluation of internal control system; review of audited accounts; review of internal audit procedures and effectiveness; and the appraisal of the general conduct of the business of the company. It is important to state here that the requirement of the establishment of an audit committee is similar to what is experienced globally. It is also worth noting that the GSE guidelines regarding the establishment of an audit committee is consistent with the provisions in SECG Regulations discussed in subsection 3.2.2 and the Ghanaian Code that will be discussed in section 3.3.

However, there are some inconsistencies regarding the membership of the audit committee. While the GSE guidelines called for the membership to be solely non-executive directors, the SECG Regulations failed to make provision for the membership requirement. In the same vein, the Ghanaian Code (see section 3.3) only recommended that a majority of the audit committee members be non-executive directors. Also, the GSE Listing Rules in line with the Companies Code and SECG Regulations failed to mandate companies for the establishment of a remuneration committee and a nomination committee as practised globally (e.g. UK, US and South Africa). Nonetheless, evidence suggests that the GSE upholds good corporate governance when it protested against the violation of the Companies Code regarding the action taken by the then Ghana government, a controlling shareholder, to replace the MD and the General Manager of a listed company known as the Produce Buying Company without acting through the appropriate governing board (Business and Financial Times, Jan 21-27 2002, cited in Prempeh, 2002). The action taken by the GSE adds to the debate of the importance of the establishment of a nomination committee to oversee the selection and the appointment process to replace a member of the board.

The GSE Listing Rules placed much emphasis on the shareholder rights as enshrined in the Companies Code. In this respect, rule 36a mandates shareholders to re-elect any director due for re-election following an AGM of the company. The GSE also encourages immediate announcement of any meeting at least twenty one days before such meeting is held or such shorter notice period permitted by the company's regulations specifying the place, date and hour of the meeting (GSE Listing Rules, 2006, rule 40c). According to the Report on the Observance of Standards and Codes (ROSC), a corporate governance country assessment completed in May 2005 by the World Bank, the shareholder rights in Ghana related to AGM was 75% largely observed compared with ROSC average of 64% (World Bank, 2005). The report also suggested that the basic shareholder rights are well-observed in Ghana. In relation to directors share ownership and related party transactions, rule 42 (2a, 2b) requires that listed companies are to provide information in its annual report at the end of each financial year on the holding of each director share ownership and the particulars of material transactions involving each director and the company.

Disclosure requirements in Ghana are high on the agenda of the GSE Listing Rules. For example, rule 42 (2d) encourages disclosure in the company's annual report the name of the directors, company secretary, solicitors, external auditors and share registrars, the address and telephone number of the company's registered office and the registrar's address. Further, rule 54 requires immediate disclosure of material information in relation to the affairs or events of the company, which may be considered relevant for decision making by investors. However, the disclosure standards in Ghana are considered partially-observed at 50% compared to the ROSC average of 74% (World Bank, 2005). Recently, Tsamenyi *et al* (2007) investigated disclosure practices and concluded that disclosure levels in Ghana are generally low. The authors found that the average of 52% disclosure and transparency score is below the suggested 60%. This evidence is consistent with the World Bank Country Assessment Report discussed earlier.

3.3   THE GHANAIAN CODE ON CORPORATE GOVERNANCE

Given the inconsistencies and weaknesses found in the rules and regulations of the Companies Code, SECG regulations and the GSE Listing Rules regarding corporate governance practices in Ghana, the Ghanaian Code was the first attempt to make official corporate governance guidelines on best practices not backed by the force of law. The Ghanaian companies were encouraged to comply with the Ghanaian Code introduced in 2003. As noted earlier, most of the corporate governance provisions were already being carried out in Ghana based on the existing legal and regulatory framework. However, Adda and Consulting (2006) reported that the legal framework for registration of companies in Ghana has not kept up with the international best practices. They noted that the Companies Code has seen no major changes since its introduction. Also, and contrary to the worldwide corporate governance reforms, it does not provide for the appointment of non-executive directors, CEO duality is not prohibited and there is no requirement for the establishment of board committees. Again, and apart from the 50% on non-executive directors' inclusion of the board mandated by the GSE Listing Rules and the establishment of audit committee proposed by both SECG and GSE, the prohibition of the CEO duality and the establishment of a remuneration committee and a nomination committee were not recommended by both regulators. In this respect, Ghana was lagging behind the worldwide corporate governance reforms discussed in chapter two, and in particular the reforms in the UK and South Africa which might have prompted the introduction of the Ghanaian Code in 2003.

Unlike the UK, South Africa and the Transnational Institutions who relied on the formation of committees to promote the highest standard of corporate governance in their various jurisdictions, the Ghanaian Code was introduced by SECG in 2003, with the principles applying to all corporate bodies approved or licensed as stock exchanges, dealers and investment advisers. In particular, the Code charged companies to adapt to their specific

circumstances provided the spirit of the principles underlying the practices is maintained. This is similar to what the Cadbury Report and King Report first recommended in the UK and South Africa. Consistent with the UK and the South African approach to corporate governance associated with *comply* or *explain* philosophy, the Ghanaian Code also mandated companies to provide an explanation if any of the principles were not followed. In this respect, shareholders may have the opportunity to either accept or reject the explanation given for not complying with some of the Ghanaian Code provisions. This means that board may be held accountable for ineffective application of the principles enshrined in the Ghanaian Code.

3.3.1 The Ghanaian Code provisions imposed on companies

In order to ensure board accountability and reporting, the Ghanaian Code called for effective management of companies regarding shareholder protection and value maximization, the view supported by the agency theory. Consequently, it recommended that the primary responsibility of the board of a particular company is the prevalence of good corporate governance. This subsection examines corporate governance provisions imposed on companies by the Ghanaian code. Specifically, the previsions are divided into five main parts, especially those related to the board composition, board committees, shareholder rights, financial affairs and auditing and disclosure practices, as these are the focus of this thesis.

3.3.1.1   Board composition

Consistent with the worldwide corporate governance reforms and in particular what is experienced in the UK and South Africa, the Ghanaian Code recognised the crucial role that the company chairman plays in securing good corporate governance. As such, and to avoid power concentration, it is

suggested that the positions of the CEO and chairman of the Ghanaian companies must be separated, with particular emphasis on listed companies unless there is a specific reason not to do so. In this regard, there should be an explanation to shareholders with the reason why the two positions are held by one person. However, the Ghanaian Code recommended only for the role to be separated but not expressly requiring the chairman to be a non-executive director as practised in the UK and South Africa. Also, and as will be discussed in chapter five, the developed *GCGI* determines whether the CEO and the chairman role is separated or not. In addition to the separation of the roles of the CEO and the chairman, the Ghanaian Code also recommended for the size of the board to be representational in order to promote effective and responsible management. It argued that the membership of the board should be between a minimum of eight and a maximum of sixteen members and maintained that the procedures for appointment to the board should be formal and transparent. However, the minimum of eight and the maximum of sixteen board membership proposed are all even numbers which could create potential voting problems at the board meetings if the board membership is not based on odd numbers. Also, and as will be explained in chapter five, the developed *GCGI* determines whether the board size requirement is met or not.

Consistent with the corporate governance provisions experienced around the world, the Ghanaian Code called for a balance of executive and non-executive directors on the board, with particular emphasis on independent non-executive directors to represent at least one third of the total membership of the board and at any event not less than two. In this case, and similar to the UK and South African codes, the Ghanaian Code definition of *independent* non-executive director is if the person: is not a substantial shareholder of the company; has not been previously employed by the company in an executive position for the previous three years; is not a professional adviser or consultant to the company; and has no business link or any other relationship with the company. Focusing on the selection and

appointment of the non-executive directors, it recommended that the appointment should ordinarily be a matter of the board as a whole. In this regard, the Ghanaian Code did not recommend the establishment of a nomination committee. This is not consistent with the corporate governance provisions practised worldwide. Also, and as will be described in chapter five, the developed *GCGI* determines whether the independent non-executive directors requirement is met or not.

With regards to the significant role played by the finance director, company secretary and the regular board meetings held in the case of listed companies, the Ghanaian Code called for a specific director on the board to be made responsible for the finance function of the company. It also recommended that a qualified company secretary should be appointed as required under the Company Code, charged with the responsibilities as an adviser and guide to the chairman of the board. As such, the board should meet regularly and in the case of listed companies, the meeting should take place at least six times a year. Also, and as will be examined in chapter five, the developed *GCGI* determines whether these requirements are met or not.

3.3.1.2   Board committees

Similar to the worldwide corporate governance development, the Ghanaian Code recommended for the establishment of two separate committees in order to improve the functioning and responsibilities of the board as follows: the audit committee and a remuneration committee. Of these, the audit committee is required to be constituted by at least three directors to whom the majority should be non-executive directors. Specifically, it suggested that the membership of the audit committee should include directors with adequate financial knowledge and the chairman of the committee should be a non-executive director. The Ghanaian Code also requested the provision of information on the activities of the audit committee in the company's annual

report. With regards to the remuneration committee, although the Ghanaian Code required the membership to be composed of a majority of non-executive directors, no guidance is given regarding the chairmanship and the minimum number of directors that should constitute the remuneration committee. Like the audit committee, information on its membership and the aggregate amount of compensation paid to the directors must be provided in the company's annual report. This should include whether directors receive part of their remuneration in stock or stock options. Nonetheless, the board committees differ from the worldwide corporate governance reforms in the following areas: there is no requirement for the chairman of the remuneration committee to be an independent non-executive director as in the case of the UK and South Africa; and the Ghanaian Code also failed to recommend for the establishment of a nomination committee which has been considered as best practice in the UK and South Africa. For the purposes of this thesis, and as will be described in chapter five, the developed *GCGI* determines whether audit and remuneration committees requirements are met or not.

3.3.1.3 Shareholder rights

The Ghanaian Code recommended a number of provisions in order to improve the relationship between shareholders and managers. Consistent with the agency theory being the theoretical framework for the worldwide corporate governance reforms, the Ghanaian Code called on the board to try and focus on the shareholder value maximization. In order to give shareholders the greater influence in the affairs of a particular company, the Ghanaian Code requested a company to: provide adequate notice to shareholders prior to its AGM; allow shareholders to approve its board members re-election at the AGM; facilitate voting by proxy as well as the opportunity for shareholders to vote by mail; provide information in its annual report on a related party transaction; and to provide information on

the directors share ownership in its annual report. Where appropriate, and as will be explained in chapter five, the developed *GCGI* determines whether these requirements are met or not.

3.3.1.4   Financial affairs and auditing

The Ghanaian Code called for several recommendations regarding financial affairs and auditing for companies to practise. In particular, it suggested that the Ghanaian companies should prepare their financial statements in accordance with the Ghana National Accounting Standards and other Accounting Standards issued by the ICAG. In this regard, it mandated directors to produce the company's yearly financial statements at the legally required date and audited in accordance with the Generally Accepted Standards of Auditing required by ICAG. The external auditor should belong to one of the auditing firms recognised by ICAG, and in this case, the auditor is required to specify in his report if the financial statements audited have been prepared in line with the Ghana National Accounting Standards. Moreover, the board should provide information in the company's annual report the existence of appropriate systems to monitor risk and to safeguard the company's assets by maintaining adequate records. As such, the Ghanaian Code has made clear for the board to provide a balanced and understandable assessment of the company's financial and operating results in its annual report. It also called for information on the fees paid to the external auditors for audit and non-audit related work to be provided in the company's annual report. For the purposes of analysis, and as will be described in chapter five, the developed *GCGI* determines whether these requirements are met or not.

3.3.1.5   Disclosure practices

The Ghanaian Code has made it clear that the disclosure requirements expected from companies are supplementary to those mandated by law or regulation or under any other sections discussed in subsection 3.3.1. With reference to the disclosures, the Ghanaian Code suggested that companies should disclose in their annual reports the following six main statements of compliance. First, it mandated boards to include the company's current and foreseeable material risk in its annual report. Second, the board must disclose in the company's annual report a statement of accepting responsibility of the preparation of its financial statements. Third, the board must disclose in the company's annual report the adequacy of its internal control measures. Fourth, the board must disclose in the company's annual report a statement indicating the degree of compliance with the law. Fifth, and similar to what is practised in the UK and South Africa, the board must disclose in the company's annual report a statement on the extent of compliance with corporate governance practices. And finally, the board must disclose in the company's annual report a statement of being a going concern for each financial year. Also, and as will be examined in chapter five, the developed *GCGI* determines whether companies are compliant to these disclosure requirements or not.

3.4   CRITIQUE OF THE GHANAIAN CORPORATE GOVERNANCE FRAMEWORK

A useful critique of the Ghanaian Code provisions is a comparison with the code of best practices on corporate governance that were in place before the introduction of the Ghanaian Code. In this case, the 1998 Combined Code on corporate governance applicable to the UK listed firms and the South Africa 1994 King I Report are used for the evaluation. It is however important to note that the UK and South Africa corporate governance reforms have taken approximately 20 years to establish the code of best practices compared to

the Ghanaian counterpart which is almost half way (approximately 10 years) since the introduction of the Ghanaian Code. However, the status quo of compliance or regulation is either voluntary or self-regulatory in all the jurisdictions. In relation to board composition, both the Combined Code and the King I are practised under unitary board structure as in the case of the Ghanaian Code. But, whereas the UK Combined Code recommended at least three non-executive directors, the South African King I recommended at least two non-executive directors compared with the Ghanaian Code that called for a balance of executive and non-executive directors on the board and not a specific number. Arguably, major differences are that the Ghanaian Code requires one third of the board to be independent non-executive directors and at any event not less than two compared with the UK combined Code advocating at least two independent non-executive directors. In this case, the South African King I Report did not specify any number for independent non-executive directors who should be members of the board. However, the revised King II and III Reports addressed this problem and noted that majority of non-executive directors should be independent.

Interestingly, and because of its importance, all the three codes agreed on the split of chairman and CEO posts but the Ghanaian Code did not expressly require the chairman to be a non-executive director as in the case of the UK and South Africa. With regard to board meetings, the UK Combined Code asks for frequent meetings to be held, while the South African King I provides for at least once every quarter compared to at least six times a year for the Ghanaian listed firms. It is important to emphasise that the provision of a fixed number of meetings may be unrealistic for firms to adopt. This is because the frequency of meetings to be held in each financial year should be determined by a particular firm's strategic direction and its operational environment. Arguably, the UK Combined Code provision regarding the board to have frequent meetings should be supported rather than having a fixed number of meetings provided by the South African King Report I and the Ghanaian Code.

Notably, the UK Combined Code has provided for three committees: audit, remuneration and a nomination committee compared to the South African King I and the Ghanaian Code with only audit and remuneration committees. That notwithstanding, and as noted earlier, the King II and III in the later revisions provided for a nomination committee for South African listed firms. In essence, the Ghanaian Code has not been reviewed to reflect the establishment of a nomination committee and is considered in this thesis as one of the weaknesses of the Ghanaian Code. This is because the appointment of new members to serve on the board should be considered as very important and the existence of a nomination committee could help to recruit directors with relevant skills and knowledge but not through established relationships with other directors or major shareholders. This may help Ghanaian firms to have more independent non-executive directors on the board to provide their effective advisory role.

With regard to compliance and enforcement, both the UK Combined Code and the South African King I Report make use of the board, institutional shareholders/shareholders rights and auditors to that effect. In Ghana, there is no emphasis on the institutional shareholders and auditors other than the provisions on the board and the shareholder rights. This does not allow the institutional shareholders to play a major role in terms of corporate governance development. As a result, if the institutional shareholders are not involved in the broader corporate governance process through communication, voting and the evaluation of compliance of the Ghanaian Code provisions, then the objective of the effective corporate governance adoption might not be achieved. Arguably, all the three codes of best practices agreed on the provisions regarding financial affairs and auditing. In this respect, the audit committee takes the oversight responsibilities on financial affairs and auditing in all the jurisdictions including the appointment of external auditors.

However, major differences are that the preparation of financial statements is guided by the Generally Accepted Accounting Principles (GAAP) in the case of the UK Combined Code and South African King I Report compared with the Ghanaian Code focus on the Ghana Accounting Standards and other standards. With the emergence of the International Financial Reporting Standards (IFRS), the subsequent reports in the UK and South Africa to date have recommended the adoption of IFRS. To date, this has not been recommended by the Ghanaian Code even though the ICAG in 2007 asked Ghanaian firms to adopt the IFRS for the preparation of their financial statements. This also suggests that the revision of the Ghanaian Code is imminent and must be considered by the regulatory authorities in Ghana.

Fundamentally, the evidence from the provisions made by the Ghanaian Code appears to suggest that there has been a major contribution to the development of good corporate governance in Ghana. Specifically, listed companies on the GSE are to comply with the Ghanaian Code provisions in respect of board composition; board committees; shareholder rights; financial affairs and auditing; and disclosure practices. As indicated earlier, the Ghanaian Code, however, failed to recommend for the establishment of a nomination committee. As such, this thesis extends the analysis on this issue in chapter five, where the questionnaire survey includes a question regarding the company directors preparedness to comply with further corporate governance practices and in particular a nomination committee. It will also help ascertain and understand from the directors whether there is the need to review the Ghanaian Code by an independent committee as practised in the UK and South Africa. Nevertheless, the history and scope of corporate governance practices in Ghana between pre 2003 and post 2003 would have provided flexible choices regarding Ghanaian listed firms' corporate governance practices. Arguably, prior research (see section 2.5 of chapter two) have found some impact of corporate governance reforms worldwide on listed firms' governance practices (Conyon, 1994; Dahya *et al*, 2002; Rayton and Cheng, 2004; Cosh *et al*, 2008; Choi *et al*, 2008; Linck *et al*, 2009;

Ntim, 2009). However, the degree of compliance with the Ghanaian Code provisions imposed on listed firms has not been studied to date, and therefore the first relevant hypothesis in this thesis is operationalised in the following form:

Ho$_1$: **There is significant improvement in the degree of compliance with corporate governance practices by listed firms during pre 2003 and post 2003 introduction of the Ghanaian Code.**

3.5 CHAPTER SUMMARY

This chapter has attempted to focus on the development of corporate governance in Ghana. Its main objective has been to provide a full account of the Ghanaian corporate governance framework. It examined the legal and regulatory environment within which the Ghanaian companies operate. This is made up of the Companies Code, SECG Regulations and the GSE Listing Rules. The formulation, implementation and enforcement of the Ghanaian Code on corporate governance rest on the SECG. However, and until the introduction of the Ghanaian Code, there were some inconsistencies and weaknesses in the regulation of companies in Ghana regarding corporate governance practices. It became known from the review that the corporate governance development has been hampered by the weaknesses of the Companies Code governance framework which is fundamental to corporate governance practices in Ghana.

Further, the corporate governance requirements enshrined in the Companies Code, SECG Regulation and the GSE Listing Rules were suggested to fall short with what is experienced globally. By contrast, the publication of the Ghanaian Code provided a consistent approach by which companies are governed. Although its application is not backed by the force of law, companies listed on the GSE are to comply or provide explanation for non-compliance. The review provided, where applicable, the provisions imposed

on companies and assessed whether it is consistent with what is experienced worldwide. It was revealed that, the Ghanaian Code, similar to the Companies Code, SECG Regulations and the GSE Listing Rules failed to make provision for the establishment of a nomination committee. This particular shortfall is experienced in the UK and South Africa and should have been provided for in the corporate governance development in Ghana in order to help appoint qualified board members who are not politically chosen for effective decision making.

The next chapter reviews prior empirical studies on the relationship between corporate governance and firm performance. Specifically, the studies on the specific governance mechanisms and the governance index impact on firm performance, followed by the directors' opinions on corporate governance and firm performance will be reviewed in both developed and developing countries in order to help develop additional hypotheses in this thesis for testing.

CHAPTER FOUR
PRIOR STUDIES ON GOVERNANCE-PERFORMANCE RELATIONSHIP

4.1   INTRODUCTION

This chapter reviews the governance-performance relationship that has attracted empirical attention following the progressive worldwide corporate governance reforms. In this respect, an important empirical question is whether the adoption of the specific governance mechanisms or a set of these mechanisms developed into a governance index is beneficial to firm performance. Similarly, do the directors who are responsible for the adoption of good corporate governance in their firms value these provisions as beneficial to their firm performance? In this review, the thesis focuses on three aspects of governance[10] implications on firm performance and will be mainly limited to studies undertaken since the 1990s. This is in line with the period to which the worldwide corporate governance reforms started and therefore its impact on firm performance needs to be evaluated from the existing literature. The chapter proceeds as follows. Section 4.2 presents studies on the relationship between the specific governance mechanisms and firm performance. Section 4.3 reviews studies on the relationship between governance index and firm performance. Section 4.4 discusses studies on the directors' opinions on corporate governance and firm performance. Section 4.5 provides critical observation of the governance-performance literature and potential contributions, while section 4.6 summarises the chapter.

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[10] These include the adoption of the specific governance mechanisms, a set of governance mechanisms developed into governance index and the directors' opinions on corporate governance and firm performance.

4.2 THE SPECIFIC GOVERNANCE MECHANISMS-PERFORMANCE RELATIONSHIP STUDIES

This section presents studies on the relationship between the specific governance mechanisms and firm performance. Of particular interest to this thesis is the CEO duality, board size, proportion of non-executive directors and board committees as these mechanisms among other provisions are recommended by the Ghanaian Code discussed in section 3.3 of chapter three. In particular, most prior studies examined the relationship between these mechanisms and firm performances have used performance measures such as accounting-based measures (ROA, ROE and ROI), market-based measures (Tobin's Q, Market Returns, and Share Returns) or both. Arguably, there is a considerable specific governance mechanisms-performance relationship research mainly undertaken by researchers since the worldwide corporate governance reforms with particular focus on non-African countries but relatively few studies in Africa. Tables 4-1 to 4-4 summarises studies on the specific governance-performance relationship separated into CEO duality, board size, proportion of non-executive directors and board committees with the key studies in Ghana presented in subsections 4.2.1; 4.2.2; 4.2.3; and 4.2.4 respectively. These specific governance mechanisms-performance relationship studies are reviewed in order to develop hypotheses two to five.

4.2.1 Empirical studies on CEO duality-performance relationship

The post of the CEO is quite critical for the survival of any company as well as the chairman of the board. But whether to allow the CEO to combine the role of the chairman or not is a question for debate among researchers, regulators and law makers globally. In particular, the US governance reforms encourage CEO duality, whereas in the UK, South Africa and Ghana where this thesis is based, the CEO post is advocated by the code of best practices to be separated from that of the chairman of the board. In this respect, does the separation work better than the combined roles in relation to benefiting

firm performance? The agency theory position is that CEO duality is bad because having the CEO as the Chairman of the board to evaluate his/her own work defeats the objective of having the board. This is because the CEO may use his/her power as a board Chairman to select directors who are not expected to challenge his/her actions (Westphal and Zajac, 1995). In this respect, the board will be incapable to effectively monitor and evaluate the CEO's actions because the CEO duality 'signals the absence of separation of decision management and decision control' (Fama and Jensen, 1983a, p.314). This suggests that a board controlled by the CEO is expected to lack independence which may lead to more agency problems, and eventually, poor firm performance (Rechner and Dalton, 1991; Pi and Timme, 1993).

As can be seen from Tables 4-1a-c, the evidence of whether CEO duality is better than separating the two roles in enhancing firm performance is mixed. First, and as in line with the agency theory, many prior studies have found a negative impact from CEO duality on firm performance (Rechner and Dalton, 1991; Pi and Timme, 1993; Dahya *et al*, 1996; Worrell *et al*, 1997; Faccio and Lasfer, 1999; Kiel and Nicolson, 2003; Bozec, 2005; Haniffa and Hudaib, 2006; Ujunwa; 2012). Using different firm performance measures, such as ROA, ROE, and Tobin's Q, the results of these studies indicated a negative association between the CEO duality and firm performance. Those researchers argued that a combined leadership structure may lead to the implementation of the decisions that favours the CEO's personal objectives at the expense of shareholders and therefore poor performance.

In contrast, other studies have found a positive association between CEO duality and firm performance (Donaldson and Davis, 1991; Brickley *et al*, 1997; Boyd *et al*, 1997; O'Sullivan and Wong, 1999; Coles *et al*, 2001; Buckland, 2001; Peng *et al*, 2007; Dey *et al*, 2011; Guillet *et al*, 2012). Using various firm performance measures such as ROA, ROE and Tobin's Q, these studies reported a positive impact from CEO duality on firm performance. In particular, Dey *et al* (2011) document that firms that split the CEO and Chairman roles due to investor pressure have significantly lower

announcement returns and subsequent performance, and lower contributions of investments to shareholder wealth. In this respect, the restrictive assumptions of the agency theory of the CEOs being inherently opportunistic (Boyd, 1995) have been questioned by Donaldson and Davis (1991) who suggested an alternative model that defines CEOs as individuals who are not opportunistic shirkers but mainly driven by intrinsic motivation for achievement. This is particularly important because the evidence of CEO duality having a positive impact on firm performance reported by these researchers need to be interpreted with care as they did not control for agency control mechanisms. For example, Brickley *et al* (1997) failed to control for firm characteristics that generate conflict of interest between shareholders and managers.

A third group of studies have found no significant association between CEO duality and firm performance (Daily and Dalton, 1993; Baliga *et al*, 1996; Vafeas and Theodorou, 1998; Dalton *et al*, 1998; Weir and Laing, 2000; Weir *et al*, 2002; Dulewicz and Herbert, 2004; Elsayed, 2007; Chen *et al*, 2008; Mashayekhi and Bazaz, 2008). In particular, Chen *et al* (2008) recently re-examined the association between the CEO duality and firm performance by controlling for firm characteristics such as ownership structure, CEO compensation and agency costs. Although they reported an increased number of firms changing from dual to non-dual, their findings do not show a significant association between CEO duality and firm performance nor improvement in firm performance after change in leadership structure. They argued that the insignificance association between CEO duality and firm performance is due to the possibility that CEO duality is endogenously and optimally determined given the firm characteristics and ownership structure.

Focusing on Ghana where this thesis is based, prior studies examining the impact of CEO duality on firm performance have also found mixed results between the two. For example, Kyereboah-Coleman and Biekpe (2006a) are the first researchers who reported a negative association between duality and firm performance among Ghanaian listed firms. But, using listed and

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non-listed Banks, Kyereboah-Coleman and Biekpe (2006b) inconclusively reported a negative association between duality and firm performance for the overall sample but found a positive association between the two for listed banks. The latter evidence is consistent with the work of Abor and Biekpe (2007) who also reported a positive association between duality and firm performance among Ghanaian Small Medium Enterprises (SMEs). However, and consistent with the agency theory, the Ghanaian Code does recommend the separation of the roles as best practice. This may be seen to be more effective in terms of enhancing firm performance and also to limit the power of the CEO of monitoring the monitors. Arguably, prior CEO duality-performance relationship evidence among listed firms in Ghana is limited compared to the general literature. Given that no research to date has examined the impact of the Ghanaian Code recommendation of roles separation on firm performance, the second relevant hypothesis is operationalised in the following form:

Ho_2:   The separation of the roles of CEO and the chairman should lead to higher firm performance.

Although four studies reviewed in the US found CEO duality to significantly have a positive impact on firm performance, the majority of the studies in the UK and other countries supported the agency theory with evidence of a negative or no relationship between the two as shown in Table 4-1a-c. This may illustrate why duality is encouraged in the US compared with regulators in the UK and other countries who discourage duality. Given that firms consider the costs and benefits of different leadership structure because of their specific characteristics (Faleye, 2007), the observed sample of firms that have chosen one type of leadership structure over the other are not random, and therefore the OLS estimates become inconsistent and biased (Chen *et al*, 2008). In this thesis, a distinction will be made between pooled OLS and the alternative random-effects and fixed-effects models to control for unobservable factors, which may affect CEO duality-performance relationship.

Table 4-1a: Empirical research on the relationship between CEO duality and firm performance in the US

Author (Year)	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between CEO duality and firm performance				
Donaldson & Davis (1991)	1985-1987	321 firms in 1988 Business Week's	ROE	CEO Duality is significant and positively associated with firm performance. i.e. Firms with the CEO post combined with the chairman outperform firms with the two post separated
Brickley *et al* (1997)	1984-1991	661 Forbes CEO surveyed firms	Industry-adjusted return on capital Stock Returns	Found significant positive relationship between CEO duality and corporate performance. i.e. the cost of separation is higher than the benefits for most large firms.
Coles *et al* (2001)	1984-1988	144 large firms	Economic Value-added, Market Value-added	CEO duality is significant positive associated with firm performance
Dey *et al* (2011)	2001-2009	760 listed firms	Abnormal market return	Split between the two post have significant lower announcement returns & subsequent performance, and low contributions to investments to shareholder wealth
Guillet *et al* (2012)	1992-2008	351 restaurant firms	Q-ratio ROA	The results show a positive effect of CEO duality on firm performance
Empirical research showing negative relationship between CEO duality and firm performance				
Rechner & Dalton (1991)	1978-1983	141 firms in Fortune 500	ROE, ROI, Profit Margin	CEO duality is negatively associated with firm performance. i.e. Independent CEO firms consistently outperform those with CEO duality
Pi and & Timme (1993)	1987-1990	112 listed banks	ROA, Cost Efficiency (EFF)	CEO Duality has negative interaction with firm performance.
Worrell *et al* (1997)	1972-1990	438 firms in 1990 Business week	Cumulative abnormal returns	CEO duality is significant and negatively associated with firm performance
Empirical research showing no relationship between CEO duality and firm performance				
Daily & Dalton (1993)	Not given in the study	186 small listed corporations	ROA	CEO duality has no impact on firm performance
Baliga *et al* (1996)	1980-1991	375 Fortunes 500 companies	Market Value Added (MVA), ROA, ROE	CEO Duality has insignificant effect on firm performance. i.e. No evidence to suggest that duality affects firm performance
Chen *et al* (2008)	1999-2003	5154 firm year observation	Tobin's Q, ROA, ROE	The results do not show any significant relation between CEO duality and firm performance nor improvement in firm performance after a change in leadership structure

Table 4-1b: Empirical research on the relationship between CEO duality and firm performance in the UK

Author (Year)	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between CEO duality and firm performance				
O'Sullivan & Wong (1999)	1989-1993	116 firms	Market-to-book ratio, abnormal returns, ROCE	Separating the roles of the CEO and the Chairman is more common in the underperforming UK firms which become hostile targets than those with duality status
Buckland (2001)	1990-1994	378 1990s IPOs	Average annual actual returns, average annual abnormal returns, average annual growth rate	More strongly, the findings suggest that those entrants with CEO duality perform significantly better, on average, than those with the recommended role separation.
Empirical research showing negative relationship between CEO duality and firm performance				
Dahya *et al* (1996)	1989-1992	76 listed firms	Average abnormal stock & market returns	The market responds favourably to the split of the two roles and unfavourably when one person occupies the two roles.
Faccio & Lasfer (1999)	1996-1997	1650 Listed Companies	Q ratio, ROE, ROA, P/E	CEO Duality has negative effect on firm performance.
Empirical research showing no relationship between CEO duality and firm performance				
Vafeas & Theodorou (1998)	1994	250 Public traded firms	Market-to-book ratio, operating performance	Found insignificant relationship between CEO duality/leadership structure and firm performance
Weir and Laing (2000)	1992 & 1995 Pre & Post	200 listed companies for each year	ROA, RAW	Separating the role has no impact for both Pre & Post Cadbury recommendations on ROA. This means that those companies that separated the role do not outperform those with the combined post
Weir *et al* (2002)	1994-1996	311 listed companies	Q Ratio	The absence of duality has no significant impact on firm performance
Dulewicz & Herbert (2004)	1997-2000	75-80 listed firms	CFROTA, Sales turnover	Separating or not separating the post has no impact on firm performance

Table 4-1c: Empirical research on CEO duality-performance relationship in other countries

Author (Year)	Country of study	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between CEO duality and firm performance					
Boyd *et al* (1997)	Belgium, France, Italy, Spain, SWISS & UK	1991	2097 firms	ROI	CEO duality is significant and positively associated with firm performance
Peng *et al* (2007)	China	1992-1996	403 public listed firms	ROA, Sales	CEO duality is positively related with firm performance
Empirical research showing negative relationship between CEO duality and firm performance					
Kiel & Nicholson (2003)	Australia	1996	348 listed companies	Tobin's Q, ROA	CEO duality is significant and negatively associated with Tobin's Q. But has no relationship with ROA
Bozec (2005)	Canada	1976-2000	25 SOE	ROS, ROA, Sales Efficiency, NIE, Asset Turnover	A negative relation is found between CEO duality and ROA. However, it has no impact on ROS, sales efficiency, NIE and asset turnover.
Haniffa & Hudaib (2006)	Malaysia	1996-2000	347 listed companies	Tobin's Q ROA	CEO duality is significant and negatively associated with ROA but statistically insignificant relationship between CEO duality and Tobin's Q.
Kajola (2008)	Nigeria	2000-2006	140 firm year observation	ROE, Profit margin	CEO status (separated) has positive and significant effect on firm performance. In other words, CEO duality has negative effect on firm performance
Jackling & Johl (2009)	India	2006	180 listed companies	Tobin's Q, ROA	CEO duality is negatively correlated with firm performance
Sanda *et al* (2010)	Nigeria	1996-1999	93 listed firms	P/E Ratio, ROA, ROE, Tobin's Q	Firms with CEO post separated perform better than firms with CEO duality.
Ujunwa (2012)	Nigeria	1991-2008	122 quoted firms	ROAE	CEO duality is negatively related to firm performance
Empirical research showing no relationship between CEO duality and firm performance					
Dalton *et al* (1998)	Various Countries	1978-1996	69 prior research	accounting & market-based measures	Found insignificant relationship between CEO duality/leadership structure and firm performance
Elsayed (2007)	Egypt	2000-2004	92 public limited firms	Tobin's Q, ROA	CEO duality has no impact on corporate performance. However, there is a relationship (positive or negative) when the sample is categorised into industries and high & low performance firms.
Mashayekhi & Bazaz (2008)	Iran	2005-2006	240 firm year observation	EPS, ROA, ROE	The results show no relationship between CEO duality and firm performance

4.2.2 Empirical Studies on board size-performance relationship

Empirical evidence suggests that board size does matter to firm performance but the *agency theory* proposes that smaller board size is more effective than larger board size (Lipton and Lorch, 1992; Jensen, 1993) in monitoring, controlling as well as quick decision making by directors of a particular firm. In particular, Lipton and Lorch (1992) are of the view that the board size between eight and nine directors is considered appropriate because additional cost associated with slow decision-making is higher than the marginal benefits if the number of directors exceeds ten. However, and as can be seen from Tables 4-2a-c, prior studies have found some mixed results on the relationship between board size and firm performance (Yermack, 1996; Faccio and Lasfer, 1999; Kiel and Nicolson, 2003; Guest, 2009; Adams and Mehran, 2012; Wintoki *et al*, 2012). In this respect, Yermack (1996) was one of the first researchers to investigate board size-performance relationship. Using a sample of 452 large US firms between 1984 and 1991, he found an inverse relationship between board size and firm performance. The author showed that his evidence is robust to firm characteristics such as size, growth potential, outside directors, director ownership and industry. Consistent with prior theoretical suggestions that board side between eight and nine is more effective (Lipton and Lorch, 1992, Jensen, 1993), Yermack's evidence indicated that investors valuation of firms' declines steadily over a range of board sizes between four and ten. Beyond ten, he found no relationship between board size and firm performance.

Recent US studies (Vefeas, 1999a; Cheng, 2008; Cheng *et al*, 2008) and non-US studies (Eisenberg *et al*, 1998; Conyon & Peck, 1998; Dahya *et al*, 2002; Lasfer, 2004; Bozec, 2005; Mak and Kusnadi, 2005; Bennedsen *et al,* 2008; Guest, 2009; O'Connell and Cramer, 2010; Guo and Kga, 2012; Ujunwa, 2012) have mostly found consistent results with those of Yermack (1996) that board size is negatively related to firm performance. In particular, Eisenberg *et al* (1998) criticised Yermack (1996) for mainly

focusing on large firms, and for that matter his findings cannot be extended to smaller firms, as well as those firms operating in different legal and cultural environments. In this respect, Eisenberg *et al* (1998) investigated the relationship between board size and firm performance across 879 small and medium size firms in Finland from 1992 to 1994. In line with Yermack (1996), they reported a statistically significant and negative relationship between board size and firm's profitability measured by ROA.

Also, Conyon and Peck (1998a) found a negative relationship between board size and firm performance across a number of European countries (i.e. UK, France, Netherlands, Denmark and Italy) listed firms (701) from 1992 to 1995. Similarly, and using a larger sample size of 2,746 UK listed firms from 1981 to 2002, Guest (2009) found board size to have a strong negative impact on firm performance measured by Tobin's Q, ROA and share returns. Furthermore, Mak and Kusnadi (2005) examined the relationship between board size and firm performance in Singapore and Malaysia from 1999 to 2000. Using 230 listed firms in each country, they reported an inverse relationship between board size and firm value in both countries. These findings provide empirical support to the conclusions of Yermack (1996) and Eisenberg *et al* (1998) that larger boards are not only seen by investors as ineffective than smaller boards in monitoring managers, but also consume more managerial perquisites than the smaller boards.

In contrast, other US studies (Coles *et al*, 2008; Adams and Mehran, 2012) and non-US studies (Faccio and Lasfer, 1999; Kiel and Nicolson, 2003; El Mehdi, 2007; Kajola, 2008; Jackling and Johl, 2009; Sanda *et al*, 2010) have found a positive relationship between board size and firm performance. Using 35 US listed banking firms from 1986 to 1999, Adams and Mehran (2012) observed statistically significant and positive relationship between board size and firm performance measured by Tobin's Q. In particular, the positive relationship remains unchanged after controlling for potential problems of endogeneity between board size and firm performance. This provides

empirical support to the conclusions of previous studies in the UK and Australia respectively, where Faccio and Lasfer (1999) and Kiel and Nicolson (2003) reported board size to have a positive impact on firm performance.

Also, Kajola (2008) found a positive and statistically significant relationship between board size and firm performance measured by ROE, in a sample of 20 Nigerian listed firms from 2000 to 2006. Using a larger sample size of 93 Nigerian listed firms, Sanda *et al* (2010) reported a statistically significant and positive relationship between board size and firm performance measured by Tobin's Q. They argued that the optimal number of ten board size is appropriate for the Nigerian context; evidence not consistent with the *agency theory* proposition that smaller board size is more effective than larger board size (Lipton and Lorch, 1992; Jensen, 1993). Similarly, Jackling and Johl (2009) found that larger board size has a positive impact on firm performance measure by Tobin's Q, in a sample of 180 Indian listed firms during 2006. These findings support the view that larger boards offer greater exposure to the external environment than smaller boards which improve access to various resources and therefore positively impacts on performance (Pearce and Zahra, 1992; Goodstein *et al*, 2006).

A third group of studies have found no significant relationship between board size and firm performance (Dulewicz and Herbert, 2004; Bennett and Robson, 2004; Wintoki *et al*, 2012). In particular, Wintoki *et al* (2012) re-examined the relationship between board size and firm performance across 6,000 US listed firms from 1991 to 2003 after criticising prior studies for not controlling for the potential problems of endogeneity. They addressed the endogeneity problems by using the dynamic GMM and found no causal relationship between board size and firm performance measured by ROA. However, their evidence is not consistent with Conyon and Peck (1998a) and Guest (2009) who followed the same approach to address the problems of endogeneity but reported a negative relationship between board size and firm performance.

In Ghana, the empirical evidence is also mixed. For example, Kyereboah-Coleman and Biekpe (2006a, 2006b) found a positive association between board size and firm performance among Ghanaian listed firms, evidence supported by Abor and Biekpe (2007) and Isshaq *et al* (2009). In contrast, Kyereboah-Coleman and Amidu (2008) examined corporate governance practices of SMEs in Ghana and whether there is a linkage between these governance practices and firm performance. Their evidence on the board size-performance relationship suggests a negative association between the two. Of particular interest to this thesis is Kyereboah-Coleman and Biekpe (2006b) recommendation of the optimal board size of 10 for the Ghanaian banks, a recommendation supported by Sanda *et al* (2010) but in disagreement with Lipton and Lorch (1992). Arguably, Coles *et al* (2008) in their study grouped 8165 firm year observation from 1992 to 2001 into complex and simple firms in the US and reported that larger board size is positively associated with complex firms but this is opposite in simple firms where smaller board size is positively associated with firm performance. Their evidence suggests that very small or very large board size is optimal given the nature of a particular firm.   Consistent with Lipton and Lorch (1992), the Ghanaian Code regards board size as an effective specific governance mechanism and recommends the board size of listed firms to be between a minimum of eight and a maximum of sixteen members in order to promote effective and responsible management of a particular firm. Given the Ghanaian Code provision and the recommendation by Kyereboah-Coleman and Biekpe (2006a) for firms to maintain smaller boards, the third relevant hypothesis is operationalised in the following form:

Ho_3:   ***The smaller the board size should lead to higher firm performance.***

Overall, the board size-performance relationship evidence from both US and non-US studies have provided mixed results with three directional relationships of positive, negative and no relationship between the two. However, a majority of the studies have provided theoretical support for the

agency theory proposition that smaller boards are more effective than larger boards in affecting firm performance. In particular, and as indicated earlier, it may be very difficult for larger boards to arrange meetings, reach consensus and react quickly in decision making because of communication and coordination costs. Also, the ability and motivations of the board to monitor management may decrease with larger boards. Given the smaller boards observed across Ghanaian firms (Kyereboah-Coleman and Biekpe, 2006a; 2006b) and the subsequent recommendations of the Ghanaian Code, it is therefore expected in this thesis for the board size to have a positive impact on firm performance

Table 4-2a: Empirical research on the relationship between board size and firm performance in the US

Author (Year)	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between size of the board and firm performance				
Coles *et al* (2008)	1992-2001	8165 firm year observation from IRRC	Tobin's Q ROA	Larger board size is positively associated with firm performance (Q) in complex firms. This is opposite in simple firms where smaller board size is positively related with firm performance (Q). The result suggests that either very small or very large boards are optimal. i.e. Tobin's Q increases (decreases) in board size for complex (simple) firms, and the relationship is driven by the presence of NED.
Adams & Mehran (2012)	1986-1999	35 listed banks	Tobin's Q ROA	Board size has a positive and statistically significant correlation with Tobin's Q but has no impact on ROA
Empirical research showing negative relationship between size of the board and firm performance				
Yermack (1996)	1984-1991	452 large industrial corporations	Tobin's Q	There is inverse association between board size and firm performance. The results show that investors' valuation of firm decreases steadily over a range of board sizes between 4 and 10. Beyond 10, there is no impact on firm performance. Effectively, larger board size has negative relationship with firm performance.
Vefeas (1999a)	1990-1994	307 listed firms	Tobin's Q	Find significant negative relation between board size & firm value
Cheng (2008)	1996-2004	1252 S&P firms from IRRC	Tobin's Q ROA, Monthly share returns	Larger board size is significant negatively associated with variability of firm performance. Overall, the study consistently shows that board size adversely affects the variability of firm performance and value.
Cheng *et al* (2008)	1984-1991	350 listed firms	Tobin's Q	Board size has significant impact on firm performance
Empirical research showing no relationship between size of the board and firm performance				
Wintoki *et al* (2012)	1991-2003	6000 listed firms	ROA	After re-examined the relationship between board structure and firm performance, they find no causal relation between the two

Table 4-2b: Empirical research on the relationship between board size and firm performance in the UK

Author (Year)	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between board size and firm performance				
Faccio and Lasfer (1999)	1996-1997	1650 listed companies	Q Ratio ROE, ROA, P/E ratio	Larger board size companies over perform companies with smaller board size.
Empirical research showing negative relationship between board size and firm performance				
Conyon & Peck (1998)	1992-1995	481 listed firms	ROE, Tobin's Q	The results show board size to have a significant negative effect on firm performance
Dahya *et al* (2002)	1988-1996	460 listed firms	Performance-related top- management turnover	Negative relationship between performance-related top-management turnover and board size.
Lasfer (2004)	1990-1991 /1996-1997	1424	Tobin's Q	Board size has significant negative impact on firm performance
Guest (2009)	1981-2002	2746 larger sample size	Tobin's Q ROA Share returns	Board size has strong negative impact on Tobin's Q, profitability and share returns.
Empirical research showing no relationship between board size and firm performance				
Bennet & Robson (2004)	1994-1997	1445 SMEs	Change in profitability per employee	There is little evidence of strong association between board size and firm performance
Dulewicz & Herbert (2004)	1997-2000	75-80 listed firms	CFROTA, Sales turnover	No significant correlation between whether larger or smaller board size and firm performance

Table 4-2c: Empirical research on the board size-performance relationship in other countries

Author (Year)	Country of study	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between board size and firm performance					
Kiel & Nicolson (2003)	Australia	1996	348 listed companies	Tobin's Q ROA	Board size is positively correlated with firm performance
El Mehdi (2007)	Tunisia North Africa	2000-2005	24 listed companies	Marginal Q	Board size is statistically significant and positively related with firm performance.
Kajola (2008)	Nigeria	2000-2006	20 listed companies	ROE Profit margin (PM)	There is a positive and significant relationship between board size and firm performance (ROE) but no significant relationship between board size and PM
Jackling & Johl (2009)	India	2006	180 listed companies	Tobin's Q ROA	There is a significant and positive relationship between larger board size and firm performance.
Sanda *et al* (2010)	Nigeria	1996-1999	93 listed firms	Tobin's Q P/E Ration, ROA, ROE	Board size is significant and positively associated with firm performance (Tobin's Q) but has no impact on ROA. They recommended optimal number of 10 for Nigerian companies.
Empirical research showing negative relationship between board size and firm performance					
Eisenberg *et al* (1998)	Finland	1992-1994	879 small firms	ROA	Statistically significant and negative correlation between board size and firm performance.
Bozec (2005)	Canada	1976-2000	25 SOE	ROS, ROA, Sales Efficiency, NIE, Asset Turnover	A negative relation is found between board size and firm performance (ROS, sales efficiency & assets turnover) but no impact on ROA,& NIE
Mak & Kusnadi (2005)	Singapore & Malaysia	1999-2000	230 firms for each country	Tobin's Q	The results show a negative relationship between board size and firm performance
Bennedsen *et al* (2008)	Denmark	1999	6850 firms	ROA	Board size has significant and negative impact on firm performance
O'connell & Cramer (2010)	Republic of Ireland	2001	44 listed firms	RET, Financial Q, ROA	Board size exhibits a significant negative association with firm performance. The relationship is significantly less negative in smaller firms
Guo & Kga (2012)	Sri Lanka	2010	174 listed firms	ROA, Tobin's Q	Board size shows a marginal negative relationship with firm performance
Ujunwa (2012)	Nigeria	1991-2008	122 quoted firms	ROAE	Board size is negatively related with firm performance

4.2.3 Empirical studies on the proportion of NEDs-performance relationship

The appointment of non-executive directors to sit on the board is suggested to be an effective governance mechanism used to partially reduce the agency problems in modern firms (Fama, 1980; Lipton and Lorch, 1992; Jensen, 1993). Given the agency theory proposition that boards dominated by executive directors (insiders) are not accountable to shareholders (Fama, 1980; Sonnenfeld; 2002), the presence of non-executive directors on the board with their different expertise enhances board decision making process through their independent mind and judgement (Cadbury, 1992). In this respect, the non-executive directors are appointed to monitor and advise the executive directors on behalf of the shareholders of a particular firm. This is the basis on which most of the codes of best practices developed around the world to date have recommended the inclusion of non-executive directors on the board. The key studies with a range of evidence regarding the relationship between the proportion of non-executive directors on the board and firm performance are shown in Tables 4-3a-c.

Notwithstanding the important role that the presence of non-executive directors plays in reducing the notorious agency problems, evidence on the relationship between the proportion of non-executive directors on the board and firm performance is mixed (Pearce and Zahra, 1992; Daily and Dalton, 1993; Agrawal and Knoeber, 1996; Klein, 1998; Vafeas and Theodorou, 1998; Weir *et al*, 2002; Bozec, 2005; El Mehdi, 2007; Coles *et al*, 2008; Kajola, 2008; Guest, 2009; Sanda *et al*, 2010, Adams and Mehran, 2012; Wintoki *et al*, 2012). Using a sample of 119 US *Fortune 500* industrial firms from 1983 to 1989, Pearce and Zahra (1992) found the proportion of outside directors to have statistically significant and positive impact on firm performance measured by ROA, ROE and EPS. Similarly, Daily and Dalton (1993) reported a statistically significant and positive relationship between the proportion of outside directors on the board and firm performance in a sample of 186 US smaller listed firms.

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Also, prior US studies (Coles *et al*, 2008; Gupta and Fields, 2009) and non-US studies (Faccio and Lasfer, 1999; Weir *et al*, 2002; El Mehdi, 2007; Cho and Kim, 2007, Jackling and Johl, 2009) have reported a positive relationship between the proportion of non-executive directors and firm performance. In particular, Weir *et al* (2002) reported a positive relationship between the proportion of non-executive directors and firm performance measured by Tobin's Q in a sample of 311 UK listed firms from 1994 to 1996. In a sample of 347 Korean listed firms during 1999, Cho and Kim (2007) found that the rate of outside directors' participation is significant and positively related with firm performance measured by ROA. These findings suggest that boards dominated by outside directors offer higher performance.

In contrast, Other US studies (Agrawal and Knoeber, 1996; Yermack, 1996) and non-US studies (Kiel and Nicolson, 2003; Dulewicz and Herbert, 2004; Bozec, 2005 Guest, 2009, Mangena *et al*, 2012) have reported that the proportion of non-executive directors representation on the board is negatively related to firm performance. Using a sample of 25 Canadian firms from 1976 to 2000, Bozec (2005) found that the relationship between the proportion of non-executive directors and firm performance is negative. Similarly, Mangena *et al* (2012) reported a statistically significant and negative relationship between the proportion of non-executive directors and firm performance measured by Tobin's Q, in a sample of 157 Zimbabwean listed firms from 2000 to 2005. This indicates that the benefit of board independence, objectivity and experience expected from the representation of outside directors to influence board decisions appears to hold back managerial initiative through too much monitoring.

A third group of US studies (Daily and Dalton, 1992; Klein, 1998; Adams and Mehran; 2012; Wintoki *et al*, 2012) and non-US studies (Vafeas and Theodorou, 1998; Laing and Weir, 1999; Weir and Laing; 2000; Haniffa and Hudaib, 2006; Ghosh, 2006; Kajola, 2008; Sanda *et al*, 2010) suggest that the presence of outside directors on the board has no effect on firm

performance. For example, Daily and Dalton (1992) observed no relationship between the proportion of non-executive directors and firm performance measured by ROA for a sample of 100 US listed firms during 1989. Using a larger sample of 6000 US firms from 1991 to 2003, Wintoki *et al* (2012) also reported no causal relation between board independence and firm performance measured by ROA. Similarly, the UK studies by Vafeas and Thoedorou (1998), Laing and Weir (1999) and Weir and Laing (2000) have found statistically insignificant relationship between the representation of outside directors on the board and firm performance. In addition, Haniffa and Hudaib (2006) observed statistically insignificant between the proportion of outside directors and firm performance measured by Tobin's Q and ROA, in a sample of 347 Malaysian listed firms from 1996 to 2000. Their evidence is supported by the recent studies by Ghosh (2006), Kajola (2008) and Sanda *et al* (2010) who also found no relationship between the presence of outside directors on the board and firm performance in India and Nigeria respectively.

In Ghana, the evidence is not different from the general literature. For example, Kyereboah-Coleman and Biekpe (2006a, 2006b) found a negative association between the proportion of non-executive directors on the board and Ghanaian listed firms' performance. By contrast, Abor and Biekpe (2007) reported a significant positive relationship between the two among SMEs in Ghana. However, the Ghanaian Code recommends a balance of executive and non-executive directors on the board to monitor the activities of management. This means that the inclusion of non-executive directors on the board should therefore ensure effective monitoring of the executive directors whose interests are not aligned with shareholders value maximisation. In this respect, and given the Ghanaian Code provision of firms having a balance of executive and non-executive directors, the fourth relevant hypothesis is operationalised in the following form:

Ho$_4$: **The higher the proportion of non-executive directors, the lower the firm performance.**

Even though the representation of non-executive directors on the board is expected to have a positive impact on firm performance, the evidence from the literature appears to be highly mixed within and between studies. This is not surprising because Conyon and Peck (1998a) argued that if outside directors either hold no shares or hold an insignificant number of shares, their motivation to monitor the executive directors, and therefore defend the shareholder interests may be immaterial. This is particular important because the existence of the board as the most effective internal control mechanism for monitoring the executive directors' behaviour (Fama and Jensen, 1983a) may not be achieved, and therefore could ultimately lead to poor performance. Given that a high proportion of non-executive directors with little or no shareholdings suggest weak monitoring, it is expected in this thesis to lead to poor firm performance.

Table 4-3a: Empirical research on the proportion of NEDs-performance relationship in the US

Author (Year)	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between the proportion of NEDs and firm performance				
Pearce & Zahra (1992)	1983-1989	450 Fortune 500 firms	ROA, ROE, EPS Net profit margin (NPM)	Proportion of outside directors is significant and positively associated with firm performance (ROA, ROE & EPS) but has no impact on NPM
Daily & Dalton (1993)	Not given in the study	186 small listed firms	ROA, ROE, PER	Proportion of outside directors is significant and positively associated with firm performance
Coles *et al* (2008)	1992-2001	8165 firm year observation from IRRC	Tobin's Q ROA	Larger proportion of NEDs on the board is positively (negatively) associated with firm performance (Q) in complex (simple) firms.
Gupta & Fields (2009)	1990-2003	744 listed firms	Market Value Market Value to Equity ROA, ROE	The announcement of independent NEDs resignation results in 1.22% loss in a firm's market value. This means that investors' value board independence as the presence of independent boards is positively associated with greater monitoring of managerial behaviour.
Empirical research showing negative relationship between the proportion of NEDs and firm performance				
Agrawal & Knoeber (1996)	1987	400 listed firms	Tobin's Q	Greater outside representation of the board lead to poorer firm performance.
Yermack (1996)	1984-1991	452 large industrial corporations	Tobin's Q	The proportion of outside directors is statistically significant and positively related to firm performance
Empirical research showing no relationship between the proportion of NEDs and firm performance				
Daily & Dalton (1992)	1989	100 listed firms	ROA	Proportion of outside directors has no impact on firm performance
Klein (1998)	1991-1993	486 firms listed on S&P 500	ROA, Market Returns (MR), Productivity	There is no significant relationship between proportion of NED and firm performance (ROA & MR) but NED is significant and negatively associated with firm performance (Productivity)
Adams & Mehran (2012)	1986-1999	35 listed banks	Tobin's Q ROA	Proportion of NEDs on the board has no impact on firm performance measured by Tobin's Q. But it has a significant and negative relationship with ROA
Wintoki *et al* (2012)	1991-2003	6000 listed firms	ROA	Find no causal relation between board independence and firm performance

Table 4-3b: Empirical research on the proportion of NEDs-performance relationship in the UK

Author (Year)	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between NEDs and firm performance				
Faccio &Lasfer (1999)	1996-1997	1650 listed companies	Q-ratio ROE, ROA P/E ratio	Companies with proportion of outside directors on the board perform better than other companies who do not have independent board.
Weir *et al* (2002)	1994-1996	311 listed companies	Q-ratio	Representation of independent NEDs on the board has significant and positive relationship with firm performance. This is however not the case if NEDs are not independent.
Empirical research showing negative relationship between the proportion of NEDs and firm performance				
Dulewicz &Herbert (2004)	1997-2000	300 questions were answered by board chairman	CFROTA Sales Turnover	The larger the proportion of NEDs the lower was the subsequent growth of sales. However, there is no significant correlation between proportion of NEDs and firm performance (CFROTA). Again, no performance differences were found on either the Combined Code (1/3) or the Smith (50%).
Guest (2009)	1981-2002	2746 larger sample size	Tobin's Q ROA Share returns	Proportion of outside directors has significant negative impact on firm performance variables.
Empirical research showing no relationship between the proportion of NEDs and firm performance				
Vafeas & Theodorou (1998)	1994	250 Public traded firms	Market-to-book ratio, Operating performance/ Total Assets	The findings are that there is insignificant relationship between the proportion of NEDs and firm performance
Laing & Weir (1999)	1992 & 1995	115 listed companies	ROA	Statistically insignificant relationship between NEDs representation and firm performance.
Weir & Laing (2000)	1992 & 1995	200 listed companies	ROA RAW	There is statistically insignificant relationship between proportion of outside directors on the board and firm performance (ROA)

Table 4-3c: Empirical research on the proportion of NEDs-performance relationship in other countries

Author (Year)	Country of study	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between the proportion of NEDs and firm performance					
El Mehdi (2007)	Tunisia	2000-2005	24 listed companies	Economic performance (Marginal Q)	Proportion of outside directors is positively associated with firm performance
Cho & Kim (2007)	Korea	1999	347 listed firms	ROA	The rate of outside directors participation is significant and positively associated with firm performance (ROA)
Jacking & Johl (2009)	India	2006	180 listed firms	Tobin's Q ROA	Proportion of outside directors has positive and significant impact on firm performance
Empirical research showing negative relationship between the proportion of NEDs and firm performance					
Kiel & Nicolson (2003)	Australia	1996	348 listed companies	Tobin's Q ROA	Proportion of outside directors is significant and negatively associated with firm performance (Tobin's Q) but has no relationship with ROA
Bozec (2005)	Canada	1976-2000	25 SOE	ROS, ROA, NIE Sales Efficiency Asset turnover	The higher the proportion of outside directors, the lower the firm performance as measured by ROS, ROA & NIE
Mangena *et al* (2012)	Zimbabwe	2000-2005	Total 157 listed firms	Tobin's Q	Proportion of outside directors is statistically significant and negative relationship with firm performance.
Empirical research showing no relationship between the proportion of NEDs and firm performance					
Haniffa & Hudaib (2006)	Malaysia	1996-2000	347 listed companies	Tobin's Q ROA	Proportion of outside directors has no impact on firm performance (Tobin's Q & ROA)
Ghosh (2006)	India	2003	127 listed manufacturing firms	ROA Adjusted Tobin's Q	Proportion of outside directors has no significant impact on firm performance measured by ROA & Adjusted Tobin's Q
Kajola (2008)	Nigeria	2000-2006	20 listed companies	ROE Profit margin (PM)	Proportion of outside directors has no significant impact on firm performance
Sanda *et al* (2010)	Nigeria	1996-1999	93 listed firms	Tobin's Q ROA, ROE P/E Ratio	Larger proportion of outside directors has no impact on firm performance. This is however not the case for firms with smaller size of NEDs as they perform better than those with larger NEDs.

4.2.4 Empirical board committees-performance relationship studies

Previous literature suggests that the establishment of board committees in a particular firm is an effort to help improve the effectiveness and efficiency of the board in discharging their duties (Jiraporn *et al*, 2009). Of particular interest to this thesis are the audit, remuneration and nomination committees whose functions are well considered as important by the worldwide corporate governance reforms. Notwithstanding its usefulness, corporate governance theorists view board committees from a different perspective. One notable argument is that the creation of board committees can affect firm performance positively (Wild, 1994; Sun and Cahan, 2009). This view is supported by Karamanou and Vafeas (2005) who also argued that these committees have the time to meet frequently due to the small size and are able to make decisions quicker than the main board for implementation. By contrast, Vefeas (1999b) is of the view that the creation of board committees add extra costs resulted from management time, travel expenses and additional fees paid to the members of the committees. He concluded that these board committees can have negative effect on firm performance, a finding supported by McKnight and Weir (2009) who reported that the adoption of a formal nomination committee increases agency cost.

Arguably, the existence of board committees may improve corporate accountability, legitimacy and credibility by performing specific functions (Weir *et al*, 2002). In this respect, and given the focus of this thesis on audit, remuneration and nomination committees, the functions of these board committees in an attempt to minimise the agency problems with the ultimate improvement in firm performance are very important. For example, the main function of the audit committee is to have frequent meetings with the firm's internal and external auditors to review its financial statements, audit process and internal accounting control systems. This is particularly important because it helps to minimise the agency costs by facilitating timely release of unbiased accounting information by managers to shareholders (Klein, 1998). Furthermore, the effective monitoring by the audit committee

may also help to reduce financial fraud which may ultimately improve firm performance.

On the other hand, the principal function of the remuneration committee is to determine and re-evaluate the nature and amount of compensation paid to the directors and senior officers. By creating and implementing compensation schemes and incentives in an attempt to better align the interests of managers and shareholders may help in reducing the agency problems (Klein, 1998; Weir and Laing, 2000). This is particularly important because including, for example, share options and bonuses in the managers' compensation packages may re-align their interests with the shareholders. It is therefore argued in this thesis that the managerial ownership and payment of bonuses as part of managers' remuneration may help to improve firm performance. The nomination committee key function is to nominate candidates for the possible appointment to the board. This is also particularly important because it helps to reduce the agency problems by enhancing board independence and the quality of appointed directors.

Fundamentally, significant work exists on the impact of board committees in the context of their primary role. For example, extensive research has been undertaken in the context of audit committees characteristics and the quality of financial reporting (e.g. Beasley, 1996; Carcello and Neal, 2000; Beasley *et al*, 2000; Klein, 2002; Abbort *et al*, 2004) as well as the remuneration committees and pay-performance relationship (e.g. Main and Johnston, 1993; Conyon and Peck, 1998b; Ezzamel and Watson, 2002; Johnston, 2005). However, and as can be seen from Tables 4-4a-c, the empirical literature concerning the relationship between the establishment of board committees and firm performance is limited (Laing and Weir, 1999). Consistent with the theoretical literature, the empirical evidence on board committees-performance relationship is mixed (Wild, 1994; Klein, 1998; Vafeas and Theodorou, 1998; Laing and Weir, 1999; Bozec, 2005; Black and Kim, 2012). Using a sample of 260 US listed firms from 1966 to 1980, Wild (1994) investigated the market reaction before and after the establishment

of audit committees. He reported a statistically significant improvement in share returns following the establishment of audit committees, indicating that the presence of audit committees can improve managerial accountability to shareholders. Using a sample of 115 UK listed firms during 1992 and 1995, Laing and Weir (1999) observed that the presence of audit and remuneration committees do positively affect firm performance measured by ROA.

In contrast, and unlike Laing and Weir (1999), prior studies have failed to find consistent evidence between board committees and firm performance (Bozec, 2005; Black and Kim, 2012; Lam and Lee, 2012). Using a sample of 25 Canadian firms from 1976 to 2000, Bozec (2005) found the presence of audit committees to have a negative impact on firm performance. However, he found the presence of nomination committees to have a positive impact on firm performance. Recent evidence by Black and Kim (2012) in Korean 658 large public firms and 611 smaller firms found nomination and audit committees to have a statistically significant and positive impact on large public firms' performance but not smaller firms. They however observed that remuneration committees have no impact on both large and smaller firms' performance. Consistent with Black and Kim (2012), Lam and Lee (2012) examined the relationship between board committees and firm performance in a sample of 346 Hong Kong public listed firms from 2001 to 2003 and found a statistically significant and positive relationship between the presence of nomination committees and firm performance. At the same time however they found a statistically significant and negative relationship between the presence of compensation committees and firm performance.

A third group of US studies (Klein, 1998) and non-US studies (Vafeas and Theodorou, 1998; Weir *et al*, 2002; Dulewicz and Herbert, 2004; Kajola, 2008) have indicated no empirical relationship between board committees and firm performance. Klein (1998) investigated the relationship between the presence of audit, compensation and nomination committees and firm performance but reported no statistically significant relationship in a sample of 486 US firms from 1991 to 1993. Similarly, Vafeas and Theodorou (1998)

examined the effect of audit; remuneration and nomination committees on the performance of 250 UK listed firms during 1994 but observed no evidence to support the proposition that the presence of these three board committees significantly enhanced firm performance. Recent evidence by Weir *et al* (2002) and Dulewicz and Herbert (2004) in the UK have also found no significant impact of board committees on firm performance. Also, Kajola (2008) reported no significant relationship between the presence of audit committees and performance in a sample of 20 Nigerian listed firms from 2000 to 2006.

In Ghana, Kyereboah-Coleman and Amidu (2008) reported that the presence of audit committees is beneficial to the performance of SMEs. However, there is no available evidence regarding the impact of the establishment of board committees on Ghanaian listed firms' performance. Given that the Ghanaian Code recommends the establishment of an audit committee and a remuneration committee in order to improve the effectiveness of the Ghanaian listed firms' board operations, the fifth relevant hypothesis is operationalised in the following form:

Ho$_5$: **The presence of an audit committee and a remuneration committee should lead to better firm performance.**

Arguably, the impact of the presence of board committees on firm performance is still not clear as the research in this area is at its emergent stage (Dalton *et al*, 1998; Laing and Weir, 1999). However, and given the important functions of the board committees in an attempt to help reduce the agency problems, provide an interesting area for further research. This is particularly important in developing country context as it may help to provide further insights on the board committees-performance relationship. It is therefore argued in this thesis that the presence of audit and remuneration committees in the Ghanaian listed firms could help to reduce the agency costs and expected to have a positive impact on firm performance.

Table 4-4a: Empirical research on board committees-performance relationship in the US

Author (Year)	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between board committees and firm performance				
Wild (1994)	1966-1980	260 listed companies	Share returns	There is a statistically improvement following the establishment of an audit committee. Overall, the audit committee enhances both managerial accountability to shareholders as well as an effective corporate governance mechanism
Vafeas (1999b)	1994	606 listed companies	Board quality	There is a positive association between nomination committee and board of directors' quality. This means that directors' quality impacts decision making process which will have a positive effect on firm performance.
Empirical research showing no relationship between board committees and firm performance				
Klein (1998)	1991-1993	485 (1992) S&P firms & 486 (1993) S&P 500 firms	ROA Productivity Market returns	Audit committee is not statistically significant associated with firm performance. Remuneration committee on the other hand is significant and positively associated with firm performance (Productivity & Market returns) but not statistically strong.

Table 4.4b: Empirical research on board committees-performance relationship in the UK

Author (Year)	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between board committees and firm performance				
Laing & Weir (1999)	1992 & 1995	115 listed companies	ROA	Audit and remuneration committees do positively affect firm performance
Weir &Laing (2000)	1992 & 1995	200 listed companies for each year	ROA RAW (market-based measures)	The presence of remuneration committee is significant and positively associated with firm performance (RAW)
Empirical research showing negative relationship between board committees and firm performance				
Main & Johnston (1993)	1990	220 large public held British companies	Executive pay	The presence of a remuneration committee is associated with higher levels of the executive pay which effectively reduces profitability.
Empirical research showing no relationship between board committees and firm performance				
Vafeas & Theodorou (1998)	1994	250 Public traded firms	Market-to-book ratio Operating performance/total assets	The presence of board committees has no impact on firm performance.
Weir *et al* (2002)	1994-1996	311 listed firms	Q Ratio	The presence of audit committee has no impact on firm performance.
Dulewicz & Herbert (2004)	1997	300 question answered by board chairman	CFROTA Sales turnover	No statistically differences in firm performance (CFROTA or Sales turnover) between boards with audit and remuneration committees and those that did not have one.

Table 4-4c: Empirical research on board committees-performance relationship in other countries

Author (Year)	Country of study	Study period	Sample size	Performance variable	Summary results
Empirical research showing positive relationship between board committees and firm performance					
Black & Kim (2012)	Korea	1998-2004	658 public listed firms & 611 smaller firms	Tobin's Q	Nomination and audit committees are found to have significant positive impact on large public firms' performance but not smaller firms. However, compensation committee has no impact on both large public firms and smaller firms
Lam & Lee (2012	Hong Kong	2001-2003	346 public listed firms	ROA, ROE, ROCE, MTBV	Nomination committee is found to have significant positive impact on firm performance. However, a remuneration committee has a significant negative impact on firm performance
Empirical research showing negative relationship between board committees and firm performance					
Bozec (2005)	Canada	1976-2000	25 SOE	ROS, ROA, NIE Sales efficiency Assets Turnover	The presence of audit committee has a negative relationship with firm performance. However, nomination committee has a positive impact on sales efficiency, NIE & assets turnover.
Empirical research showing no relationship between board committees and firm performance					
Kajola (2008)	Nigeria	2000-2006	20 listed companies	ROE Profit Margin (PM)	The presence of audit committee has no significant impact on firm performance measured by ROE & PM

The objective of this first section of the chapter was to provide a review of the theoretical and empirical literature on the specific governance mechanisms-performance relationship as the foundation. This approach is fundamental and in particular, prior researchers have extensively undertaken research by using these mechanisms with highly mixed results. In this respect, a major criticism of the specific governance mechanisms is that its purpose of reducing the agency problem might not be achieved if corporate governance provisions are adopted selectively. Indeed, Diacon and O'Sullivan (1995) reported that some governance mechanisms are more effective than others in promoting profitability, suggesting that not all the specific governance mechanisms recommended by the progressive worldwide corporate governance reforms on their own may be beneficial to firm performance. Instead, the adoption of a set of governance mechanisms may be more effective in reducing the agency problem than the selective adoption of these mechanisms because they may be interrelated in order for it to be more effective and useful for the purpose of reducing the agency problems. In particular, and as will be explained in chapter five, a set of the specific governance mechanisms developed into governance index covers several mechanism (Brown and Caylor, 2006) which may have the advantage of more explanatory power in explaining firm performance than each of the specific governance mechanisms (Core, 2001). In the next section, prior studies based on a set of governance mechanisms developed into a single index are reviewed in order to ascertain whether it provides more consistent evidence in enhancing firm performance or not.

4.3 GOVERNANCE INDEX-PERFORMANCE RELATIONSHIP STUDIES

The previous section has shown highly mixed results in respect of the specific governance mechanisms-performance relationship, suggesting that not all the specific governance mechanisms in isolation are effective in reducing the notorious agency problems. However, the seminal work of Black (2001) on

governance index-performance relationship in Russia and that of Gompers *et al* (2003) in the US are a case example where they all reported a statistically significant and positive relationship between their governance index and firm performance. Recently, Padgett and Shabbir (2008) argued that firm performance is affected holistically by a set of specific governance mechanisms but not on an individual basis. This emerging approach focuses on and reinforces the development of a corporate governance index (CGI) by integrating the available corporate governance provisions into compliance or non-compliance indices to investigate governance-performance relationship. In this respect, is there any evidence by this emerging approach to suggest a consistent positive and statistically significant association between *CGI* and firm performance or not? This section reviews governance index-performance relationship studies. The review has been structured under three main themes based on the World Bank (2009) classification of developed and developing countries. First, governance index-performance studies in the developed countries have been covered in subsection 4.3.1. Second, subsection 4.3.2 focuses on studies in the developing countries governance index-performance relationship studies. The third strand of governance index-performance relationship in subsection 4.3.3 presents comparative studies on a mixture of developed and developing countries as well as those in the developed countries.

4.3.1 Governance index-performance studies in developed countries

A majority of prior studies on governance index-performance relationship are mainly carried out in the developed countries with the US topping the list of studies with more than any other country worldwide. This may be particularly due to the availability of governance data through commercial rating agencies in the country. This subsection has separated the governance index-performance relationship into North America, European and other developed countries studies as follows.

North America studies

Labelle (2002) is among the first researchers to examine corporate governance disclosure quality-performance relationship using a sample size of 162 and 132 listed firms in Canada for the 1996 and 1997 study period. The author used the ratings on a statement of corporate governance practices (SCGP) published by the Canadian Institute of Chartered Accountants (CICA) to benchmark the disclosure quality of corporate governance. Using logistic regression as a method of estimation, the findings suggest no consistent and significant relationship between disclosure quality of corporate governance and firm performance measured by ROE. By contrast, Klein *et al* (2005) find that effective compensation, disclosure and shareholder rights sub-indices have a positive impact on firm performance measured by Tobin's Q using a larger sample size of 263 listed firms. They however found no evidence that a total governance index affects firm performance. This is mainly because of the board independence sub-index failure to have any positive impact as the most heavily-weighted sub-index and they noted that not all measured governance is important as the effects do differ by ownership category.

Consistently, some recent studies in Canada have also failed to find any relationship between governance index and firm performance (Gupta *et al*, 2009; Bozec *et al*, 2010). Specifically, Gupta *et al* (2009) examined the association between governance index or sub-indices and firm performance using data for the 2002 through to 2005 study period. The authors used the Globe and Mail's Report on Business corporate governance index of 158 common listed firms of four year time series data with board competency, board and CEO compensation, shareholder rights and disclosure as its dimensions for the study. As noted earlier, their study does not find any association between the governance index or sub-indices and firm performance measured by Tobin's Q, MTBV, ROA and stock returns. Bozec *et al* (2010) also re-examined the governance index-performance relationship

using technical efficiency measures over a five year period from 2001 to 2005 inclusive. Similar to the work of Gupta *et al* (2009), the authors used the same governance index or sub-indices from the Global and Mail Report on Business published each year with firm performance measured by using data envelopment analysis (DEA) for technical efficiency and Tobin's Q. The findings indicate that variation in firm level corporate governance mechanisms is significant in variation of firm technical efficiency. Further, a panel data analysis also shows a positive impact of board composition, board and CEO compensation and disclosure sub-indices on firm technical efficiency. But consistent with the above Canadian studies, the evidence suggests no association between the total governance index and firm performance measured by Tobin's Q.

In the US and contrary to the Canadian studies, Gompers *et al* (2003) henceforth GIM in their study find a strong relationship between corporate governance and firm performance measured by Tobin's Q, NPM, ROE and sales growth. The authors created a governance index (G-Index) with 24 governance rules to proxy for shareholder rights based on corporate governance provisions of 1500 large listed firms published by Investor Responsibility Research Centre (IRRC) from 1990 to 1998. Their evidence suggests that firms with higher shareholder rights are associated with higher market valuation, and have higher profits, higher sales growth and lower capital expenditure. They noted that those democratic firms outperformed their dictatorship counterparts by a statistically significant of 8.5% per year and further concluded that poor governance causes agency costs. In strengthening the evidence of GIM, Cremers and Nair (2005) investigated how the market for corporate control (external governance) and shareholder activism (internal governance) interact to influence firm performance measured by abnormal returns, ROE, ROA and NPM using 1500 listed firms from 1990 to 2001. Their findings suggest that internal and external governance mechanisms are complementary in being associated with firm

performance and that firms with better corporate governance provide superior share returns and are valued higher by the US stock market.

Following that, Bebchuk *et al* (2009) hereafter BCF examined what matters in corporate governance by also using corporate governance provisions published by IRRC in their study. The authors constructed an entrenchment index (E-Index) with six provisions[11] from the 24 provisions used by GIM but extended the study period from 1990 to 2003 with a sample size ranging from 1400 to 1800. Using fixed effects as a method of estimation, they reported that increases in the E-Index during the sample period are associated with decreases in firm performance measured by Tobin's Q. As indicated earlier, they extended their study by exploring the extent to which the six provisions in the E-Index are responsible for the negative association between the IRRC provisions and stock returns in the 1990s. In this respect, the evidence suggests that the E-Index is negatively correlated to abnormal returns both during the 1990 to 1999 in line with the study of GIM and during the longer period from 1990 to 2003. However, the remaining eighteen IRRC provisions not in the E-Index were found to be uncorrelated with either reduced firm valuation or negative abnormal returns.

By contrast, other studies in the US have struggled to find consistent evidence by using the G-Index and the E-Index constructed by GIM and BCF. This has cast serious doubt on the validity of their evidence regarding the positive relationship between corporate governance and firm performance (Core *et al*, 2006; Bhagat and Bolton, 2008; 2009; Fodor and Diavatopoulos, 2010). For example, Core *et al* (2006) investigated whether weak governance cause weak stock returns using the G-Index but with an extended study period from 1990 to 2003. Using 9,917 firm-year observation and a time series regression analysis, the authors find that the G-Index has a significant negative relationship with future firm performance measured by

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[11] These provisions include staggered board, limits to shareholder bylaw amendments, poison pills, golden parachutes, and super majority requirements for mergers and charter amendments.

ROA. In this respect, their evidence confirms the finding of GIM that higher G-Index has greater agency costs. They also investigated the GIM finding that firms with weak shareholder rights exhibit significant stock market underperformance. But contrary to the GIM finding, analysts forecast and earning announcement returns show no evidence that this announcement surprises the market. They further noted that abnormal stock returns for firms with weak shareholder rights are somewhat greater than returns for strong governance firms. Bhagat and Bolton (2008) also focused on the GIM (G-Index) and BCF (E-Index) but added board index, ownership index and CEO duality index to shed light on the relationship between corporate governance and firm performance measured by ROA, Tobin's Q and stock returns. They reported that better governance as measured by GIM and BCF indices, stock ownership, board matters and CEO-Chair separation are significantly and positively related to operating performance. They however noted that none of the governance measures is associated with future stock returns. This evidence is contrary to the claims in the work of GIM and BCF but confirms the finding of Core *et al* (2006) discussed earlier.

Of particular importance to this thesis, and given the passage of SOX during 2002, Bhagat and Bolton (2009) examined the relationship between corporate governance and firm performance for the period 1998 to 2007. The authors separated the sample into pre 2002 and post 2002 periods to study how governance index-performance relationships might have been affected by the passage of SOX. Using the G-Index of GIM and E-Index of BCF as the most popular indices for their pre 2002 and post 2002 study, the authors found a negative association between these indices and firm performance during 1998 to 2001, the results found to be consistent with the earlier studies by GIM and BCF. However, this is not the case during post 2002, where the G-Index suggests a positive and significant association with firm performance during 2003 to 2007. The E-Index also on the other hand suggests an inconsistent association with firm performance during 2003 to 2007. These findings indicate that the time period of a particular study may

have an impact on its outcome. This is because the GIM and BCF indices used may not reflect the actual governance practices given the passage of SOX and therefore the inconsistent results.

Unlike Bhagat and Bolton (2009) whose study period spanned from 1998 to 2007, Fodor and Diavatopoulos (2010) also re-examined the findings of GIM and BCF for the study period 1990 to 2007 with the G-Index and E-Index also used as the corporate governance variables. Their evidence suggests that the association between the indices (G-Index and E-Index) and firm performance measured by stock returns is weaker than previously suggested over the 1990 to 1999 by GIM and BCF. In extending the sample period, they reported a reversal (negative) association between the indices and firm performance during 2000 to 2007. Again, sorting firms into portfolios by G-Index (E-Index) score with monthly returns over the period 2000 to 2007 provides no evidence for superior performance of firms with low G-Index (E-Index) scores as documented by GIM (BCF). Consistent with the work of Bhagat and Bolton (2009), the results indicate that the relationships may be specific to time periods of the studies. As explained earlier, the GIM and BFC indices may not be a representative of governance practices during 2000 to 2007 and therefore were not able to explain firm performance.

In a significant departure from IRRC corporate governance data as an input for the development of the G-Index and E-Index for US studies, Brown and Caylor (2006) created GOV-Scores based on the data of the largest corporate governance data provider to institutional investors, institutional shareholder services (ISS) with 51 firm-specific provisions representing both internal and external governance. Using the sample size of 1868 listed firms from 2002 to 2003, the GOV-Score is found to be significant and positively related to firm performance measured by Tobin's Q. Also, they suggested that the GOV-7 fully drives the relation between the GOV-Scores and firm performance, the results which is consistent with BCF E-Index that a small subset of factors fully drives the association between IRRC corporate governance data and

firm performance. Similarly, and consistent with Cremers and Nair (2005), they showed that internal and external governance matter in influencing firm performance in the US. More importantly, the study used different database and time periods than previous studies but they confirm past evidence that the absence of staggered board and poison pills are statistically significant and positively associated with firm performance.

In contrasting the findings of the governance index-performance relationships studies mainly based on ISS corporate governance database, Epps and Cereola (2008) queried whether ISS corporate governance ratings reflect on firm's performance for 2002 to 2004 study period in the US. Using the actual corporate governance ratings received by a firm and accounting-based performance measured by ROA and ROE, the authors reported that there is no predicted effect of corporate governance ratings on firm performance. They cautioned investors to remember that a good governance rating does not guarantee better firm performance. In another development, Bauer *et al* (2010) investigated whether corporate governance matters to the US Real Estate Investment Trusts (REIT) performance by using ISS corporate governance database. In this respect, they find a statistically significant and positive association between CGI and firm performance for over 5000 firms during 2003 to 2005. The authors however could not find any relationship between the 220 REITs firms drawn from the original sample and firm performance. Further, the control sample of REIT selected from the G-Index sample failed to show any association with firm performance. But, they contend that the partial lack of association between corporate governance and performance in the real estate sector might be due to the REIT effect.

Another group of studies in the US have used a mixture or different rating agencies to test the governance index-firm performance relationship but with mixed results (Larcker *et al*, 2007; Erthugul and Hedge, 2009; Spellman and Watson, 2009; Daines *et al*, 2010). For example, Larcker *et al* (2007) attempted to provide an explanatory inquiry into the dimensions of corporate

governance and its effect on firm performance. The authors used governance data from Equilar, Spectrum data files, Compustat and TrueCourse with ROA, NPM and sales growth as performance measures. Using a larger sample size of 2,106 listed firms from 2002 to 2003 study period, they reported a positive association between the governance index and firm performance. By contrast, Erthugul and Hedge (2009) examined the corporate governance ratings provided by the premier US agencies and their effect on firm performance. The rating agencies used include The Corporate Library (TCL), ISS, Governance Metrics International (GMI) and S&P with stock returns as the performance measure from 2003 to 2005. Their study focused on whether rating a firm's corporate governance practices predicts its future performance but concluded that the summary scores are generally poor predictors of primary and secondary measures of performance. Specifically, they find that the TCL and ISS ratings are negatively related to the future firm performance of the rated firms. This is not the case for GMI ratings where there is a positive association between GMI ratings and future firm performance of the rated firms. In this respect, it may argue that the methodology used by each rating agency may be different and therefore have a different impact on firm performance across the rated firms.

In a related study, Spellman and Watson (2009) evaluate the claims made by GMI that their corporate governance ratings produced from 2003 onwards are useful to shareholders in assessing future firm performance during 2003 to 2008. Using a sample size between 1002 to 1742 listed firms for the study period, their findings suggest that the GMI ratings is statistically significant and positively associated with both past shareholder returns, accounting returns and future shareholder returns. They further noted that high and medium GMI portfolios significantly outperformed the low GMI scoring portfolio over the five year study period. Similarly, Daines *et al* (2010) examined whether commercially available corporate governance rankings provide useful information for shareholders for the 2005 to 2009 study period. Using the ratings produced by Accounting and Governance Risk

(AGR), ISS, GMI and TCL, the authors findings suggest that these ratings have either limited or no success in predicting firm performance or other outcomes of interest to shareholders. Specifically and unlike the ISS, GMI and TCL ratings, they find stronger and predictive evidence for the governance rating produced by AGR on both future operating performance and excess stock price returns.

Fundamentally, the governance index-performance relationship evidence from North America has provided mixed results which may be attributed to the way these indices are developed. In particular, studies in Canada have failed to provide any relationship between governance index and firm performance relative to the US where there is evidence of a positive and statistically significant association between the two in some cases. The inconsistent evidence in North America may be due to lack of code of best practices of which the sample firms' governance practices are benchmarked. Although, and as can be seen from the review, researchers have mainly used commercial rating agencies governance data, and in some cases the indices developed by GIM and BCF, the governance data from rating agencies are not used in this thesis for two reasons. First, there is no readily available data from rating agencies in Ghana where this thesis is based. Second, since this thesis intends to investigate the degree of compliance with the Ghanaian Code, employing the methodology used by these rating agencies, GIM and BCF who integrated corporate governance practices not based on code of best practices will not achieve the objective of this thesis. In particular, the subjective nature of the independent professionals involved in the corporate governance data gathering by the rating agencies may account for error and bias in relation to the firms included. As will be explained in chapter five, the development of the *GCGI* will be based on the degree of compliance with the Ghanaian Code from the Ghanaian listed firms' annual reports.

European studies

Due to the inadequate corporate governance data in Europe from the commercial rating agencies, very limited studies have been conducted on governance index-performance relationship compared with their North American counterparts where data on corporate governance variables are readily available from commercial rating agencies. In Europe, one of the first of these studies was conducted in Germany, where Drobetz *et al* (2004) investigated whether differences in the quality of firm-level corporate governance can also help to explain firm performance with a sample size of 91 listed firms from 1998 to 2002. They developed a corporate governance rating (CGR) using questionnaire survey based on the recommendations of the Germany Corporate Governance Code (GCGC) which can be voluntarily adopted by a particular firm's management. The dimensions incorporated in the CGR include corporate governance commitment, shareholder rights, transparency, management supervisory, board matters and auditing with Tobin's Q and MTBV used as performance measures. Consistent with GIM, the authors documented a positive relationship between CGR and firm performance. In other words, better corporate governance is highly correlated with better operating performance, higher stock returns and higher market valuation. Further, the study indicates that for the median firm a one standard deviation increase in the governance rating results a 24% change in the value of Tobin's Q.

By contrast, Bassen *et al* (2008) recent evidence in Germany suggests that compliance with the GCGC is significant and negatively related to firm performance measured by Tobin's Q. Unlike Drobetz *et al* (2004), the authors ranked 100 listed firms corporate governance practices based on the publicly available information such as annual report, declaration of conformity with GCGC, agenda of the general meetings, charter of the firm and its website

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during 2005. They however contend that three[12] of the eleven recommendations with the lowest compliance rates by the GCGC have no relationship with any firm performance variables (Tobin's Q, ROA, ROE, MTBV and stock returns) used in the study at all. But a significant positive (negative) association between four[13] (four)[14] of the recommendations was established. The differences in the findings of Drobetz *et al* (2004) and Bassen *et al* (2008) in the same country may be due to the methodology used to develop the governance index. In this respect, Drobetz *et al* (2004) used questionnaire surveys to gather the governance data while Bassen *et al* (2008) used the binary objective questions with great reliance on the publicly available corporate governance information for the development of the governance index. This suggests that there may be some measurement error or bias in the methodology used by one of the studies and this might have accounted for the inconsistent results.

In Switzerland, Beiner *et al* (2006) used a broad CGI and additional variables related to ownership structure, board characteristics and leverage to examine their relationship with firm performance. Using the same corporate governance dimensions and methodology as in the case of Drobetz *et al* (2004), their developed CGI is based on responses to a detailed questionnaire, which was largely based on the suggestions and recommendations of the Swiss Code of Best Practices with Tobin's Q as the firm performance measure. The findings support the widespread hypothesis

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[12] The recommendations with no relationship and firm performance include: (1) fixed and performance related compensation for supervisory board members, (2) disclosure of payments to the supervisory board individually or agencies shall be listed separately, and (3) the 90 or 45 days requirement of the publication of the firm's financial statements or interim reports at the financial year end.

[13] The recommendations with a positive relationship and firm performance include: (1) compensation of the management board shall be related to demanding and relevant comparison parameters, (2) disclosure of individual members of the management board compensation in the consolidated Financial statements, (3) An age limit for the members of the Management Board shall be specified, and (4) the components of the members of the Supervisory Board compensation shall be reported in the financial statements.

[14] The recommendations with a negative relationship and firm performance include: (1) Directors and Officers liability insurance with an agreed suitable deduction, (2) a cap on the members of the Management Board compensation shall be agreed for by the Supervisory Board, (3) The election of the members of the Supervisory Board shall take into account the activities of the enterprise, potential conflict of interest and age limit, and (4) The Chair and the Deputy Chair shall determine the compensation of the members of the Supervisory Board.

of a positive association between CGI and firm performance. In this respect, a one-point increase of the CGI causes an increase of the market capitalisation by roughly 8.5% on an average of a firm's asset book value. More importantly, the evidence of the positive association between the Swiss CGI and firm performance is consistent with their German study with the same methodology used to develop the CGI.

Following *comply* or *explain* philosophy in the UK, Arcot and Bruno (2007) investigated the effects of corporate governance on firm performance in the context of a flexible regulatory regime. The authors assumed that non-compliant with better explanation of the 1998 Combined Code are the same as compliant with the code. In this respect, they manually constructed a compliant and non-compliant index by hand collecting details of both compliance and explanation for non-compliance from 245 listed firms' annual report for the 1999 to 2004 study period. They reported that firms departing from best practices for valid reasons perform exceptionally well and outperformed the fully compliant ones. In other words, a mere compliance with the 1998 Combined Code provisions does not necessary result in better firm performance in the UK. This evidence supports the study in the US where Epps and Cereola (2008) caution investors that good governance ratings does not guarantee better firm performance.

Padgett and Shabbir (2008) also investigated the link between compliance with the UK code of corporate governance and firm performance from 2000 to 2003 inclusive. Taking a more holistic view of corporate governance, they developed a non-compliance index for a panel of FTSE 350 firms with a total shareholder returns (TSR), Q-ratio, ROA and ROE as performance measures in the study. The non-compliance index is based on the UK 1998 corporate governance code where 0 is a perfect compliance and 12 is complete non compliance for 478 total firm-year observations. Their objective was to look at the compliance of the code in a holistic approach to governance but not an isolated mechanism. They hold that compliance of the UK code matters, not a

box ticking exercise but a real change in the governance of listed companies for which investors are prepared to pay a premium for shares of those companies who have good governance structures in place. In particular, the findings suggest that the non-compliance index is inversely related to the TSR, implying that more compliant firms enjoy higher TSR in the sample firms.

Using the UK Combined Code 2003 for their study, Clacher *et al* (2008) investigated the impact of internal governance structures on firm performance measured by ROA and Tobin's Q during 2003 to 2005. The authors manually constructed a governance index from 63 FTSE 100 listed firms with board structure, disclosure, ownership, shareholder rights and compensation as its dimensions. The results suggest that corporate governance is an important determinant of firm performance in the UK. The authors further reported that firms with more formal governance structures, that is, a greater degree of compliance with the recommendations of the Combined Code 2003, receive a higher market valuation, have better performance and lower levels of investment expenditure. But it is suggested that not all governance attributes of the firm have the same impact on performance. In particular, and consistent with prior studies (Durnev and Kim, 2005; Zheka, 2006; Cheung *et al*, 2007), disclosure sub-index has a positive and significant relationship with firm performance, while ownership and remuneration policies improves firm performance but not significant. They noted that compliant with the Combined Code 2003 recommendations overall improves resource allocation efficiency and enhances shareholder value through lower information asymmetry and weaker agency problems.

In a further study in the UK, Shabbir (2008) also investigated how firms change their compliance with corporate governance practices over time with particular emphasis on the associated factors for these changes during 2000 to 2003. Similar to the work of Padgett and Shabbir (2008), the author developed a non-compliance index from 337 firm-year observations with

earning before interest and taxation (EBIT) and market returns as performance measures. The evidence indicates that the better the performance in the preceding year, the lesser the compliance with corporate governance in the current year and vice versa, implying that the UK firms take corporate governance seriously when they are underperforming. Specifically, firms became compliant following the decline in their market returns as well as operating performance for the study period 2000 to 2003.

In Greece, Toudas and Karathanassis (2007) investigated compliance of corporate governance effect on firm performance from 2004 to 2005 for 262 quoted firms on the Athens stock exchange. They developed a governance index based on questionnaire surveys and focus on whether shareholder rights are restricted or not by using a number of provisions promulgated by the European and the US regulators. In this respect, they classified the firms into democracies, semi-democracies and dictatorships and reported higher Tobin's Q ratio for democracies followed by semi-democracies and dictatorships. In particular, the evidence suggests that good corporate governance as measured by shareholder rights appear to be positively related to Tobin's Q as opposed to a significant negative association with abnormal returns for shareholder-friendly firms and manager-friendly firms.

Arguably, and unlike the North American studies discussed earlier where the commercial rating agencies governance data are available, the European governance index-performance relationship studies have focused on researcher-developed governance index. When compared the results with North America studies, there is more consistent evidence indicating a positive impact of better corporate governance on firm performance in Europe. This suggests that the objective of the development of code of best practices has been achieved in Europe relative to the North American counterpart. The differences in findings might not be surprising as the researcher-developed governance indices used in Europe relies greatly on a particular country's code on corporate governance. Given the unavailability of commercial rating

agencies governance data in Ghana, and following the European studies, this thesis employs the researcher-development governance index methodology with great reliance on the Ghanaian Code for the development of the *GCGI* from the Ghanaian listed firms' annual reports.

Other developed countries

Miyajima (2005) investigated the performance effects and determinants of corporate governance reform in Japan for the study period 2001 to 2002. Through the administration of questionnaires, the author created a corporate governance score (CGS) with 26 measures and found that a high CGS is associated with better performance. Also, grouping the sample size of 755 listed firms into quartiles according to the CGS, the findings suggest that the higher the CGS, the higher the average of Q (ROA) and the standardised Q (ROA). In their study in Hong Kong, Cheung *et al* (2007) examined whether there is a relation between corporate governance and firm performance. Using a sample size of 168 largest listed firms, they rated corporate governance practices based on the revised OECD 2004 principles of corporate governance with shareholder rights, equitable treatment of shareholders, disclosure and transparency, board responsibility and composition as its dimensions. Their evidence suggests that the CGI is positively related to firm performance but noted that disclosure and transparency sub-index drives the relationship with firm performance measured by ROE and MTBV.

Chen *et al* (2007) also tested the relationship between ownership/leadership structure and firm performance for firms listed in Taiwan from 1992 to 2007. The authors constructed a governance index based on four different aspects of a firm's corporate governance structure including CEO duality, size of the board of directors, managerial shareholdings and block shareholdings. Using 3233 firm-year observation, they reported that firms under strong governance measured by the index outperformed those under weak

governance. In Australia, Henry (2008) has provided evidence regarding the likely impact of the release of the principles of good corporate governance and best practice recommendations by the ASX corporate governance council in March 2003 using 116 listed firms for the study period 1992 to 2002. The author developed a governance index based on the recommendations by the ASX from listed firms' annual reports with Tobin's Q used as performance measure. Consistent with prior studies, he reported a statistically significant and positive association between the developed governance index and firm performance. Similarly, Cui *et al* (2008) investigated the relationship between CGS and firm performance during pre 2003 and post 2003 introduction of the ASX principles of good corporate governance and best practice recommendations. The authors developed a CGS based on the corporate governance ratings provided by the Horwath Report for both pre (2001) and post (2004) from the 100 largest listed firms with MTBV and ROA used as performance measures. Contrary to Henry (2008) evidence, their findings show no association between CGS and firm performance during 2001. But a positive association was established between CGS and firm performance during 2004, where a higher ranking is associated with better performance during 2004 and vice versa. The inconsistency of the findings between Henry (2008) and Cui *et al* (2008) may have been caused by the methodology used to construct the governance index and the number of years involved in each study.

Although the methodology used for the development of the governance index in other developed countries is based on a mixture of commercial rating agencies governance data and researcher-developed governance index, the evidence is more consistent with the European studies. As in the case of the European studies, most of the governance data used is based on a country-specific code of best practices which suggests that the objective of these codes of aligning shareholders and managers interests appears to be working where better governed firms perform better than their poorly-governed counterparts. As will be described in chapter five, and in line with the

European studies discussed earlier, the researcher-developed governance index based on the Ghanaian listed firms' annual reports will be adopted in this thesis. The next subsection reviews the governance index-performance relationship studies in developing countries.

4.3.2 Governance index-performance studies in developing countries

This subsection covers the governance index-performance relationship studies in developing countries separated into non-African and African developing countries.

Non-African developing countries

As explained in section 4.3, the literature on governance index-performance relationship studies began in a developing country with the seminal work of Black (2001) on his investigation of the relationship between corporate governance behaviour and market value for a sample of 21 Russian firms. Using a corporate governance rankings developed by a Russian investment bank and a value ratio of actual market capitalisation for these firms determined by an independent second Russian investment bank during 1999, he found that the correlation between firm performance measured by value ratio and governance rankings is statistically strong. The study also showed that a one standard deviation change in the governance rankings predicts a seven-fold increase in firm value. Even though the sample size was small, by using non parametric test, the results suggest that corporate governance behaviour has a powerful effect on market value in Russia where legal and cultural constraints are poor.

By contrast, Kravchenko and Yusupova (2005) used a larger sample size of 82 Russian listed firms during 2004 to investigate the relationship between corporate governance and firm performance measured by P/E and P/S ratios.

The index dimensions used include shareholder rights, role of stakeholder in corporate governance, transparency, disclosure and audit, board and remuneration to establish the relationship. Consistent with the earlier findings of Black (2001), they reported that investors tend to pay less for firms with lower corporate governance rating in Russia. This means that investors pay a higher price for firms with better corporate governance.

Black *et al* (2006a) criticised the use of cross-sectional data for previous studies and focused on time-series evidence from Russia from 1999 to 2005 in their investigation into the relationship between corporate governance indices and firm performance measured by Tobin's Q. Using two methods of estimation in the form of Ordinary Least Square (OLS) and Fixed Effects framework, they find economically important and statistically strong association between corporate governance and firm performance both in OLS and Fixed Effects framework but suggested large differences in coefficients and significant levels, including some sign reversals, between OLS and Fixed Effects specifications. They reported that the differences cast doubt on OLS results on most previous studies and maintained that the cross-sectional results may be unreliable.

The authors however noted that the way corporate governance practices are measured does matter in establishing the governance index-performance relationship. In particular, the developed governance indices used in Russia were measured by several institutions including Brunswick Warburg Investment Bank, The Troika Dialog Investment Bank, S&P, The Institute for Corporate Law and Governance and The Russia Institute of Directors (RID). However, the findings of the combined governance index of the four institutions and the individual indices show large differences between OLS and Fixed Effects specifications indicated earlier. For example, Brunswick index is insignificant related to firm performance using OLS but a positive and significant with firm fixed effects. By contrast, the RID index showed a positive and highly significant related to firm performance in OLS but

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insignificant and a negative with a firm fixed effects. The differences in these findings may be due to the measurement error or bias in the different methodology used by the rating agencies to measure corporate governance practices in Russia or the different estimators.

In their study on corporate governance and value in Brazil, Leal and Carvalhal-da-Silva (2005) created a corporate governance index (CGI) based on 24 binary objective questions for the study period 1998 to 2002 with a sample of 250 non financial firms for each year. The governance index dimensions used include disclosure, board composition and functioning, ethics and conflict of interest and shareholder rights with firm performance measured by Tobin's Q, ROA and dividend payout ratio (DPR). The authors would offer "yes" if asked whether good corporate governance practices increase firm performance in Brazil. They also reported that corporate governance practices levels have improved in Brazil and the CGI components demonstrate that Brazilian firms perform much better in disclosure than any other aspects of corporate governance. In this respect, the developed CGI maintains a positive, significant and robust relationship with firm performance. They noted that a worst-to-best improvement in CGI in 2002 would lead to .38 increases in Tobin's Q representing a 95% rise in the stock value of firm with average leverage and Tobin's Q ratio.

In Korea, Black *et al* (2006b) developed a Korean corporate governance index (KCGI) based on Korean Stock Exchange survey of 515 listed firms during 2001 to investigate whether corporate governance predicts firm performance or not. The KCGI dimensions used in their study include shareholder rights, board structure, board procedure, disclosure and ownership parity with Tobin's Q, MTBV and MTSV used as the market-based performance measures. The authors reported a strong connection between corporate governance and firm performance. Using OLS as a method of estimation, they hold that a worst-to-best change in KCGI predicts 0.47 increases in Tobin's Q. In another study of Korea, Black *et al* (2010) studied

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how corporate governance affects firm performance measured by Tobin's Q. Using panel data from 1998 to 2004 with the same KCGI dimensions as in their previous study, they documented that firms with higher scores of an overall KCGI have higher firm performance with the result being driven by board structure sub-index of the KCGI. They however were of the view that shareholder rights and board procedure sub-indices are not significantly associated with firm performance.

Kouwenberg (2006) investigated whether voluntary adoption of corporate governance code increases firm performance for the period 2000 to 2005 in Thailand. Using a sample size of 320 listed firms, the author constructed a CGI based on the Stock Exchange of Thailand ratings with shareholder rights, board structure and independence, disclosure and good governance policy as the index dimensions to investigate the relationship. The findings suggest a positive association between corporate governance and firm performance and that, a one standard deviation increase in a firm-level code adoption index is related to a 10% increase in firm value during the period 2003 to 2005. Even though compliance to governance code has been effective from accounting year 2002 onwards, only performance variables for the period of no code compliance was included in the study without the corresponding governance practices. This means that the code adoption index was created from the period where compliance to the code was mandatory and failed to justify whether compliance to the code initiated in 2002 has affected the code adoption index and hence firm performance. These weaknesses will be addressed in this thesis to establish whether the publication of the Ghanaian Code provision discussed in chapter three have had some impact on Ghanaian listed firms' performance.

Zheka (2006) examined the overall levels as well as separate elements of corporate governance impact on firm performance of Ukraine listed firms for three years from 2000 to 2002. The author used unique data on corporate governance choices for over 5000 firms and developed an overall Ukraine

corporate governance index (UCGI) with shareholder rights, transparency/information disclosure, board independence and chairman independence as its dimensions. The evidence suggests that corporate governance predicts firm performance in the transitional economy context. In this case, one point increase in the UCGI would result in around 0.4%-1.9% in firm performance. The author also documented a statistically strong effect of shareholder rights, transparency/information disclosure and board structure sub-indices on firm performance. Surprisingly, the chairman independence sub-index is not positively associated with firm performance.

Javed and Igbal (2007) examined the relationship between corporate governance indicators and firm value in Pakistan for the study period 2003 to 2005 following the introduction of the code of best practices. The findings broadly suggest that corporate governance matter in Pakistan but not all elements are important to firm performance. Whereas board composition and ownership and shareholding sub-indices influence firm performance, disclosure and transparency sub-index has no significant effect on firm performance. The authors contend that those adequate firm-level governance standards cannot replace the solidity of the firm and concluded that the low production and bad management practices cannot be covered with transparent disclosures. However, their evidence does not support the work of Durnev and Kim (2005) and Zheka (2006) where the transparency or information disclosure sub-index is found to have a statistically strong effect on firm performance. The differences in findings between these studies of each country may be attributed to the regulatory environment, the available corporate governance provisions which these firms adopt and the methodology used to develop the index. For example, Javed and Igbal (2007) manually developed their governance index based on the existing code of best practices in Pakistan, while Durnev and Kim (2005) relied on the CLSA rating agency to construct the governance index.

Ponnu and Ramthandin (2008) investigated the relationship between corporate governance and firm performance in Malaysia from 2005-2006. The assessment of corporate governance practices regarding the 100 listed firms used in their study is based on the level of disclosure made in the firms' annual reports with stock price returns and ROA used as performance measures. The evidence suggests a significant and positive association between corporate governance and firm performance when ROA is used as a performance measure. They however found insignificant and negative association between corporate governance and stock price returns but attributed this relationship to the fact that the market is always efficient, and so all information has been fully absorbed by the stock prices. Garay and Gonzalez (2008) studied the relationship between corporate governance and firm performance in Venezuela. They developed a CGI which is in the same spirit as Leal and Carvalhal-da-Silva (2005) who used 24 binary objective questions for their study but ended up with 17 questions that are applicable to the Venezuela situation. The dimensions of the CGI include information disclosure, board composition and performance, ethics and conflict of interest and shareholder rights with Tobin's Q, price-to-book value (PTBV) and DPR used as performance measures. Unlike Leal and Carvalhal-da-Silva (2005), their sample consisted of only 46 listed firms during 2004 but the results revealed that CGI is positively associated with firm performance. Consistent with prior studies, they showed that an increase of 1% in the CGI results in an average increase of 11.3% in DPR, 99% of PTBV and 2.7% in Tobin's Q.

Saxena (2009) examined the role of corporate governance and firm performance with a simple correlation analysis in India. The author's overall composite index of corporate governance (CICG) was based on data from a rating agency published in 2003 and economic value added per unit of capital employed (EVA/CE) as a performance measure. Using a sample size of 63 listed firms, they reported that CICG is positively associated with firm performance. As a further study of India, Balasubramanian *et al* (2010) investigated the relation between firm-level corporate governance and firm

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performance during 2006. The authors developed an Indian corporate governance index (ICGI) based on a questionnaire survey of 506 listed firms from which 301 firms were used in the study during 2006. Board structure, disclosure, related party, shareholder rights and board procedures were used as dimensions of ICGI with Tobin's Q and MTBV also used as performance measures. The findings indicate that there is a positive and statistically significant association between ICGI and firm performance. Consistent with Zheka (2006), shareholder rights sub-index is individually marginally significant and positively related to firm performance. However, this is not the case for other sub-indices such as board structure, disclosure, board procedure and related party. The finding of board structure sub-index of no significant association with firm performance contradicts other studies (Zheka, 2006; Black, *et al*, 2010). Notwithstanding the above evidence of a positive relationship between the overall governance index and firm performance, other studies in developing non-African countries have found either a negative relationship or no relationship between governance index and firm performance (Gruszczynski, 2007; Yan-Leung *et al*, 2008; Price *et al*, 2010). This may be due to the sample size used in a particular study and the country specific issues such as its regulatory environment in respect of whether the adoption of corporate governance is based on principles or rules.

For example, Gruszczynski (2007) relied on Polish Corporate Governance Forum (PCGF) and Polish Institute of Directors (PID) corporate governance ratings for the study in Poland. Using a small sample size of 25 and 34 listed firms for 2004 and 2005 respectively, the author attempts to find out the relationship between the governance ratings and firm performance provided findings that are mixed and disappointing. The ordered logit model used as a method of estimation hardly indicated any pattern of relationship between the governance ratings and firm performance measured by profitability, liquidity, activity and debt ratios. But using the activity ratios, the association between the ratings and firm performance showed significant and negative association between them. In this respect, the author attributed the

inconclusive results to mainly the small sample sizes used in the study for each year. However, this might not be the case for the inconclusive results since Black (2001) used in his study 21 Russian listed firms but found a statistically significant and positive association between corporate governance and firm performance measured by value ratio. Therefore the type of performance measures used in these studies and the method of estimation may be an important factor for the mixed findings.

Yan-Leung *et al* (2008) assessed the quality of corporate governance practices in order to evaluate whether corporate governance matters to Chinese listed firms performance during 2004. They developed a CGI based on the revised OECD 2004 principles of corporate governance with 86 questions (including sub-questions) categorised into shareholder rights, equitable treatment of shareholders, role of stakeholders, disclosure and transparency and board responsibility. Using a sample size of 100 largest listed firms, they reported no statistically significant association between CGI and firm performance measured by MTBV and Tobin's Q among firms in the sample. Further evidence suggests that firms with better corporate governance do not have higher performance. They however noted that the benefits of corporate governance appear not to have been fully incorporated into the firm performance measures of the Chinese listed firms during 2004.

In a further study as an improvement to the above, Cheung *et al* (2010) evaluated the progress of corporate governance practice in Chinese listed firms from 2004 to 2006. In this respect, they extended the study period used in their study in 2008 but with the same data and methodology and developed a CGI to measure the quality of corporate governance practices of the Chinese 100 listed firms. Their evidence suggests that the CGI of Chinese listed firms have improved from 2004 to 2006. Using fixed effects as a method of estimation, they reported a positive relation between the overall corporate governance practices and firm performance. This indicates that firms with better overall corporate governance practices tend to have higher

firm performance with the shareholder rights sub-index found to be the main force of the relationship. From the above studies in China, two important lessons can be learned from the findings. In this case, and as has been admitted by the authors in their 2008 study, the effect of corporate governance on firm performance might take a little longer than one year period before any realistic conclusions can be drawn on the relationship. Also, the estimation method used in a particular study might have an influence on the results. For example, the authors used different estimation methods in the two studies, thus OLS for the 2008 study and fixed effects for the 2010 study. The different application of the estimation methods might also have contributed to the findings of the two studies. This is evidenced in the work of Black *et al* (2006a) in Russia where large differences were found between the OLS and fixed effects results in the same study. As indicated earlier, they stated that the differences cast doubt on OLS results on most previous studies. This suggests that the two methods of estimation might provide different results within and between studies as in the case of Russia and China.

Price *et al* (2011) have also provided further evidence of no association between governance index and firm performance in Mexico. The authors examined the impact of governance reform on firm performance and transparency from 2000 to 2004 with a sample size of 107 listed firms. A researcher-developed governance index based on compliance data from the code of best practices disclosed annually by listed firms was used with transparency, board composition and audit committee as its dimensions for the study. They reported a significant increase in compliance with corporate governance during 2000 to 2004, indicating that Mexican firms view non-compliance as costly. As noted earlier, they however find no association between the governance index and firm performance and noted that monitoring mechanisms alone are not enough to cause fundamental change in the economic behaviour of Mexican listed firms. This evidence is consistent

with Yan-Leung *et al* (2008) who failed to establish any relationship between firms with better corporate governance and higher performance in China.

Fundamentally, two key issues are found in non-African developing countries literature. First, and similar to North America studies, over reliance on commercial rating agencies is eminent than the researcher-developed governance index found in Europe and therefore the results are mixed as in the case of North America. Second, relatively very few researchers relied on the available code of best practices specific to their country of study. This suggests that the governance provisions that were used to evaluate corporate governance quality may not be suitable in these countries. However, of particular interest to this thesis is the binary objective questions used by Leal and Carvalhal-da-Silva (2005) and latter followed in spirit by Garay and Gonzalez (2008). This thesis in employing researcher-developed governance index will follow the same spirit for the development of the *GCGI.*

African developing countries

Studies on governance index-performance relationship in African countries are limited. But, of particular interest to this thesis is the work of Abdo and Fisher (2007) in South Africa where they examined the impact of reported corporate governance disclosure on firm performance. The authors developed a corporate governance score (G-Score) with board effectiveness, remuneration, accounting and auditing, internal audit, risk management, sustainability and ethics as its dimensions for their study. With careful analysis of the principles outlined in the King II report, these dimensions were selected and used in their study. Using a sample size of 97 listed firms from 2003-2006, they reported a positive association between the G-Score and firm performance measured by share price returns. This implies that

investors place a premium on South African firms with good corporate governance practices than those with bad corporate governance practices.

Recently, Ntim (2009) has also provided further evidence of the adoption of the South African Code (King II Report) and its impact on firm performance for the study period 2002 to 2006. Of important interest to this thesis is in respect of the integration of the eleven specific governance mechanisms[15] and a developed South African Corporate Governance Index (*SACGI*) to investigate whether better-governed listed firms tend to perform better than their poorly-governed counterparts based on their annual reports governance data in the same study and context. Using a sample of 100 South African listed firms with a total of 500 firm-year observations and OLS regression estimate, the evidence suggests that there is statistically significant and positive relationship between the *SACGI* and firm performance measured by ROA and Tobin's Q, evidence supported by prior governance index studies (Gompers *et al*, 2003; Klapper and Love, 2004; Beiner *et al*; 2006; Cui *et al*, 2008; Padgett and Shabbir, 2008; Henry; 2008). By contrast, the results based on the specific governance mechanisms were found to be highly mixed regardless of the firm performance measure used. These results further support the notion that not all governance mechanisms are effective in improving firm performance, but it appears that developing a set of these mechanisms into an index is more effective in having a positive and statistically significant impact on firm performance.

In Ghana, there is no empirical evidence on the relationship between a developed governance index and firm performance apart from the limited studies on disclosure index and corporate governance practices. In this regard, Tsemanyi *et al* (2007) used disclosure scores to examine corporate governance practices of the Ghanaian listed firms. Using objective methodology, the authors created disclosure scores based on 36 items to

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[15] These eleven specific governance mechanisms include board diversity, frequency of board meetings, audit committee, remuneration committee, nomination committee, board size, CEO duality, percentage of non-executive directors, director share ownership, director share ownership squared and cubed.

measure corporate governance disclosure from a sample of 22 listed firms for the study period 2001 to 2002. They assessed the listed firms' disclosure scores from the available information in their annual reports with ownership structure, financial transparency and board and management process as its dimensions. The findings suggest that disclosure levels in Ghana are generally low with the average of 52% compared to the 60% suggested. In particular, the extent of disclosure among firms listed on GSE varies widely and ranging from 33% to 83% but recorded a positive change of disclosure scores from 2001 to 2002. This means that, while disclosure levels are generally low, some of the listed firms have made moderate improvements in terms of disclosure.

As an improvement to the Tsamenyi *et al* (2007) study, Bokpin and Isshaq (2009) extended the study period from 2002 to 2007 to examine the effect of corporate governance and disclosure on the foreign ownership of the firms listed on the GSE. Contrasting the study of Tsamenyi *et al* (2007), they used S&P transparency and disclosure items instead of 36 items used by Tsamenyi *et al* (2007) for the development of the transparency and disclosure index with financial disclosures, corporate governance disclosures and voluntary disclosures as its dimensions. Using a sample of 27 listed firms and a panel data methodology with unrelated regression approach, they reported a statistically significant interaction between corporate disclosures and foreign share ownership among the sample firms. Also, the results showed that the market value of equity influences corporate disclosure. In particular, the findings suggest an inverse relationship between foreign share ownership and corporate disclosures implying that the more foreign owners a firm has, the less the firm discloses. In other words, the less the firm discloses, the more it attracts foreign owners. This is not however the case for the relationship between foreign share ownership and the market value of equity where the findings show a statistically significant and a positive relationship. The study also suggests no association between foreign ownership and ROE.

As can be seen from African developing countries including Ghana, there are only two available governance index-performance relationship studies in South Africa but no study in any other African countries including Ghana where this thesis is based except the disclosure index studies which failed to link the index with firm performance. Although, the methodology used in Ghana for the development of the disclosure indices is similar in spirit with regard to S&P transparency and disclosure items, they are not used in this thesis because the items focus on corporate governance disclosure as well as actual corporate governance practices which will not help to achieve the objective of this thesis of investigating the degree of compliance with the Ghanaian Code and its impact on firm performance. As will be explained in chapter five, the development of the *GCGI* will be based on the recommendations of the Ghanaian Code relative to the listed firms' actual governance practices from their annual reports.

4.3.3 Comparative Governance index-performance studies involving developed and developing countries

This subsection presents comparative studies on a mixture of developed and developing countries as well as those of developed countries. The comparative governance index-performance relationships in a mixture of developed and developing countries have been studied by Klapper and Love (2004), Durnev and Kim (2005), Chen *et al* (2009) and Morey *et al* (2009). There are also other studies involving only developed countries with their governance index typically based on rating agencies governance data. These include those studied by Bauer *et al* (2004), Aggarwal *et al* (2007), Renders *et al* (2010), Bruno and Claessens (2010) and Ammann *et al* (2011).

With regard to a mixture of developed and developing countries comparative governance index-performance relationship studies, Klapper and Love (2004) used data on firm-level corporate governance ranking created by Credit Lyonnais Securities Asia (CLSA), an Investment Bank for 14 countries of

which 11 are from Asia, 2 from South America and 1 from Africa for the period 1999. The authors reported that firms in countries with weak legal systems on average have lower governance rankings in a sample of 374 firms. They noted that better governance is highly correlated with better firm performance measured by ROA and Tobin's Q, and this relationship becomes stronger in countries with weak legal systems. Also, the relationship becomes as twice as large and statistically more significant after adjusting for country fixed effects. Similarly, Durnev and Kim (2005) used CLSA ratings and S&P with a broader sample of 859 firms in 27 countries and have found that companies with better corporate governance and better disclosure standards have, on average, higher Tobin's Q and investments. The study reports that a 10 point increase (out of 100) in the CLSA corporate governance index increases a firm's value by 13.3%; while a 10 point increase (out of 98) in the S&P disclosure and transparency index increases a firm's market value by 16.3%. Recently, Chen *et al* (2009) examined the effects of firm-level corporate governance on the cost of equity capital and how the effect is influenced by country-level legal protection of investors among 17 countries of which 10 are from Asia, 4 from South America, 2 from Europe and 1 from Africa during 2001 to 2002. Based on the CLSA survey, they developed a CGI and reported that firm-level corporate governance has significant and negative effect on costs of equity capital in these countries. This implies that investors in these countries seem to ask for lower cost of equity from firms with good corporate governance in place, which presupposes that the reduced cost of equity can lead to an economically significant premium in firm performance.

Using a new dataset from AllianceBemstein monthly firm-level corporate governance for 21 countries of which 9 are from Asia, 5 from South America, 5 from Europe and 2 from Africa, Morey *et al* (2009) examined how changes in corporate governance ratings impact on firm performance for the 2002 to 2006 study period. Using OLS as a method of estimation, the findings suggest that improvements in corporate governance result in significantly

better firm performance. As reported earlier, and consistent with the findings of Klapper and Love (2004), there is a positive and significant association between corporate governance and firm performance measured by Tobin's Q and price-to-book ratio. They further examined whether improvements in country specific risk are associated with improvements in firm-level governance. In this respect, they find support for this idea that the majority of countries in the sample showed that lower country risk is associated with improvements in firm-level governance.

In the developed countries comparative studies, Bauer *et al* (2004) is one of the first to conduct a comparative study of 15 European countries to analyse whether good corporate governance leads to higher firm performance in Europe during 2000 and 2001. Using Deminor corporate governance ratings for firms included in FTSE Eurotop 300, the authors separated the analysis due to two currency areas into the UK and the European Monetary Union (EMU). They developed value weighted portfolios consisting of well-governed and poorly governed firms and compare their performance measured by NPM, ROE, Tobin's Q and stock returns. The authors however reported mixed evidence depending on firm performance measures used. In this respect, there is a positive relationship between corporate governance and the market-based performance measures (Tobin's Q and stock returns). But the relationship weakens substantially after adjusting for country differences. For example, the impact of corporate governance on firm performance measured by Tobin's Q is stronger in EMU countries than that of the UK. Whereas a 10% increase in the corporate governance rating of the EMU results in 0.14% increase in Tobin's Q, the time-series coefficient in the UK is statistically insignificant and close to zero. With regard to corporate governance and accounting-based performance measures (NPM and ROE), the findings suggest a negative relationship among EMU countries but do not provide any relationship between corporate governance and firm performance in the UK. Unlike the market-based performance measures, the findings remained the same after adjusting for country effect for EMU

countries, the results not being consistent with the work of Gompers *et al* (2003) in the US.

Similarly, Renders *et al* (2010) recently conducted a cross-European study among 14 European countries regarding the relationship between corporate governance ratings and firm performance for the 1999 to 2003 study period. Based on Deminor corporate governance ratings, they controlled for sample selection bias and endogeneity simultaneously by using OLS and 3SLS as methods of estimation. The findings suggest that corporate governance ratings have a highly significant and positive impact on firm performance measured by Tobin's Q, market-to-sales ratio, MTBV, ROA and ROE after controlling for sample selection bias and endogeneity simultaneously. Without controlling for these econometric problems, the relationship is insignificant or negative in some cases. This suggests that controlling for econometric problems is an important determinant of particular study findings. With respect to individual European countries, the evidence suggests that firms in countries with strong shareholder rights or extensive corporate governance recommendations have better corporate governance ratings but the impact on firm performance is smaller compared to the countries with weak shareholder rights. Given the potential problems of endogeneity in the study of the relationship between corporate governance and firm performance (Black, 2001), this evidence may have serious implications for a majority of prior studies who have not addressed these econometrics problems and may cast doubt on their results.

Aggarwal *et al* (2007) undertook a comparative study among 23 developed countries corporate governance practices in order to examine its relationship with shareholder wealth during 2005. Similar to Bauer *et al* (2004), they separated the sample into US firms (5,296) and foreign firms (2,235) to compare the governance practices. Using ISS corporate governance data, the authors developed a global governance index (GOV_{44}) with 44 attributes that are common for both US and foreign firms with board, audit, anti-takeover

and compensation and ownership as its sub-indices for the study. Their evidence suggests that firm-level governance of foreign firms is worse on average than the US firms and noted that 92% of the foreign firms have worse governance compared to US firms. The difference in compliance among US and foreign firms may be due to the rules-based versus principles-based approaches of corporate governance practised in these countries.

Further, Aggarwal *et al* (2007) also calculated a governance index gap based on the difference between the governance index of a foreign firm and the governance index of a comparable US firm, so that a firm with a positive governance index gap has better governance than its matching US firm. As a result, 8% of the foreign firms were adjudged to have a positive governance gap and the majority of these firms are either in the UK or Canada. In establishing the relationship between corporate governance and firm performance, they used the governance index gap to help explain whether the foreign firms perform better than the US counterpart. In this respect, the findings suggest that the value of foreign firms increases with the governance index gap implying that the foreign firms are rewarded by the markets for having better governance than their US peers. They however noted that the relationship is influenced by the board and audit committee independence sub-indices.

Following that, Bruno and Claessens (2010) also used ISS corporate governance data and the same 23 developed countries used by Aggarwal *et al* (2007) to conduct their multiple countries study but with a longer study period from 2003 to 2005. The authors developed three main indices including board committee index, entrenchment index and board independence index with Tobin's Q, ROA and MTBV used as performance measures. They reported that over monitoring and absence of flexibility in country regulations generate costs, harm managerial initiative, and lead to lower returns and valuations. However, the study provides consistent evidence that firms with better governance in the form of board

independence index and board committee index performed better in any legal regime among the 23 developed countries, the findings consistent with Aggarwal *et al* (2007) who earlier noted that their governance index-firm performance relationship is influenced by board independence and board committee sub-indices.

In contrast, Ammann *et al* (2011) investigated the relationship between firm-level corporate governance of 22 developed countries excluding US and firm performance based on a large and previously unused dataset from GMI governance ratings for the 2003 to 2007 study period. Using all the 64 attributes of corporate governance provided by GMI, they constructed two alternative addictive indices with equal weights attributed to the governance attributes and one index derived from principal component analysis. In all the three indices, they reported a strong and positive association between firm-level corporate governance and firm performance measured by Tobin's Q. Unlike the previous studies, their results are robust to different techniques used to construct the governance indices, a breakdown of the sample into both country and calendar year and dynamic panel general methods of moments (GMM) also used as a method of estimation. In this respect, they are of the view that better corporate governance practices are reflected in statistically and economically significant higher firm performance, and that for the average firm in the sample, the costs of the implementation of corporate governance mechanisms seem to be smaller than the benefits accrued to the firm.

Fundamentally, all the comparative studies reviewed have used commercial rating agencies governance data but the evidence is more consistent than the North America results that as well used the rating agencies governance data. This is not surprising because most of the countries included in the comparative studies come from developed countries other than US and Canada as well as developing countries. However, only South Africa has been consistently included in the comparative developed and developing countries

studies due to commercial rating agencies governance data availability in the country. As indicated earlier, the lack of commercial rating agencies governance data in Africa further supports the researcher-developed governance index methodology employed in this thesis.

Beyond looking at the specific governance mechanisms-performance relationship in the literature, a substantial body of literature reviewed earlier has considered the governance index-performance relationship as an emerging approach but with fairly mixed results. Although, the evidence is highly mixed in North America studies, it is more consistent in European Countries, other developed countries and developing countries. In particular, Abdo and Fisher (2007) and Ntim (2009) found a positive and statistically significant relationship between their governance index and firm performance in South Africa. In Ghana, only disclosure and transparency index have been developed to examine corporate governance practices among Ghanaian listed firms without linking it to firm performance (Tsamenyi *et al*, 2007; Bokpin and Isshaq, 2009). Arguably, and as indicated in chapter three, the Ghanaian Code recommends six main sets of good corporate governance practices, including board composition, audit committee, remuneration committee, shareholder rights, financial affairs and auditing and disclosure practices. The Ghanaian listed firms are expected to comply or provide explanation in any areas of non-compliance with the Ghanaian Code. As will be discussed in chapter five, the developed *GCGI* contains 36 requirements that cover all the six main areas of the Ghanaian Code included in this thesis. Given that the governance index-performance relationship studies in developed and developing countries provide positive and consistent results in countries with the prevalence of code of best practices than the rules-based approach counterpart, the sixth relevant hypothesis is operationalised in the following form:

Ho_5: **There is a significant positive association between the Ghanaian Corporate Governance Index (GCGI) and firm performance.**

Given that the previous two sections have provided prior empirical evidence on the governance-performance relationship based on regression estimates, the next section discusses the directors' opinions studies on corporate governance and firm performance.

4.4 DIRECTORS' OPINIONS STUDIES ON CORPORATE GOVERNANCE AND FIRM PERFORMANCE

The objective of the first two sections of this chapter was to focus on prior empirical evidence based on the regression estimates of the governance-performance relationships. This section discusses the studies on whether the adoption of corporate governance provisions is beneficial to firm performance from the company directors' point of view. Empirically, there is limited evidence with regard to the directors' opinion on the adoption of corporate governance provisions and its benefit to firm performance. However, it may be suggested that the directors of a particular firm assume the responsibility for the adoption of good corporate governance regardless of the jurisdiction in which a firm operates. Of particular interest to this thesis is to review the existing literature in order to ascertain whether directors value the adoption of corporate governance provisions as enhancing performance mechanisms or not.

In the UK, prior studies have looked into the directors' opinions on the adoption of corporate governance provisions and its benefit to firm performance. One of these studies is the work of CBI/Touche Ross (1995) who surveyed CEOs and chairmen of 347 listed firms to investigate whether the adoption of the Cadbury recommendations is beneficial to their firm's performance. In this respect, 90% of the respondents thought that the Cadbury recommendations have had no positive impact on their firms' performance. Similarly, Moxey *et al* (2004) sent questionnaires to 1,650 chairmen and finance directors of firms from the top 1000 listed firms by market value and assessed their opinions on corporate governance and

wealth creation. He reported that the response is skewed towards corporate governance having little influence on profitability, with 12% of respondents noting that corporate governance does not influence profitability at all, and only 2% viewing it as beneficial. The above results suggest that the directors of the UK listed firms who are responsible for the implementation of good corporate governance in their firms mostly do not consider the adoption of corporate governance provisions as beneficial to their firm performance. By contrast, the directors' opinion survey of the South African listed firms rated corporate governance high in contributing to their firm's performance (Jenkins-Ferrett, 2001). In particular, the findings suggest that 85% of the respondent said corporate governance is of *utmost important* to *important* in contributing to investors confidence in the firms, while 83% rated corporate governance as *utmost important* to *important* in contributing to their firm's performance. This indicates that the South African directors who are responsible for the implementation of good corporate governance in their various firms valued the adoption of corporate governance provisions as beneficial to their firms' performance.

With the introduction of SOX, Reed *et al* (2006) specifically assessed the perceptions of financial executives on whether privately-held firms not required to implement SOX have done so. The authors used a questionnaire survey approach with 161 respondents who suggested that SOX is an influential piece of legislation and see some positive benefits to their firms as a result of its implementation. Of particular interest to this thesis is an open-ended question that asked respondents to identify other benefits that could be derived from the voluntary implementation of SOX. Their findings suggest that private-held firms get better financing options, better credit opportunities and the opportunities to take the firm public following the implementation of some of the provisions of the SOX Act. This indicates that the cost of financing a particular firm's operations is expected to be lower and therefore give better performance.

In Ghana, the available evidence is the directors' opinions studies on the state of corporate governance practices[16]. In this respect, Ocran (2001) conducted a research consisting of completed 30 questionnaires from the CEOs and directors of companies selected from the Association of Ghana Industries, Ghana's Top 100 companies, companies under the state enterprises Commission and other institutions. Assessing the degree of compliance with the specific governance mechanisms, the results showed the following relevant practices which are central to this thesis. In respect of board composition, the findings show that 100% of the respondents from both the public sector and institutions have executive and non-executive members on the board. This is not however the case for the private sector where 20% of the respondents have executive and non-executive directors in place. The findings also indicate that 80% of the respondents from the public sector have their CEO and chairman positions separated relative to 20% who have the CEO acting as the chairman. By contrast, 50% of the respondents from the private sector and institutions have the two roles separated with the other half having one person for the two roles. Notably, 20% of the respondents indicate that their firms have no policy in place for separating the two roles.

With regard to board committees, the findings suggest that 80% of the respondents from both public sector and institutions acknowledged to work through board committees relative to 20% of respondents who have no committees in place. By contrast, 80% of the respondents in the private sector acknowledged not working through board committees relative to 20% of respondents who have committees in place. That notwithstanding, the findings failed to specify the type of board committees that are being put in place by these firms at the time of the research. Other areas investigated

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[16] It is worth noting that there is no available study on the directors' opinions on corporate governance and firm performance in Ghana.

include shareholder rights[17] and disclosure practices of which 75% of the respondents from the public sector acknowledged having some measures in place to allow shareholders to recognise their rights during AGM. In this respect, the remaining 25% in the public sector have the government as their major shareholder. Interestingly, 100% of the respondents from both private sector and institutions acknowledged to have such measures in place to enable shareholders recognise their rights. Concerning the disclosure practices, whether a statement of the board responsibilities in relation to the preparation of the financial statements included in the annual report and its subsequent publication was highly rated by institutions. Specifically, 100% of the respondents suggest to have complied with the statement and publish their accounts for each year, whereas 80% and 60% of respondents from the public and private sectors complied with the statement respectively.

Overall, the findings reveal that the concept of corporate governance has gained ground in Ghana, with the public sector spearheading it. It however noted that, the private sector is lagging behind and has some long way to go in order to fully embrace the concept of corporate governance. The survey also highlighted the importance of a fundamental framework for corporate governance and maintained that, corporate governance and its supporting framework should be relevant to the country's unique legal environment and cultural values. Arguably, and apart from CBI/Touche Ross (1995), Jenkins-Ferrett (2001), Moxey *et al* (2004) and Reed *et al* (2006) whose opinion studies have provided conflicting results, very little is known about those responsible for the implementation of good corporate governance and its influence on firm performance from the existing literature and in particular in Ghana. The mixed results and limited studies in the international context warrant further investigation into how directors' value corporate governance as beneficial to their firm's performance.

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[17] The respondents were asked whether they have measures such as the right on voting procedures, preparation of agenda for AGM, the decisions concerning the amendment to the statutes and the freedom to ask questions during the AGM.

Fundamentally, and as has been discussed in section 3.3 of chapter three, the Ghanaian Code provisions imposed on the Ghanaian listed firms are adopted based on the decisions of the board to comply or provide explanation for non-compliance with a particular provision to shareholders. To date, there is no available evidence regarding the Ghanaian listed firms' directors' opinions on the effective adoption of the Ghanaian Code other than the Ocran (2001) study on the state of corporate governance in Ghana discussed earlier, but it failed to ask directors whether implementing good corporate governance is beneficial to their firm's performance. Thus, given the mixed findings of the directors' opinions on the adoption of corporate governance and its impact on firm performance, this thesis determines whether the directors view the adoption of the Ghanaian Code provisions as beneficial to their firms' performance. As will be explained in chapter five, and given hypotheses one to six operationalised in this thesis, the directors' responses will be used to test these hypotheses in order to validate and complement the regression results from the Ghanaian listed firms' annual report data.

4.5 CRITICAL OBSERVATIONS FROM THE LITERATURE AND POTENTIAL CONTRIBUTIONS

This section provides critical observations from the literature reviewed and the thesis potential contributions. It identifies the limitations and the relevant gaps in the existing literature and explains how this thesis attempts to partially fill these gaps. In this respect, four main limitations can be identified from the literature reviewed as follows. First, prior empirical evidence may be limited by the type of governance data used in each study. For example, the specific governance mechanisms versus a set of governance mechanisms developed into a governance index or the directors' opinions on corporate and firm performance chosen for a particular study may significantly have impact on the research findings. In addition, some researchers relied heavily on a country-specific code of best practices on corporate governance,

whereas other researchers used general corporate governance principles to assess governance qualities of their sample firms, which could have a serious effect on the conclusion drawn on the research findings. This is very important because not all governance recommendations may be applicable to all jurisdictions and therefore using data based on corporate governance provisions not specific to a particular country's culture and legal framework can affect the research findings. Unlike prior governance-performance relationship studies that mostly use questionnaires and interviews to gather governance data in Ghana (Kyereboah-Coleman and Biekpe, 2006a; 2006b), the governance data in this thesis regarding the specific governance mechanisms and the development of the *GCGI* are collected directly from the annual reports of the Ghanaian listed firms. The findings from this governance data will also be validated through questionnaire administration from the directors of the same listed firms. Prior studies have not addressed this problem.

Second, prior empirical evidence can also be limited by the methodology used for the development of the governance index. In particular, a majority of the governance index-performance relationship studies relied heavily on commercial rating agencies governance data relative to the researcher-developed governance index. This raises questions about the uniformity of how the governance index should be developed and therefore the impact on the findings. Also, relatively few studies that focused on country-specific codes of best practices selectively ignored some of the provisions with the assumption that these provisions are not value relevant (Padgett and Shabbir, 2008; Henry, 2008). This provides serious doubt about the findings, suggesting that some of the governance mechanisms are more important than others. Although, the researcher-developed governance index approach has been criticised on the grounds of judgemental error and bias on the part of the researcher (Core, 2001), it is adopted in this thesis as Arcot and Bruno (2007) and Garay and Gonzalez (2008), that the methodology provides a useful approach for the development of a governance index.

Thirdly, prior empirical evidence is limited by the problems of endogeneity which is always an issue in governance-performance relationship studies (Black, 2001). As will be explained in chapter five, the problems of endogeneity occurs where the governance-performance relationship is jointly determined within the regression model because of an omitted variable, measurement error, or simultaneity (Wooldridge, 2003). As a result, corporate governance as an explanatory variable will be correlated with the error term and may have affected most of the previous governance-performance relationship studies to be inconsistent and biased. In this respect, relatively very few prior studies in the literature address the potential problems of endogeneity and in some cases without testing for its existence before addressing the problem (Agrawal and Knoeber, 1996; Weir *et al*, 2002; Bruno and Claessens, 2010). This raises questions about the reliability of the research findings. In this thesis, and as in the case of Cheung *et al* (2007) and Padgett and Shabbir (2008), the researcher will first test for the existence of endogeneity before addressing the problem. Finally, the use of different governance data sources in different studies limits the scope for comparison of research findings within the same study and context. In addition, comparisons across studies with different governance data impact on firm performance become difficult due to sample size, selection criteria as well as code versus non code-based studies. This thesis therefore uses multiple governance data[18] to study governance-performance relationship in the same study and context to allow for comparison of findings within this thesis.

Given the limitations from the existing literature and the proposals to improve them, this thesis partially fills the following four relevant gaps. First, and as explained in chapter three, it is almost a decade since the Ghanaian Code was introduced but no research to date has examined the degree of

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[18] For example, data on governance index and the specific governance mechanisms will be validated and complemented by the directors' opinions on corporate governance and firm performance.

compliance with its provisions and the impact on firm performance. In this respect, this thesis attempts to fill this gap by investigating the degree of compliance with the Ghanaian Code provisions directly collected from the Ghanaian listed firms' annual reports. Based on the development of the *GCGI* and its sub-indices, this thesis will help to determine the level of compliance with the Ghanaian Code provisions for the first time across Ghanaian listed firms. Empirically, assessing the degree of compliance with the Ghanaian Code provisions will provide an opportunity to significantly contribute to the existing corporate governance literature.

Second, governance-performance relationship studies have mainly focused on one type of governance data or overlooked the others within the same study based on either methodological choices or from a particular theoretical standpoint. This leaves an opportunity for this thesis to use multiple governance data in the same study and context in order to help determine whether data on specific governance mechanisms or the developed governance index or the directors' opinions on corporate governance and firm performance have likely influence on particular research findings. Employing the multiple governance data in the same study will also help to validate and complement the specific governance mechanisms and the developed governance index findings from the perspective of directors who are responsible for the implementation of good corporate governance practices. In this respect, more light can be shed on the application of the Ghanaian Code in this thesis and where possible it should be able to capture areas of which data on the specific governance mechanisms and the governance index may not be able to cover in the analysis.

Third, prior governance-performance relationship studies in Ghana have failed to address the potential problems of endogeneity and therefore their regression analysis may be inconsistent and biased. As result, this thesis with particularly emphasis on addressing these problems in Ghana provides an opportunity to considerably contribute to the existing literature. Finally, only

a few studies in the literature reviewed have incorporated pre and post adoption of a particular code on corporate governance to ascertain whether the adoption of these codes matter to firm performance or not. In this respect, there is no available study in developing countries and in particular Africa and the lack of evidence leave room for this thesis to provide a significant contribution to the existing literature. This thesis will particularly focus on pre and post adoption of the Ghanaian Code in order to investigate how the governance-performance relationship is impacted by the formal adoption of the Ghanaian Code provisions.

4.6   CHAPTER SUMMARY

This chapter has reviewed prior empirical studies on governance-performance relationships from the existing literature. Its objective has been on three main approaches to the study of corporate governance and firm performance. These approaches include the specific governance mechanisms, the developed governance index and the directors' opinions on corporate governance and firm performance. Fundamentally, prior studies have so far used one approach and disregarded the others within the same study based on either methodological choices or from a particular theoretical perspective. However, whichever approach used has led to mixed results between studies, thus a positive, negative and no relationship between corporate governance and firm performance. Arguably, the specific governance mechanisms impact on firm performance is considered to be more inconsistent than the other two approaches. Although, the evidence regarding the governance index-performance relationship is contradictory within the context of North America, it is more consistent in the European countries, other developed countries and developing countries. This consistent evidence could be attributed to the principles-based approach to corporate governance practised in most of these countries with the prevalence of the code of best practices. Also, while the governance index-performance relationship studies

are predominantly in North America, limited studies were found in Europe, other developed countries and developing countries where in Africa, only two studies were available for review in this thesis. The limited evidence regarding the governance index-performance relationship studies in Africa provides an opportunity in this thesis to make a considerable contribution to the existing literature by investigating the degree of compliance with the Ghanaian Code provisions across listed firms.

Further, the review indicates that prior corporate governance and firm performance studies have extensively employed data on the specific governance mechanisms and the governance index without validating or complementing the findings with the views of those who are responsible for the implementation of corporate governance. This offers an opportunity to extend prior studies by incorporating questionnaire surveys regarding directors' opinions on corporate governance and firm performance in this thesis to help validate and complement findings from the governance index and the specific governance mechanisms impact on firm performance. Given that prior studies have failed to address the potential problems of endogeneity in Ghana, it also provides an opportunity in this thesis to address these problems for the first time. Finally, only a few studies in the literature incorporated pre and post adoption of a particular corporate governance rules or code of best practices in their study to assess whether the changes matter to firm performance or not. In this respect, there is no study in developing countries and in particular Africa and the lack of evidence provide an opportunity for this thesis to make a substantial contribution to the existing literature.

The next chapter provides a discussion on data considerations and analysis procedures.

CHAPTER FIVE

DATA CONSIDERATIONS AND ANALYSIS PROCEDURES

5.1 INTRODUCTION

This chapter discusses data considerations and analysis procedures used in an effort to achieve the thesis objectives. Given that the thesis is focusing on pre and post adoption of the Ghanaian Code provisions, it is important to compile a suitable database for the specific governance mechanisms and the development of the *GCGI*, as well as the questionnaire data from the directors of the Ghanaian listed firms. In this respect, the thesis focuses on the Ghanaian listed firms from 2000 to 2009. Specifically, this thesis adopted simultaneous data triangulation methods to investigate whether the adoption of the Ghanaian Code provisions is beneficial to firm performance in Ghana. The remainder of the chapter is organised as follows. Section 5.2 discusses data, sample and the development of the *GCGI* as the main explanatory variable. Section 5.3 explains the dependent variables employed in this thesis. Section 5.4 accounts for the control variables adopted. Section 5.5 describes a panel data analytical framework and how the thesis will address the potential problems of endogeneity. Section 5.6 focuses on the questionnaire development and the analysis procedures of the directors' opinions on corporate governance and firm performance, while section 5.7 summarises the chapter.

5.2 DATA, SAMPLE AND THE DEVELOPMENT OF THE *GCGI*

5.2.1 Data and sample

This thesis uses multiple governance data to investigate whether the adoption of good corporate governance really matters to firm performance in

Ghana. Unlike prior studies that have focus on only one type of governance data such as the specific governance mechanisms or the developed governance index or the directors opinions on corporate governance to investigate whether the adoption of corporate governance is beneficial to firm performance, this thesis employs governance data on all the three types triangulated simultaneously as shown in Figure 5-1 below.

FIGURE 5-1: MULTIPLE GOVERNANCE DATA

GOVERNANCE INDEX DATA

SPECIFIC GOVERNANCE MECHANISMS DATA

DIRECTORS OPINIONS DATA

GOVERNANCE-PERFORMANCE RELATIONSHIP

SIMULTANEOUS DATA TRIANGULATION
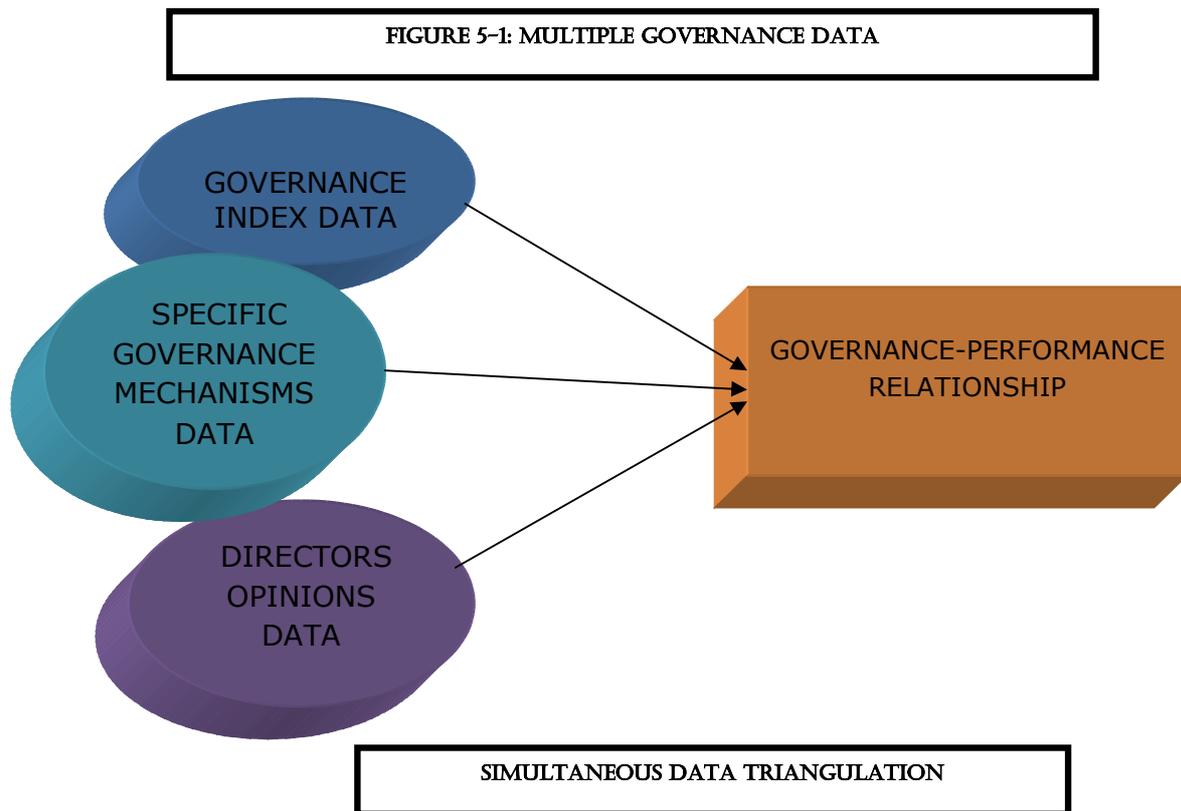
As can be seen from Figure 5-1, multiple governance data was employed to investigate whether the adoption of corporate governance is beneficial to firm performance based on the specific governance mechanisms, the governance index and the directors' opinions on corporate governance and firm performance at the same time. The multiple governance data adopted in this thesis is very important because no researcher to date has applied all the three types of data in the same study and context. Although Bhagat and Bolton (2009) and Ntim (2009) have used the specific governance and the

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developed index in the same study and context, the extension in this thesis will allow the regression results from the listed firms' annual report data to be validated by the directors' opinions on corporate governance and firm performance. Fundamentally, the methodological objective in this thesis is whether the use of the multiple governance data has the potential to affect the governance-performance relationship findings.

In this respect, data on the relationship between the specific governance mechanisms as well as the *GCGI* and firm performance is collected from the firms listed on the GSE. Firms listed on the GSE were selected because listed firms are widely used by prior governance-performance relationship studies reviewed in developed and developing countries (see chapter four). These firms cover the most economically important firms for data collection purposes and will make this thesis comparable to other prior studies. In addition, the Ghanaian Code is formally imposed on listed firms rather than non-listed firms. The listed firms are classified by the GSE according to twelve industrial sectors and as at the end of 2009, the total number of firms listed on the GSE were 35. The official list of the listed firms and the classified industrial sectors were directly obtained from the GSE *Fact Book* 2010 and the list was also confirmed against the list provided on the GSE official website at www.gse.com.gh accessed on January 2011. Table 5-1 presents the breakdown according to the industrial sectors.

Table 5-1: Breakdown of the Ghanaian listed firms by industrial sectors

Industrial Sectors	Number of firms	% of each sector
Agro Processing	3	8.6
Banking	9	25.7
Beverage	3	8.6
Distribution	1	2.9
Insurance	2	5.7
IT Solutions	2	5.7
Manufacturing	4	11.4
Mining	2	5.7
Petroleum	2	5.7
Paper Conversion Printing	3	8.6
Pharmaceutical	2	5.7
Vehicle Dealership	2	5.7
Total financial and non-financial firms	35	100

The sample size selected was based on a compromise between limitations of manual data collection and the need to have sufficient data to achieve the objectives of the thesis. As the study period was from the 31st December 2000 to 31st December 2009, a number of factors also dictated the selection of the final sample. An important point concerning statistical problem is survivorship bias (see below) during the study period where a specific part of the sample required to be selected as at the beginning of the study period disappears from the listing of the GSE over the study period. To ensure a representative analysis of corporate governance and firm performance over the study period, it is important to include firms delisted or newly listed firms during the study period.

As indicated earlier, the survivorship bias is a common form of a sample-selection bias where information on firms that are no more in existence or due to the data unavailability for a study period are excluded from the sample. In this thesis, corporate governance and firm performance data are analysed over a period of ten years regarding the specific governance mechanisms and the developed governance index. During this period firms entered and exited the GSE. To avoid focusing on firms that survive during the study period, corporate governance and firm performance data gathered were from firms listed on the GSE at the end of each financial year during the ten year period. For example, British America Tobacco Ghana was delisted in 2006 but the data from the financial year end 2000 to 2005 were included in the analysis. Also, Ghana Breweries Ltd and Guinness Ghana Ltd merged in 2006 and have changed to a new name as Guinness Ghana Breweries Ltd. In this respect, the corporate governance and firm performance data for the individual firms from the financial year end 2000 to 2005 and the merged firm from 2006 to 2009 were included in the analysis.

One option would have been to select firms that were listed on the GSE at the end of the study period. But this would have failed to account for firms that disappeared between 2000 and 2009. However, and as indicated earlier,

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all firms that were listed on the GSE at the end of each financial year end during the study period were selected. As shown in Table 5-2, the significant portion of the firms listed on GSE as at the end of 2000 increases over the study period from 21 in 2000 to 35 in 2009 with a total firm year observations of 283. This represent 97% of firms listed on GSE in each financial year. Further, and to be selected in the final sample, the annual reports of a particular firm that has been listed on the GSE during the study period must be available through either hand collection, postal delivery, the official website of the firm or via the GSE library. The corresponding share price and the financial accounting information must also be available in the GSE *Fact Books* 2005 and 2010. In this regard, corporate governance data was manually obtained from the firms' annual reports, while financial data was collected from the GSE *Fact Books* 2005 and 2010.

Data on the directors' opinions on corporate governance and firm performance to validate and complement the specific governance mechanisms and the governance index regression results was collected from the directors of the Ghanaian listed firms between May 2011 and October 2011. The prospective respondents for the questionnaire survey were mainly executive and non-executive directors from the same listed firms selected for the regression analysis. This is because these directors could influence the adoption of good corporate governance in their various firms and therefore their opinions will add to the findings of whether the adoption of the Ghanaian Code is beneficial to firm performance or not. In this respect, 70 directors were selected from 35 firms listed on the GSE as at the end of 2009 financial year end. The main reasons for selecting respondents from firms listed on the GSE are that they are required to comply with the Ghanaian Code or provide an explanation for non-compliance to their shareholders. In this respect, the CEO and the Chairman of the board were selected to represent the executive and non-executive directors from each of the 35 listed firms.

Table 5.2: A list of the names and the number of sample firms in each year

Company Symbol	Financial Year										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Firm-Years
ACI	1	1	1	1	1	1	1	1	1	1	10
AGC	1	1	1	1	0	0	0	0	0	0	4
AGA	0	0	0	0	1	1	1	1	1	1	6
ABL	1	1	1	1	1	1	1	1	1	1	10
ALW	1	1	1	1	1	1	1	1	1	1	10
AYRTN	0	0	0	0	0	1	1	1	1	1	5
BOPP	0	0	0	0	1	1	1	1	1	1	6
BAT	1	1	1	1	1	1	0	0	0	0	6
CAL	0	0	0	0	1	1	1	1	1	1	6
CFAO	1	1	1	1	1	1	1	1	1	1	10
CLYD	0	0	0	0	1	1	1	1	1	1	6
CMLT	1	1	1	1	1	1	1	1	1	1	10
CPC	0	0	0	1	1	1	1	1	1	1	7
EBG	0	0	0	0	0	0	1	1	1	1	4
EGL	1	1	1	1	1	1	1	1	1	1	10
ETI	0	0	0	0	0	0	1	1	1	1	4
FML	1	1	1	1	1	1	1	1	1	1	10
GCB	1	1	1	1	1	1	1	1	1	1	10
GBL	1	1	1	1	1	1	0	0	0	0	6
GGL	1	1	1	1	1	1	0	0	0	0	6
GGBL	0	0	0	0	0	0	1	1	1	1	4
GOIL	0	0	0	0	0	0	0	1	1	1	3
GSR	0	0	0	0	0	0	0	0	1	1	2
GWEB	0	0	0	0	0	1	1	1	1	1	5
HFC	1	1	1	1	1	1	1	1	1	1	10
MLC	1	1	1	1	1	1	1	1	1	1	10
MGL	0	0	0	1	1	1	0	0	0	0	3
MOGL	1	1	1	1	1	1	0	0	0	0	6
PBC	1	1	1	1	1	1	1	1	1	1	10
PKL	1	1	1	1	1	1	1	1	1	1	10
PZC	1	1	1	1	1	1	1	1	1	1	10
SCB	1	1	1	1	1	1	1	1	1	1	10
SG-SSB	1	1	1	1	1	1	1	1	1	1	10
SIC	0	0	0	0	0	0	0	0	1	1	2
SPL	0	0	0	0	1	1	1	1	1	1	6
SWL	0	0	1	1	1	1	1	1	1	1	8
TBL	0	0	1	1	1	1	1	1	1	1	8
TOTAL	0	0	0	0	0	0	1	1	1	1	4
TRANSOL	0	0	0	0	0	0	1	1	1	1	4
UNIL	1	1	1	1	1	1	1	1	1	1	10
UTB	0	0	0	0	0	0	0	0	1	1	2
Total	**21**	**21**	**23**	**25**	**29**	**31**	**31**	**32**	**35**	**35**	**283**

5.2.2 The development of the *GCGI* as the main explanatory variable

The main explanatory variable examined in this thesis to investigate the relationship between corporate governance and firm performance is the

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GCGI. The selection of this variable and its dimensions was based on prior studies and the Ghanaian Code provisions imposed on the Ghanaian listed firms. More importantly, the relevant dimensions that have been used in accounting and finance literature as well as the suitability of these dimensions in the context of Ghana were initially identified. The final selection of the dimensions used for the *GCGI* represent a set of the Ghanaian Code provisions imposed on the Ghanaian listed firms. This was also determined after the researcher had meetings with four institutional heads[19] involved in the introduction, enforcement and implementation of good corporate governance in Ghana to check for the reliability and validity of the binary objective questions used for the construction of the *GCGI*.

To date, two main approaches of developing governance index have been employed in the extant literature. The first approach has been the rating agencies that use ranking methodologies to evaluate the degree of compliance with corporate governance practices of firms which is usually conducted by independent professionals in the field of corporate governance. As a result, studies dominated by the North American researchers (e. g. Gompers *et al*, 2003; Klapper and Love, 2004; Brown and Caylor, 2006; Erthugul and Hedge, 2009) have relied on these agencies databases where data on corporate governance variables are readily available from such agencies (e.g. IRRC, CLSA, ISS, TCL, GMI, S & P) for the determination of a particular study governance index. However, the real practical problem with the governance data from the rating agencies is that no comparable datasets are available in many other countries and in particular Ghana. Besides, the subjectivity of the independent professionals in the field of corporate governance may account for errors and bias on the part of the firms involved in a particular agency's rankings. As indicated in section 4.3 of Chapter four, this approach is not adopted in this thesis.

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[19] The four institutions are the SECG, GSE, ICAG and the Institute of Directors-Ghana

The second approach has been the researcher-developed governance index where researchers manually construct their governance index for a particular firm based on the publicly available source of corporate governance information such as a firm's annual reports (e.g. Leal and Carvalhal-da-Silver, 2005; Arcot and Bruno, 2007; Ponu and Ramthandin, 2008; Garay and Gonzalez, 2008, Bassen *et al*, 2008; Price *et al*, 2011) or based on a questionnaire survey by the researchers (e.g. Drobetz *et al*, 2004; Beiner *et al*, 2006; Miyajima, 2005; Toudas and Karathansis, 2007). However, this approach also has some limitations regarding the researcher being vulnerable to judgemental errors and bias (Core, 2001) as well as the likely labour intensive task involved with respect to the gathering of the corporate governance information from the firms' annual reports. Notwithstanding these limitations, this thesis adopts the researcher-developed governance index approach for many reasons. First, and as explained in section 4.3 of chapter four, there is no corporate governance data readily available from any rating agencies in Ghana where the specific corporate governance practices have been used to assess the degree of compliance with corporate governance among Ghanaian listed firms. Second, the rating agencies methodologies are standardised in such a way that it might not be applicable to the Ghanaian situation. Accordingly, all of the corporate governance information used for the development of the *GCGI* comes from the annual reports of the selected Ghanaian listed firms.

The traditional approach of using annual reports was preferred as the sources of corporate governance information for the development of the *GCGI*. Fundamentally, the annual reports are considered to be the common communication instrument employed by firms to disclose relevant information regarding corporate governance practices (Healy and Palepu, 2001). In addition, the listing requirements of the GSE and the SECG require all listed firms to disclose certain information in relation to corporate governance practices in their annual reports. In view of this, the development of the *GCGI* is exclusively based on corporate governance

information that Ghanaian firms provide in their annual reports. In particular, the firm's annual reports as the source of the corporate governance information is also consistent with prior governance index-performance studies which can facilitate direct comparison with their findings (e.g. Leal and Carvalhal-da-Silver, 2005; Arcot and Bruno, 2007; Ponu and Ramthandin, 2008; Garay and Gonzalez, 2008; Bassen *et al*, 2008; Price *et al*, 2011).

The *GCGI* is developed by scoring each aspect of compliance with the Ghanaian Code provisions disclosed in the firm's annual report. A similar method has been used by prior studies where binary objective questions were used to score the degree of compliance with corporate governance (Gompers *et al*, 2003; Leal and Carvalhal-da-Silver, 2005; Padgett and Shabbir, 2008; Henry, 2008; Garay and Gonzalez, 2008). This scoring method involves assigning '1' point for compliance with each aspect of the Ghanaian Code provisions complied and disclosed in the firm's annual report or '0' otherwise. The corporate governance provisions included in the *GCGI* are solely based on the Ghanaian Code with six broad sets of corporate governance best practices that Ghanaian listed firms are required to *comply* or provide explanation for non-compliance. With this scoring method, a firm's developed governance index in a particular financial year end can vary between 0 and 36, with 0 indicating perfect non-compliance and 36 indicating complete compliance.

In this respect, the final 36 binary objective questions categorised into six comprehensive dimensions for each firm constitute the developed *GCGI*. These dimensions include: (1) board composition; (2) audit committee; (3) remuneration committee; (4) shareholder rights; (5) financial affairs and auditing; and (6) disclosure practices. Appendix 1 shows the six dimensions and their operationalisation. However, and while Gompers *et al* (2003) focused on only shareholder rights as their index dimension; Padgett and Shabbir (2008) who relied on the UK 1998 Combined Code also developed

their non-compliance index on only board of directors with twelve provisions, entirely disregarding the other dimensions such as accounting and auditing, internal audit and shareholder rights. Equally, Henry (2008) developed a governance index with particular emphasis on only eight provisions of the 2003 ASX Code, proposing that the other provisions may not be value relevant. In contrast, the six dimensions of the constructed *GCGI* are broader and equally distributed compared with much of the prior studies (e.g. Leal and Carvalhal-da-Silver, 2005; Cheung *et al*, 2007; Abdo and Fisher, 2007; Garay and Gonzalez, 2008; Yan-Leung *et al*, 2008).

Arguably, the developed *GCGI* fails to include a nomination committee experienced worldwide as this has not been provided by the Ghanaian Code for firms to *comply* or provide explanation for non-compliance. In this respect, the directors' opinions on corporate governance and firm performance investigation will address this problem. In practical terms, the six dimensions of the developed *GCGI* replicated the original Ghanaian Code provisions. This approach is in line with the previous studies that used similar national or international codes on corporate governance practices (Germany Corporate Governance Code, 2000; Swiss Code of Best Practice, 2002; OECD Principles, 2004; King Report, 2002; UK: Combined Code, 1998; Combined Code, 2003; Australia Code of best practice, 2003) in the development of their governance indices (Drobetz *et el*, 2004; Beiner *et al*, 2006; Cheung *et al*, 2007; Abdo and Fisher, 2007; Arcot and Bruno, 2007; Clacher *et al*, 2008; Henry, 2008).

It is worth noting that the development of the *GCGI* has a lot of benefits as opposed to the use of a specific governance mechanism. As advocated by Brown and Caylor (2006), the index considers a broader scope of governance practices, allows coverage for more firms as well as reflecting the current changes of the corporate governance environment. This means that a well developed governance index will allow for an evaluation of the effectiveness of corporate governance practices in a particular country or across countries

and how firms have applied the existing code of best practices on corporate governance. Consistent with the accounting and finance literature, the methodology also has the advantage of transparency and is easily reproducible as reported by Gompers *et al* (2003). Through the use of the binary objective questions, the problem of subjectivity in the case of qualitative method could be reduced since concepts of governance practices could be quantified for firms and compared in order to determine the ones with good governance structures. However, there are some limitations surrounding the development of the governance index. In particular, the development of the index may fail to capture all appropriate governance variables. Also in view of what constitute good corporate governance practices to one firm may not be the same for another firm depending on each firm's perception on the existing corporate governance practices. Arguably, it is appropriate to develop a corporate governance index in the case of Ghana since little is known about the effectiveness and the degree of compliance with the Ghanaian Code introduced in 2003. Moreover, governance variables based on questionnaire surveys and interviews may not reflect the actual practices during pre 2003 and post 2003 adoption of the Ghanaian Code as in the case of Kyereboah-Coleman and Biekpe (2006a, 2006b) and Kyereboah-Coleman and Amidu (2008).

To account for the effect of the specific governance mechanisms which may individually have an impact on firm performance instead of the index, this thesis also employs CEO duality (*CEODUAL*), board size (*BODSIZE*), proportion of non-executive directors (*PNEDs*), the existence of audit committee (*AUCOM*) and a remuneration committee (*RECOM*) as additional explanatory variables. Table 5-3 presents the measurement of the additional explanatory variables based on the Ghanaian Code provisions.

Table 5-3: Measurement of the additional explanatory variables

Variable Name	Acronym/Code	Operationalisation of the variable
CEO Duality	CEODUAL	A binary number of '1' if the CEO also holds the position of chairman or '0' if both positions are separated
Board Size	BODSIZE	The total number of directors on the board of a firm at the end of each financial year
Proportion of NEDs	PNEDs	The number of NEDs divided by the number of directors on the board of a firm at the end of each financial year
Audit Committee	AUCOM	A binary number of '1' if a firm has an audit committee in place at the end of each financial year or '0' if otherwise
Remuneration Committee	RECOM	A binary number of '1' if a firm has a remuneration committee in place at the end of each financial year or '0' if otherwise

5.3 DEPENDENT VARIABLES (FIRM PERFORMANCE)

The empirical evaluation of the relationship between corporate governance and firm performance necessitates the selection of suitable firm performance measures for objective analysis. Even though there has been no consensus on which firm performance measures are more appropriate (Cochran and Wood, 1984; Dalton *et al*, 1998; Ittner and Larcker, 2003), prior studies evaluating the relationship between corporate governance and firm performance have traditionally used various firm performance measures covering: return on investment (Rechner and Dalton, 1991; Boyd *et al*, 1997), *ROE* (Donaldson and Davis, 1991; Baliga *et al*, 1996; Labelle, 2002; Cheung *et al*, 2007; Epps and Cereola; 2008), earning per share (Pearce and Zahra, 1992), *ROA* (Daily and Dalton, 1993; Laing and Weir, 1999; Core *et al*, 2006; Larcker *et al*, 2007; Kyereboah-Coleman and Amidu, 2008; Price *et al*, 2011), Tobin's Q (Yermack, 1996; Weir *et al*, 2002; Gompers *et al*, 2003; Brown and Caylor, 2006; Bhagat and Bolton, 2009; Bozec *et al*, 2010), stock returns (Brickley *et al*, 1997; Bhagat and Bolton, 2008; Fodor and Diavatopoulos, 2010), price earnings ratio (Faccio and Lasfer, 1999; Sanda *et al*, 2010), sales growth (Kouwenberg, 2006; Erthugul and Hedge, 2009), economic value added (Saxena, 2009) and net profit margin (Bauer *et al*, 2010). These firm performance measures used in the existing literature can

be grouped into accounting-based and market-based firm performance measures. In this respect, firm performance measures from the perspective of insiders (management) and outsiders (investors) of a particular firm is needed for the purpose of this thesis. In particular, Black *et al* (2006a) are of the view that insiders and outsiders value firm performance differently. As a result, this thesis used accounting-based measures of *ROA* and *ROE* as indicators to capture the value effects of corporate governance mechanisms from the point of view of insiders, while the market-based measure of *Tobin's Q* is used to demonstrate firm valuation resulted from effective governance mechanisms from the perspective of outsiders. It is important to note here that these firm performance measures are used for both the specific governance mechanisms and the developed governance index in this thesis. Subsections 5.3.1, 5.3.2 and 5.3.3 present the definitions of the selected firm performance variables and how they are measured.

5.3.1 Return on assets (ROA)

ROA is defined in this thesis as operating profit after tax at the end of each financial year divided by book value of total assets for the same period (Pi and Timme, 1993; Haniffa and Hudaib, 2006). As indicated earlier, *ROA* has been used in numerous studies and represents what a particular firm's management has achieved at the end of each financial year with the given resources in the form of assets. According to *agency theory*, managers are likely to exploit the available resources to their own interest, leaving less return to shareholders. Thus, *ROA* is a measure of operating performance directly related to the earnings management has generated from the efficient use of a firm's assets, which effectively belong to shareholders. The higher *ROA* indicates efficiency on the part of management's ability to use firm's assets to maximise shareholders investment given effective corporate governance mechanisms in place. In contrast, lower values of *ROA* suggest less effective management and governance mechanisms in place. However,

the reliance on *ROA* as an accounting-based firm performance measure has been criticised on the grounds that the accounting earnings used may not reflect economic earnings and the book value of assets may not reflect the market values (Pi and Timme, 1993). This means that the accounting earnings and the book value of assets under the control of management may be subjected to managerial manipulations which could result in overstatement of earnings and understatement of assets due to changes of accounting policies relating to depreciation, inventory valuation, treatment of certain revenue and expenditure.

Notwithstanding these related weaknesses, *ROA* is preferred in this thesis because of its ability to eliminate the potential problem of size which effectively allows for straightforward comparison across firms (Lev and Sunder, 1979). Beside, other competing accounting based firm performance measures indicated earlier may not be reliably measured as in the case of *ROE*. For example, a drawback of *ROE* is that the higher level of debt could affect the level of *ROE* and this may not accurately reflect the efficiency of management (Cui *et al*, 2008). In this case, *ROA* is not influenced by the capital structure of a particular firm and therefore considered to be a more reliable firm performance measure. Also, Core *et al* (2006) use *ROA* as firm performance measure and find a negative and significant association with G-Index, evidence that is contrary to Gompers *et al* (2003) who could not establish a similar relationship when using ROE as firm performance measure. Hence, it is suitable to use *ROA* in this thesis. The data on the operating profit after tax and the book value of total assets are collected from the GSE *Fact Books* 2005 and 2010 during the study period.

5.3.2 Return on equity (ROE)

As an alternative to *ROA*, *ROE* is also used in this thesis as an accounting based firm performance measure to determine management's ability to generate returns for shareholders. Following the work of Baliga *et al* (1996) and Cheung *et al* (2007), *ROE* is defined in this thesis as operating profit after tax divided by book value of equity at the end of each financial year. Like the *ROA*, the higher the value of *ROE*, the more effective the governance mechanisms and the better the management's ability to generate returns for shareholders' investment of the firm. In contrast, the lower the *ROE*, the less effective the governance mechanisms and the greater management's inefficiency to generate returns for shareholders. As has been explained above, a drawback of *ROE* as firm performance measure is the influence that the level of debt of a particular firm may have on its computation. Also, the operating profit after tax and the book value of equity are based on the judgement of management and therefore may be subjected to managerial manipulations regarding overstatement of earnings and understatement of shareholders equity. Above all, different levels of debt may not allow for common comparison across firms since individual firms may have different capital structures.

Nonetheless, the conflicting evidence of Core *et al* (2006) and Gompers *et al* (2003) using the same G-Index but with different accounting based firm performance measures (ROA and ROE) necessitate an attempt in this thesis to assess the robustness of the findings against both *ROA* and *ROE* as accounting based firm performance measures. Therefore, it is appropriate to use *ROE* in this thesis. The data on the operating profit after tax and the book value of equity are collected from the GSE *Fact Books* 2005 and 2010 during the study period.

5.3.3 Tobin's Q (Q-ratio)

Tobin's Q is defined in this thesis as the market value of total assets divided by the book value of total assets, where the market value of total assets is measured by the market value of equity plus the book value of total assets minus the book value of equity (Gompers *et al*, 2003; Klapper and Love, 2004; Garay and Gonzalez, 2008). This firm performance measure from the point of view of outsiders' valuation of the firm represents an approximation of the original Tobin's Q, which is defined as the ratio of market value of debt and equity of the firm to the replacement value of the firm (Nor *et al*, 1999). But, due to the computational difficulties in relation to the market value of debt and the replacement cost of the firm in the context of Ghana and as experienced in the case of Malaysia (Nor *et al*, 1999) and Nigeria (Kajola, 2008; Sanda *et al*, 2010), this thesis follows Klapper and Love (2004) for the computation of the modified *Tobin's Q*, where the market value of total assets is divided by the book value of the total assets of the firm at the end of each financial year. As in the case of *ROA* and *ROE*, a higher *Tobin's Q* indicates more effective governance mechanisms and the better outsiders' perception of the firm's performance. In contrast, the lower *Tobin's Q* suggests less effective governance mechanisms and a greater managerial control.

Although, *Tobin's Q* has been used extensively as a firm performance measure in the extant literature (Mocrk *et al*, 1988; Yermack, 1996; Kiel and Nicholson, 2003; Core *et al*, 2006; Brown and Caylor, 2006; Renders *et al*, 2010, amongst others), it has also been criticised for using accounting variables prepared under historical accounting (Padgett and Shabbir, 2008), which appears to be subjected to managerial manipulations levelled against the computation of *ROA* and *ROE*. For example, the total book value of assets has been used for the approximation of the replacement cost of a firm's total assets (Nor *et al*, 1999; Sanda *et al* 2010) and that could lead to suffer a similar drawback of *ROA* in relation to undervaluation of assets. Arguably,

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and as in Kyereboah-Coleman and Biekpe (2006a) and Sanda *et al* (2010), the *Tobin's Q* is a useful market based firm performance measure to use in this thesis due to data limitations in the context of Ghana. Besides, and as has been indicated above, *Tobin's Q* (hereafter Q-ratio) has been extensively used for empirical research and that makes the findings of this thesis more valid. The data on the market value of total assets and the book value of total assets are collected from the GSE *Fact Books* 2005 and 2010 during the study period.

5.4   CONTROL VARIABLES

In order to identify the specific effect of corporate governance on firm performance, it is necessary to include control variables in order to limit potential omitted variable bias. These control variables are not confined by corporate governance mechanisms in affecting firm performance. To mitigate for the omitted variable bias, this thesis employed appropriate control variables that are potential determinants of corporate governance as well as firm performance. This approach is integrated into the design of the current thesis, but the selection of control variables is dictated by the extant literature and data availability. In the regression models, four control variables were used including gearing (*GEAR*), firm size (*SIZE*), growth opportunity (*GROWTH*) and firm age (*AGE*). However, there may be other likely control variables that may affect firm performance and corporate governance but are not captured in this thesis due to unavailability of data in the context of Ghana. The rationale for each of these control variables included in the regression models and their measurement is described below.

Gearing: Gearing can influence both corporate governance and firm performance. Whereas debt can act as self-enforcing governance mechanism and force management to generate cash to pay interest and capital obligations (Gillian, 2006), firm performance may be affected through a

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change in cost of capital. Following Klapper and Love 2004, Black *et al* (2006a), Garay and Gonzalez (2008), Bozec *et al* (2010), amongst others, this thesis controlled for gearing which is defined as the ratio of total debt to capital, where capital is the sum of total debt and equity. According to Rajan and Zingales (1995), this approach to the measure of gearing focuses on the capital employed and best represents the effects of past financing decisions*.*

Firm size: The existing literature suggests that firm size is positively associated with superior corporate governance practices (e.g. Jensen, 1986; Beiner *et al*, 2006). In particular, larger firms may attract greater public scrutiny, and therefore size may affect the choice of their corporate governance practices (Durnev and Kim, 2005). But, Cheung *et al* (2007) is of the view that larger firms tend to have lower firm performance measures such as ROA and MTBV. In line with prior corporate governance studies (e.g. Shin, 2000; O'Sullivan, 2003; Core *et al*, 2006; Cheung *et al*, 2007; Henry, 2008), firm size is controlled in the regression models and measured as the natural log of the book value of a firm's total assets at the end of its financial year.

Growth opportunities: It is suggested that faster growing firms may have higher valuation, as they are expected to receive better future firm performance (Klapper and Love, 2004). Equally, faster growing firms may also differ from slow growing firms with regard to corporate governance practices (Black, *et al*, 2006a). Following Weir *et al* (2002), Gompers *et al*, 2003, Drobetz *et al*, 2004, Haniffa and Hudaib (2006), amongst others, this thesis controlled for growth in the regression models and measured as the percentage of the difference between current year's sales and previous year's sales divided by the previous year's sales of a firm at the end of its financial year.

Firm age: Firm age is another important control variable that needs to be considered in this thesis. According to Black *et al* (2006a), corporate

governance practices of older firms may differ from their younger counterparts. Moreover, age may also be connected with firm performance, as its profitability is expected to rise and then fall at the maturity stage (Cui *et al*, 2008). In line with the likely effects of firm age on corporate governance as well as its performance, and following Shin and Stulz (2000), Gompers *et al* (2003), Arcot and Bruno (2007) and Bozec *et al* (2010), amongst others, this thesis controlled for firm age in the regression models and measured it as the number of years since a particular firm's incorporation to the end of 2009 financial year.

5.5   A PANEL DATA ANALYTICAL FRAMEWORK AND ENDOGENEITY

This thesis employs a panel data analytical framework to investigate the relationship between the specific governance mechanisms as well as the *GCGI* and firm performance[20] with a proposal to address the potential problems of endogeneity in chapter nine. In this case, the method of analysis is that of multiple regressions and the method of estimation may be pooled ordinary least squares (OLS), random effects or fixed effects as described later in this section. In a panel data set, the regression analysis with both a spatial and temporal dimension is appropriate. According to Mills (1999), the spatial dimension in a panel data set is a composite of the cross section dimension and in this case consists of the Ghanaian listed firms in this thesis. In contrast, the temporal dimension in this thesis relates to a number of observations of a set of variables representing these firms over a particular period of time. As indicated earlier, data for 2000 to 2009 on corporate governance practices and firm performance measures was collected for this thesis and therefore covers a period of ten years. Initially, the panel data regression model in its general form was estimated as follows:

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[20]It is worth noting that a panel data analytical framework adopted in this thesis is consistent with prior governance-performance relationship studies by Klapper and Love (2003), O'Sullivan (2003), Durnev and Kim (2005), Kyereboah-Coleman and Biekpe (2006a), Kajola (2008), Henry (2008), amongst others.

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \ldots\ldots + \beta_k X_{kit} + u_{it} \ldots\ldots\ldots\ldots\ldots (1)$$

Where:

- Y_{it} is dependent variable
- X_{it} represents explanatory variable
- $i = 1\ldots\ldots, N$ firms
- $t = 1\ldots\ldots, T$ time periods
- β_0 represents the constant term
- β_1 is the coefficient of the explanatory variables
- u_{it} represents the error term

The error term can further be decomposed into two components in the form of a firm-specific error v_i and an idiosyncratic error[21] ε_{it}. Thus:

$$u_{it} = v_i + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots.. (2)$$

However, and depending on the behaviour of the error term u_{it} and whether the explanatory variable is serially correlated with the components of the error term v_i and ε_{it} would determine the empirical model specification. Fundamentally, there are three standard panel data regression models that arise from the general model described in equation (1) above with specific assumptions in relation to the explanatory variables, the properties of the error term, and the association between the explanatory variables and the error term. In addition, further assumptions need to be made regarding the variability of the regression coefficient across firms. In this respect, and as has been indicated earlier, a panel data regression model in this thesis may be estimated by pooled OLS, random effects or fixed effects and are discussed as follows:

(i)   Pooled OLS assumes constant coefficients, that is, referring to both intercepts and slopes. In the event that there is neither a

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[21] It is important to note that the idiosyncratic error term in panel data changes over time and across firms.

significant firm-specific effect nor significant temporal effects, it could be possible to pool all of the data and run a pooled OLS regression model. Thus, the typical assumptions of constant variance and uncorrelated observations must continue to hold. However, this model is not appropriate if t, the time period is small (Gujarati, 1995). In this thesis the Pooled OLS regression is estimated in the following general form:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + u_{it} \dots\dots\dots\dots\dots (3)$$

Basically, the estimated Pooled OLS regression will be biased because of unobserved heterogeneity (X_{it} and u_{it} are correlated). But the bias may be lower because the Pooled OLS regression relies on between firm comparisons as well as within variation compared to the cross-sectional OLS regression.

(ii)   A random effects model assumes that the unobserved differences are not correlated with any of the explanatory variables. That is, v_i are treated as random constant terms (Greene, 2012) where the intercept is a random outcome variable. The specific benefit of using the random effects model is that, the regressors allowed time-invariant variables to be included. In this instance, the random error v_i is heterogeneity specific to a cross sectional unit and in this case, firms. This random error is assumed to be constant over time. The equation of the random effects regression becomes:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + v_i + \varepsilon_{it} \dots\dots\dots\dots\dots\dots (4)$$

Where v_i is between-firm error and ε_{it} is within-firm error. Thus, v_i are assumed to be random variables and that $Cov\ (X_{it},\ v_i) = 0$. But if $Cov\ (X_{it},\ v_i) \neq 0$ the random effects estimator will be

biased. In this respect, and as will be discussed in subsection 5.5.2 and estimated in chapter eight, this thesis will use the Hausman specification test on whether the random effects estimator is biased or not.

(iii) The fixed effects model assumes constant slopes but different intercepts for cross sectional (group) units, and in this case individual firms. Thus, the intercept is the cross section (group) specific that differs from firm to firm. Further, the error term (ε_{it}) is assumed to be correlated with the explanatory variables. Even though there are no significant temporal effects when using fixed effects model, there are significant differences among firms. Thus, the fixed effects model is employed whenever one is only interested in analysing the impact of variables that may vary over time. In this respect, it may be used to explore the relationship between the explanatory variables (corporate governance variables) and performance within a firm. This means that each firm has its own individual characteristics that may or may not affect the explanatory or the dependent variables. If these individual characteristics within a firm may impact or bias the explanatory variables or the dependent variables, then one needs to control for these individual firm characteristics. In this thesis, the fixed effects model is in the following general form:

$$Y_{it} = \beta_1 X_{it} + v_i + \varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots (5)$$

Where v_i is the unobservable firm-specific effects which differ between firms and are time-invariant.

5.5.1 The benefits of using panel data analysis techniques

The benefits of using panel data analysis in this thesis cannot be underestimated. For example, the increased number of observations based on n x t as defined in equation (1) help to improve the efficiency of the estimators because the larger the sample size the lower the bias found in the estimations. Also, the problem of multicollinearity faced by time series studies is eased when using panel data set which provides more informative data, more variability, less collinearity among the variables, more degrees of freedom and efficiency (Klevmarken, 1989 and Hsiao, 2003). Moulton (1986, 1987) noted that the time series and cross section studies does not control for individual heterogeneity and run the risk of obtaining biased results. In this respect, panel data analytical framework makes a distinction between a residual heterogeneity related to changes over time (period effects) and across firms (group effects). This permits for a better identification of the issues leading to changes in corporate governance and firm performance.

5.5.2 The choice of empirical model specification

For the purpose of empirical model specification for data analysis, the assumptions of panel regression models discussed above need to be tested in order to determine the best fit empirical model specification for the unique data set used in this thesis. Unlike Kajola (2008) who failed to test these assumptions before choosing pooled OLS as a method of estimation, and as will be explained in chapter seven, this thesis in choosing between pooled OLS regression and the alternatives of random effects and fixed effects used Breusch and Pagan (1980)'s Langrange Multiplier test to determine whether or not there is heterogeneity. If the pooled OLS estimator is found to be inconsistent and biased due to unobserved variables, then, the choice between random effects or fixed effects is decided by the Hausman specification test to help distinguish between the consistency and efficiency

of the estimators. Fundamentally, if this thesis employs pooled OLS regression and the unobserved variables are uncorrelated with the error term (u_{it}) and the independent variables when the random effects regression is suitable, the OLS estimator will be consistent but not efficient. However, if there are no unobserved variables which are unlikely to hold in this thesis, then OLS will be efficient. Otherwise, the random effects regression will be more consistent and efficient. In the same vein, if a pooled OLS regression is employed when a fixed effect regression is suitable, the OLS estimator will be inconsistent while the fixed effects model will be consistent. Also, if a random effect regression is used when fixed effects regression is suitable, then the random effect model will be inconsistent. In this respect, one needs to be very careful in choosing a suitable estimator in this thesis. As will be explained in chapter seven, the suitability of the empirical model specification in this thesis is determined after first applying Breusch and Pagan (1980)'s Langrange Multiplier test. This test statistics will enable the researcher to make the choice between the suitability of pooled OLS regression and the alternative random and fixed effects regression. Following that, the Hausman specification test will be used to distinguish between random and fixed effects regressions for the empirical analysis in chapter eight.

5.5.3 Endogeneity: causes, consequences and proposed responses

Endogeneity is "a term used to describe the presence of endogenous explanatory variable in a multiple regression model that is correlated with the error term, either because of an omitted variable, measurement error, or simultaneity" (Wooldridge, 2003, p.835). It is one of the key challenges recognised in econometric analysis which produces biased estimates for both coefficients and standard errors. Apart from the panel data analytical framework described above that allows controlling for individual unobserved heterogeneity, endogeneity test will be conducted in this thesis in order to check the robustness of the results. Black (2001) has documented that

endogeneity is always an issue for studies dealing with the relationship between corporate governance and firm performance. Within the accounting and finance literature where the use of econometrics is dominant, corporate governance variable is said to be exogenously determined by environmental factors such as legal efficiency, regulation and rules (Hammelberg, 2002). In Ghana, the most important exogenous environmental factor is the Ghanaian Code. However, Coles *et al* (2008) noted that firm-level corporate governance must be treated as endogenous because most of the corporate governance constructs are choice variables (Larcker *et al*, 2007) which can be a cause of endogeneity. According to Chenhall and Moers (2007), a variable is said to be *endogenous* if it is determined within the context of the model, whilst an *exogenous* variable is said to be correlated with the dependent variable, but its values are determined outside the model. Even with the use of the panel data analytical framework, if the assumption of (strict) exogeneity is violated (*Cov* (X_{it}, v_i) = 0), then endogeneity in this sense is a problem. Recognising the potential problems of endogeneity in this thesis, sub-subsections 5.5.3.1, 5.5.3.2 and 5.5.3.3 present the causes and consequences, testing and proposed responses respectively.

5.5.3.1   Causes and consequences of endogeneity

Researchers have identified four major causes of endogeneity faced in governance-performance relationship studies to include omitted variables or unobserved heterogeneity, simultaneity or reverse causation, measurement error and equilibrium conditions (Borch and Koke, 2002; Wooldridge, 2002; Chenhall and Moers, 2007; Larcker and Rusticus, 2007; Roberts and Whited, 2011) and are discussed in turn.

(i)   Omitted variables endogeneity occurs if the true model underlying the data does not capture all the relevant variables. For example, if the relevant control variable (see section 5.4) is

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omitted from equation (1) due to data unavailability (Wooldridge, 2009) but the said control variable is correlated with X_i, then variable X_i will be endogenous if it is correlated with the control variable. With regard to governance-performance relationship studies, the appointment of non-executive directors to serve on the board may signal *"managers' intent"* to treat outside investors fairly but in practice, this might not influence the behaviour of managers (Black *et al,* 2006a). As a result, a positive estimate on corporate governance may be attributed to the managers' intent (omitted variable) rather than the appointment of non-executive directors.

(ii)   Simultaneity or reverse causation endogeneity occurs when one or more of the independent variables X_i, is jointly determined with the dependent variable Y_i, typically through equilibrium mechanism (Wooldridge, 2009). In the governance-performance relationship studies, firm performance variables and the right hand side variables may be simultaneously determined. According to Chidambaran *et al* (2006), corporate governance changes can impact on performance when firms experience performance declines. Conversely, Beiner *et al* (2006) noted that firms experiencing large performance improvements might adopt good corporate governance as they seek to strengthen their performance because they have better investment opportunities and depend more on external financing. In fact, Bozec *et al* (2010) argued that the relation between governance and performance might run from performance to governance instead of from governance to performance as is frequently thought. In this case, the relationship between firm performance (dependent variable) and corporate governance (explanatory variable) runs both ways which causes simultaneity endogeneity.

(iii)   Measurement error endogeneity arises if variables of interest are imperfectly measured (Roberts and Whited, 2011). In this regard, if the measurement error is in the dependent variable (firm performance); the statistical implications are similar to the omitted variables endogeneity (Roberts and Whited, 2011) discussed above. However, if the measurement error is in the independent variable, then the *GCGI* which is designed to measure the firm-level quality corporate governance is incorrectly measured and generally produces endogeneity. As a result, the measurement error in the *GCGI* generally produces inconsistent coefficients, even when it is uncorrelated with other independent variables.

(iv)   Equilibrium conditions endogeneity is based on the assumption that if all firms operate at equilibrium, given their circumstances, then it is inappropriate to suggest that firm performance can be explained by the adoption of good corporate governance (Chenhall and Moers, 2007). In particular, if firms optimally adopt corporate governance provisions, then there will be no relationship between corporate governance and firm performance since every firm is expected to be at equilibrium and therefore the choice of corporate governance cannot make any difference to their performance (McKnight and Weir, 2009).

Generally, the consequences of the problems of endogeneity are that the true regression model makes the coefficient of the explanatory variables inefficient and unreliable in affecting the robustness of the governance-performance relationship results. Beyond the omitted variables or unobserved heterogeneity, simultaneity or reverse causation, measurement error and equilibrium conditions endogeneity, there is the need to investigate the potential problems of endogeneity in this thesis. Arguably, the governance-performance relationship studies reviewed in chapter four have

provided mixed results. But, apart from few previous studies that clearly dealt with the problems (Agrawal and Knoeber, 1996; Weir *et al*, 2002; Durnev and Kim, 2005; Black *et al*, 2006a; Cheung *et al*, 2007; Padgett and Shabbir, 2008; Henry, 2008; Bhagat and Bolton, 2008, Bruno and Claessens, 2010), most of them failed to address these econometric problems which raises questions regarding the reliability of the results of substantial numbers of the governance-performance relationship studies reviewed in chapter four and in particular Ghana. In this respect, the presence of the problems of endogeneity among the variables in this thesis will be confirmed based on the application of the Durbin-Wu-Hausman (1978) exogeneity test.

5.5.3.2   Durbin-Wu-Hausman exogeneity test

The existence of the problems of endogeneity is frequently assumed by researchers without testing for its existence before addressing it (Agrawal and Knoeber, 1996; Weir *et al*, 2002, Bruno and Claessens, 2010). However, and in addressing the potential problems of endogeneity in this thesis, the main variable of interest is the *GCGI* for testing. This is because it integrates the additional explanatory variables used in respect of the specific governance mechanisms in this thesis. In testing for the problems of endogeneity, and as has been indicated earlier, the most famous Durbin-Wu-Hausman (1978)[22] exogeneity test will be conducted in chapter nine to determine whether the main explanatory variable of interest (*GCGI*) is confirmed to be endogenous based on the *null hypothesis of no endogeneity*. In particular, the test follows a two step approach. First, and as will be tested in chapter nine, the developed *GCGI* will be made to be exogenous by creating a new *GCGI* variable (*R-GCGI*). This variable is created by regressing all the control variables on the *GCGI* and saving the residuals from the regression as the new variable (*R-GCGI*). The individual control

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[22] This particular test have been extensively used by previous researchers in governance-performance relationship studies (For example, Beiner *et al*, 2006; Cheung *et al*, 2007; Padgett and Shabbir, 2008; Bhagat and Bolton, 2008)

variables are called instrumental variables or instruments. Given that the new variable is created from the control variables, it should not be correlated with the error term, and can be regarded as exogenous. In the second step, firm performance will be regressed on the *GCGI,* control variables and the residual left over created from the first step. At this point, if the t-statistics of *R-GCGI* is high enough, then the *null hypothesis of no endogeneity* can be rejected suggesting that the developed *GCGI* is endogenously correlated with firm performance which will be subjected to correction in chapter nine. Arguably, the lagged governance variables[23] and the instrumental variable (IV) estimations are suitable to address the potential problems of endogeneity.

5.5.3.3   Proposed responses to endogeneity

In this thesis, the potential problems of endogeneity will be addressed in chapter nine through the use of lagged governance variables by one year and the instrumental variable estimations. However, using the instrumental variable to address the potential problems of endogeneity requires careful consideration as researchers argue that it is not obvious how to determine this problem unless exogenous instruments can be identified and n-stage least squares techniques are used in the estimation (Larcker, 2003; Bozec *et al*, 2010; Larcker and Rusticus, 2010). Notwithstanding the difficulties in implementing good instrumental variables, some researchers have used instrumental variable estimations to correct the potential problems of endogeneity (Drobetz *et al*, 2004; Durnev and Kim, 2005; Black *et al*, 2006a; Zheka, 2006). In particular, Black *et al* (2006b) are the ones that found reasonably good instruments where they used asset size dummy variables for Korean firms with assets value over 2 trillion won because different corporate governance is applied to such firms (Bozec *et al*, 2010).

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[23] As will be discussed in chapter nine, the lagged governance-performance relationship will be estimated to address the potential problems endogeneity because of time–lag. This is because the governance provisions adopted in one year may have influence on firm performance the following year.

In this respect, their instrumental variable is only suitable in the Korean case and therefore has not been employed in this thesis because there is no different corporate governance applied to Ghanaian listed firms with different asset value.

5.5.3.3.1   Determination of instrumental variable (IV) and the *GCGI*

As indicated earlier, one response to mitigate the problems caused by endogeneity is to use instrumental variables (Henry, 2008; Bozec *et al*, 2010). As has been discussed in sub-subsection 5.5.3.2, if the *GCGI* is endogenously correlated with firm performance, it may possibly be that an important control variable or variables has or have been omitted from the regression model or that the *GCGI* is incorrectly measured. In this regard, Larcker and Rusticus (2010) suggested IV model as a response to the potential problems of endogeneity. Notably, the IV method follows a two level procedure. On one level, a proxy variable (*the instrument*) which is assumed to be strongly correlated with the *GCGI*, but uncorrelated with the error term (ε) needs to be identified. The second level involves the replacement of the *GCGI* by the proxy variable (*the instrument*) in the regression model. As a result, the coefficient of the *GCGI* will be consistent and unbiased. Arguably, it is important to point out some limitations of using the IV model. In particular, it is very difficult to establish an instrument that is correlated with the *GCGI* (Chenhall and Moers, 2007). Beside, the assumption of an instrument uncorrelated to the error term (ε) can never be tested for its validity (Durnev and Kim, 2005; Larcker and Rusticus; 2010).

That notwithstanding, two strategies based on the instrumental variable estimations will be used to address the potential problems of endogeneity in this thesis. First, and following Padgett and Shabbir (2008), three instruments will be initially identified in chapter nine to include board size, director holding and block holdings to establish whether these are good

instruments to proxy the *GCGI*. Second, and following the procedure suggested by Henry (2008), a two-stage instrumental variable fixed effects regression methodology will be used to address the endogenous element of the *GCGI* if the fixed effects regression is appropriate for the empirical analysis in chapter eight. The procedure involves two stages. In the first stage, a dummy variable was employed as an instrument called the Ghanaian Code Change (*GCC*), indicating the introduction of the 2003 Ghanaian Code discussed in section 3.3 of chapter three. This dummy variable is coded 1 if sample firms year ends are on 31st December 2004; and 0 if a firm year ends on or before 2003. The appropriateness of this dummy variable as an instrument is based on the anticipation that the adoption of the Ghanaian Code provisions introduced in 2003 will impact on firm performance post 2003. Such anticipation is in agreement with a growing literature suggesting that the introduction of code on corporate governance brings about either corporate governance changes or improvement in the degree of compliance with corporate governance, and does significantly influence firm performance.

For example, Cui *et al* (2008) reported a positive association between corporate governance changes from pre 2003 to post 2003 ASX recommendations and change in firm performance during the same period. Additionally, Cheung *et al* (2010) reported an improvement of the degree of compliance with corporate governance by Chinese firms from 2004 to 2006 and suggested a positive relation between their overall CGS and firm performance. Arguably, and for the dummy variable to be a very good instrument for the *GCGI*, its coefficient is expected to be positive and highly significant, indicating that the *GCGI* is significantly higher after the introduction of the Ghanaian Code provisions. This will suggest that the *GCC* dummy variable is a good instrument for the *GCGI*. The next section discusses the questionnaire development and analysis procedures in respect of the directors' opinions on corporate governance and firm performance.

5.6 THE QUESTIONNAIRE DEVELOPMENT AND ANALYSIS PROCEDURES

5.6.1 The objectives of employing the questionnaire survey

There are two main objectives of employing questionnaire survey in this thesis. The first of these objectives is to help the researcher to gain insight into the usefulness of the Ghanaian Code provisions and its effect on the Ghanaian listed firms' corporate governance practices. By seeking the opinions of the directors responsible for the implementation of the Ghanaian Code provisions, it can help in identifying factors affecting corporate governance practices which cannot be captured by the specific governance mechanisms and the *GCGI* data analysis. In particular, factors such as the Ghanaian listed firms' preparedness to comply with further corporate governance requirements that are not captured by the existing Ghanaian code can be addressed. Second, the responses from the directors can also help to get better understanding of the directors' opinions on the adoption of the Ghanaian Code and its benefit to their firms' performance. In this respect, their responses will help to validate and complement the regression results from the annual report data.

5.6.2 The development and operationalisation of the questionnaire

Since one of the objectives of this thesis is to empirically evaluate the perceptions of the directors of the Ghanaian listed firms on the adoption of the Ghanaian Code provisions and its benefit to their firm performance, a postal questionnaire was developed to obtain directors' opinions directly. The questionnaire was developed and piloted on the executives and non-executives directors of three randomly selected Ghanaian listed firms after reviewing a number of studies that had used questionnaires for their studies. In particular, questionnaires developed by Jenkins-Ferrett (2001), Moxey *et al* (2004) and Reed *et al*, (2006) in their directors' opinions on corporate

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governance and firm performance studies and the feedback from the pilot study provided some insight into the development of the questionnaire for this thesis. Consistent with the literature, the use of questionnaires is an appropriate technique to gather data regarding directors' opinions on corporate governance and its benefits to firm performance, which also allows for an improvement in the response rate at a reasonably low cost. If the response rate is low, it is suggested that providing self addressed stamped returned envelopes for the respondents, sending follow-up letters and keeping the questionnaires brief are some of the practical ways to improve the response rate (Sekaran, 2006).

The questions employed in this thesis are shown in Appendix 2. As indicated earlier, the questionnaire was designed in order to obtain the perceptions of directors on two main themes (corporate governance practices and its benefit to firm performance) to validate and complement the regression results from the annual report data. The questionnaire was divided into four sections and consists of five pages when set out on a single-sided A4 paper. The first section contains general information on respondents' background as directors and their familiarity with the Ghanaian Code provisions. The second section attempted to obtain respondents opinions on corporate governance practices. The third section was to obtain the respondents' opinions on the benefit of corporate governance to their firms' performance. The final section obtained information for follow-up questions and a space for comments if required. A cover letter from the Robert Gordon University was attached with a detailed explanation of the purpose of the study and also confirms that all information would be managed in the strictest confidence. This letter was signed by the researcher and the researcher's principal supervisor name and contact details were included for the attention of the respondents. The letter was anticipated to increase the respondents' confidence in the research project in order to encourage them to participate.

Closed-ended questions which offer a choice of replies are used in this thesis (Oppenheim, 1992) because of the particular interest in obtaining opinions on corporate governance practices, which can have influence on firm performance. The questions are in the form of a rating scale that would allow a numerical value to be given to opinions, and can be regarded as simple for respondents to answer and easier for the researcher to code and analyse (Hussey and Hussey, 1997). Close-ended questions would also help to make comparison with the regression results from the annual report data. Nonetheless, close-ended questions may have some limitations due to the loss of inexpressiveness (Oppenheim, 1992) as well as limited freedom for reasoning on answers. To overcome these limitations, a space was provided at the end of all the questions for additional comment(s). With regard to the opinions on corporate governance and its likely benefit to firm performance, a five point Likert scale was used in the questionnaire (Saunders *et al*, 2009), where 1 denoting 'strongly disagree or least beneficial', 2 for 'disagree or less beneficial', 3 for 'neutral or no view', 4 for 'agree or more beneficial', and 5 for 'strongly agree or most beneficial'. It is important to note here that the confidentiality of the responses and anonymity of the respondents were clearly stated in the cover letter to encourage the respondents in collaborating with the researcher and providing honest information for the purpose of this thesis.

5.6.3 Questionnaire distribution and follow-up

A total of 70 questionnaires were sent via post to the directors of the Ghanaian listed firms on 10th May 2011. In this respect, a cover letter was prepared to accompany each questionnaire to explain the purpose of this thesis, introduce the researcher and explain how to return the completed questionnaire to the researcher. In particular, each questionnaire was also accompanied by a prepaid envelope addressed directly to the researcher in Ghana. The letter was addressed to the CEOs and the Chairmen of the listed

firms as these directors are assumed to be responsible for the implementation of good corporate governance. The questionnaires sent were serially numbered to match each firm included in the sample for follow-up purposes. A follow-up questionnaire was posted approximately six weeks after the first mailed questionnaires. In this regard, all responses were returned directly to the researcher's postal address in Ghana and after six weeks of sending the questionnaire, 28 were received from the directors which triggered reminder letters to be sent out. As will be explained in chapter ten, the final number of 43 completed questionnaires received represents a response rate of 61%. The high response rate was achieved partly because the researcher has a network of contacts and a very good working knowledge of the Ghanaian business environment, making it easier to obtain responses from the respondents.

5.6.4 Analysis procedures of the questionnaire data

The responses from the directors of the Ghanaian listed firms were analysed using simple statistical procedures (Oppenheim, 1992). The analyses are mainly based on the rating of the questionnaires received via post. In this respect, inferential statistical analysis was used to establish frequencies, means and standard deviations from the responses to each question. The responses were then grouped into themes, tabulated and categorised for interpretation and presentation in chapter ten.

5.7   CHAPTER SUMMARY

This chapter has discussed data considerations and analysis procedures adopted in this thesis with particular emphasis on data collection procedures and the method of analysis in achieving the thesis objectives. First, it attempted to describe the data, sample and the development of the *GCGI*

where the sources of data were comprehensively explained. In particular, the corporate governance information for the development of the *GCGI* as the main explanatory variable and the specific governance mechanisms as additional explanatory variables were mainly collected from the Ghanaian listed firms' annual reports. The selection of the *GCGI* and the specific governance mechanism, the reason in choosing annual reports as the main data source for investigating the degree of compliance with corporate governance, the scoring method are then described and discussed.

Second, the firm performance measures as the dependent variables and the control variables were also collected from the GSE *Fact Books*. Following that, the justification in choosing the accounting-based (ROA, ROE) performance measures, market-based (Tobin's Q) performance measures and the control variables were discussed. Beginning 31st December 2000 to 31st December 2009, a range of 21 to 35 firms were listed each year on the GSE of which the full data needed was collected over ten years, resulting in a total of 283 firm-year observations. Third, a panel data analytical framework was adopted in this thesis where the multiple regression models were used as method of analysis for the *GCGI* and the specific governance mechanisms impact on firm performance. In particular, the robustness of the empirical results to the existence of the potential problems of endogeneity was examined. In this respect, a lagged governance-performance relationship and instrumental variable estimations were adopted in addressing the endogenous element in the empirical results.

Finally, the chapter described how the data on the directors' opinions on corporate governance practices and firm performance was collected through questionnaire administration. It explicitly discussed how the 70 participants were selected from the same 35 Ghanaian listed firms, followed by questionnaire development and operationalisation, pilot study, its distribution and follow-up procedures. The analysis and the reporting procedures were described to include the simple statistical analysis in validating and

complementing the findings from the *GCGI* and the specific governance mechanisms impact on firm performance.

The next chapter presents the analysis of the degree of compliance with the Ghanaian Code provisions.

CHAPTER SIX

ANALYSIS OF THE DEGREE OF COMPLIANCE WITH THE GHANAIAN CODE PROVISIONS

6.1   INTRODUCTION

This chapter presents the results of the investigation into the degree of compliance with corporate governance among Ghanaian listed firms over a period of ten years, 2000-2009. The issues investigated are the degree of compliance with the Ghanaian Code provisions using a number of descriptive statistics. In particular, the summary descriptive statistics of the degree of compliance with the Ghanaian Code provisions based on the full sample are reported. This includes the Ghanaian Corporate Governance Index (*GCGI*), sub-indices, pre 2003 and post 2003 compliance levels and the analysis of other specific corporate governance mechanisms. Following that, a test for differences in the degree of compliance based on pre 2003 and post 2003 *GCGI* are conducted. The findings are reported as follows. Section 6.2 presents the descriptive statistics of the degree of compliance with the *GCCI* based on the full sample. Section 6.3 describes and explains descriptive statistics based on sub-indices. Section 6.4 examines descriptive statistics based on pre 2003 and post 2003 degree of compliance. Section 6.5 reports descriptive statistics of other specific governance mechanisms. Section 6.6 further tests for the differences in pre 2003 and post 2003 *GCGI*. The results are summarised and discussed in section 6.7, while section 6.8 provides summary for the chapter.

6.2 THE DEGREE OF COMPLIANCE WITH THE *GCGI* BASED ON THE FULL SAMPLE (ALL THE 283 FIRM YEARS)

Table 6-1 shows the descriptive statistics of the degree of compliance with the *GCGI* based on the full sampled firms.

Table 6-1: Descriptive statistics for the *GCGI* based on the full sample

INDEX	Year-by-year index (%)										
	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Mean	69	53	55	62	62	71	71	75	75	75	73
Median	72	47	50	53	61	72	72	72	74	75	72
Mode	69[a]	42[a]	44	44	47	72	72[a]	69[a]	69	69	69
Std Deviation	15.080	14.485	14.949	16.757	16.492	14.025	12.917	10.791	9.928	11.345	12.392
Minimum	39	42	42	42	39	44	44	50	50	50	42
Maximum	100	89	89	89	89	97	97	100	100	100	100
Observations	283	21	21	23	25	29	31	31	32	35	35

a. Multiple modes exist. The smallest value is shown.

The results indicates that the pattern in the distribution of the means *GCGI* over the ten years has the lowest mean (53%) in the year 2000, and has progressively improved over the next nine years to 73% in 2009, suggesting that firms were becoming more compliant over this period. This trend is further supported by the mode increasing from 42% in 2000 to 69% in 2009. Although, 69% mean *GCGI* for the whole ten years has been recorded for the full sampled firms, the overall compliance levels stabilised during 2002-2003, 2004-2005 and 2006-2008 with the compliance levels at 62%, 71% and 75% respectively. The mean *GCGI* however reduces in the year 2009 to 73%, a trend that necessitates further investigation as examined below.
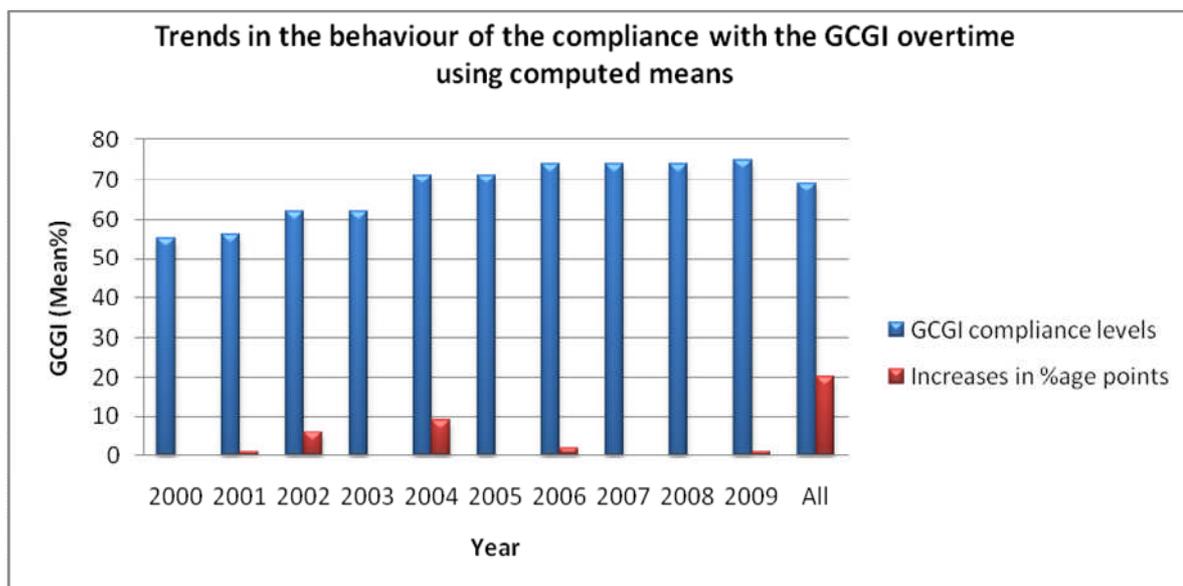
Figure 6-1: Trends in the behaviour of the *GCGI* over time (2000-2009)

Using the computed means, Figure 6-1 shows the trend in behaviour of the *GCGI* which compares year-by-year compliance levels among the sampled firms and the yearly increase in percentage point. As Figure 6-1 indicates, the sampled firms recorded increase percentage point of 20 (i.e. from 53% in 2000 to 73% in 2009), the findings consistent with the 20 percentage point increase (i.e. from 48% in 2002 to 68% in 2006) in South Africa for the adoption of King II Report (Ntim, 2009). In this respect, the highest increase in percentage point is in the first year when the Ghanaian Code became operational. In this case, 2004 recorded the highest increase percentage point of 9 (i.e. from 62% in 2003 to 71% in 2004), evidence consistent with the 9 percentage point increase (i.e. from 48% in 2002 to 57% in 2003) experienced in South Africa during the second year of King II Report (Ntim, 2009). However, the subsequent five years of the *GCGI* saw the compliance levels increasing at a decreasing rate from the minimum of -0.48 to a maximum of 3 percentage point.

A positive relationship between the degree of compliance and time findings in Ghana is further supported by prior studies in the UK, Australia and South Africa (Shabbir and Padgett, 2008; Henry, 2008, Cui *et al*, 2008; Ntim,

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2009) where a considerable improvement in the degree of compliance were recorded over time among listed firms. This positive increase is driven by the introduction of the Ghanaian Code provisions which show substantial improvement from 2003 to 2004, suggesting that firms might have adopted the provisions in response to the pressure they felt of being listed on the GSE. However, and to facilitate comparison for each of the thirty-six provisions used for the development of the *GCGI*, it is important to investigate the variability or otherwise of the specific governance provisions as against the aggregate compliance levels which are grouped into six categories for the full sampled firms. The six categories include board composition, audit committee, remuneration committee, shareholder rights, financial affairs and auditing and disclosure practices. Tables 6-2 to 6-7 report the degree of compliance among the sampled firms with all the thirty-six Ghanaian Code provisions that constitute the *GCGI*.

Table 6-2: Board composition specific provisions compliance levels for the full sample

Specific governance provision in relation to board composition	The degree of compliance among firms (%)										
	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Board Composition											
Role separation (ROLESEP)	84	86	86	83	84	83	77	81	84	86	89
Six board meetings held (BODMEET)	6	0	0	0	0	7	10	10	6	9	11
The size of the board (BODSIZE)	63	71	76	74	68	62	65	58	59	57	51
Proportion of INEDs on the board (PINED)	100	100	100	100	100	100	100	100	100	100	100
Existence of finance directors (FD)	34	43	38	35	32	34	32	29	28	34	34
Office of the company secretary (COSEC)	100	100	100	100	100	100	100	100	100	100	100
Observations	283	21	21	23	25	29	31	31	32	35	35

As Table 6-2 indicates above, there are considerable variations in the degree of compliance with the board composition specific governance provisions across the sampled firms. It ranges from 0% complete non-compliance for the first four years (from 2000 to 2003) regarding six board meetings held in a year (BODMEET) to 100% perfect compliance in the case of the proportion

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of independent non-executive directors on the board (PINED) and the existence of the office of the company secretary (COSEC) for all the sampled firms during the ten year period.

A closer look at the data for the reasons accounting for the variability indicates that the 0% complete non-compliance of BODMEET for the first four years is because the Ghanaian Code was first introduced in the year 2003. However, the degree of compliance did not get any better over the subsequent years with the highest compliance levels of 11% in 2009, the findings not consistent with the frequency of board meetings in South Africa where the degree of compliance ranges from 65% in 2002 to 84% in 2006 (Ntim, 2009). The poor compliance levels in relation to BODMEET suggest that the provisions of six board meetings a year may not be appropriate in the Ghanaian context. This is very important because the specific number of board meetings provided by the Ghanaian Code is not supported by other world codes[24]. In respect of the South African King Reports, no specific number of board meetings has been provided so as the UK codes. Instead, firms are encouraged to have frequent board meetings of which the adoption of this provision is supported by listed firms in these countries.

The 100% perfect compliance in relation to the PINED and COSEC is consistent with the provisions of the revised GSE Listing Rules and the Ghanaian Companies Code. Whereas the GSE Listing Rules mandate every listed firm to have two or 25% of the board to be independent non-executive directors, the Companies Code on the other hand mandate listed firms to appoint a company secretary. Arguably, the findings of these two provisions with no variation indicate that linking the specific governance provisions to

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[24] For example, and as explained in section 3.4 of chapter three, the UK and the South African Codes are not specific about the number of meetings that should be held by their respective listed companies. Instead, they have recommended for frequent board meetings. Also, a close examination of the listed firms annual reports did not indicate any reasons for non-compliance with some of the Ghanaian Code provisions. Although, the code specifically requested for listed firms to provide reasons for combining the post of the CEO and the Chairman of the board to shareholders, 16% of the pooled sampled firms did not provide any reasons for combining the two roles. This suggests weakness in the enforcement of the corporate governance provisions in Ghana.

firm performance may not be methodologically correct if all the sampled firms complied with these provisions.

For the role separation (ROLESEP), and as Table 6-2 indicates above, 84% of the sampled firms complied with this provision over the ten year period, evidence consistent with the findings in the UK, US, Nigeria and South Africa (Conyon, 1994; Rayton and Cheng, 2004; McKnight and Weir, 2009; Linck *et al*, 2009; Kajola, 2008; Ntim, 2009). However, the degree of compliance for the first three years when the Ghanaian Code was not mandated is higher (85%) than the following six years (83%) after the Code was introduced. Arguably, listed firms in Ghana progressively complied with this provision at the rate of 86% in 2000 to 89% in 2009 compared with the South African listed firms where the levels of compliance ranges from 61% in 2002 to 86% in 2006. The findings in this thesis has also shown improvement from prior studies in Ghana (Kyereboah-Coleman and Biekpe, 2006a; Abor and Biekpe, 2007). In particular, Kyereboah-Coleman and Biekpe (2006a) reported 75% levels of compliance in ROLESEP among Ghanaian listed firms. Although, the authors used questionnaires and personal interviews to gather the governance data, it clearly shows that the Ghanaian listed firms appear to attach importance to ROLESEP and therefore the recommendations of the Ghanaian Code have reinforced the levels of compliance.

Also, and as Table 6-2 indicates above, 63% of the sampled firms complied with the board size (BODSIZE) provision during the ten year period but the highest compliance levels were also recorded in the first three years (i.e. 71% in 2000, 76% in 2001 and 74% in 2002) when the Ghanaian Code was not operational. After the introduction of the Ghanaian Code, the sampled firms' compliance levels started to decrease from 71% in 2000 to 51% in 2009, a decrease of 20%. This evidence is supported by Cosh *et al* (2008) who reported a decline of board size among the UK listed firms after the introduction of the Cadbury recommendations. A possible reason for the reduction of the degree of compliance may be that the provision for the

Ghanaian listed firms to have a board size between a minimum of eight and a maximum of sixteen is not feasible in the Ghanaian context. By contrast, the remaining board composition provision recorded low compliance levels at the rate of 34% in respect of the existence of finance director (FD). On a yearly basis, the FD recorded its highest compliance levels (43%) in 2000 but later reduced to 34% in 2009. A general examination from reading the listed firms' annual reports suggests that most of the firms have only the CEO to sit on the board. In this case, finance managers are assigned the responsibility of the finance function in most of the firms instead of the finance director as recommended by the Ghanaian Code.

Table 6-3 reports the audit committee specific provisions degree of compliance for the full sampled firms

Table 6-3: Audit committee specific provisions compliance levels for the full sample

Specific governance provision in relation to audit committee	The degree of compliance among firms (%)										
	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Audit committee											
Existence of audit committee (AUCOM)	70	24	29	48	48	79	84	87	91	83	86
Composition of audit committee (AMEMB)	64	24	29	48	44	76	77	81	81	74	71
Members with fin. Knowledge (ACOMFK)	43	14	14	26	24	45	48	58	59	57	57
Chairman of audit committee (AUCHAIR)	58	19	24	39	40	72	71	77	72	66	66
Disc of audit com. members (AUMEMDIS)	62	24	29	43	40	76	81	81	78	69	69
Report on audit com. Activities (AAUCOM)	67	24	29	48	44	76	77	87	88	80	80
Observations	283	21	21	23	25	29	31	31	32	35	35

In general, the evidence from Table 6-3 is that the sampled firms are more likely to comply with some of the audit committee specific governance provisions than others. For example, 70% of the sampled firms have in existence of audit committee (AUCOM), but only 43% of them have some of its members with financial knowledge. Also, whereas 64% of the sampled firms comply with the composition of the audit committee (AMEMB), 62% provide disclosure of audit committee members (AUMEMDIS) in their annual

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reports. Interestingly, 67% of the sampled firms report on audit committee activities (AAUCOM) with 58% having a non-executive director as the Chairman of the audit committee (AUCHAIR). That notwithstanding, the mean AUCOM (70%) for the full sample is an improvement from the work of Kyereboah-Coleman and Amidu (2008) who reported 38% compliance level of AUCOM among SMEs in Ghana.

Arguably, and as Table 6-3 indicates above, there is no perfect compliance with any of the audit committee specific provisions even though the provisions for the establishment of audit committee is consistent with the provisions in the SECG regulation and the revised GES Listing Rules. Both regulations require listed firms to provide written evidence regarding the operation and effectiveness of audit committee. Notwithstanding these mandatory requirements, and as indicated earlier, 70% of the sampled firms met this requirement, suggesting that mandatory requirements do not guarantee perfect compliance, the findings supported by the work of Carcello *et al* (2002) in the US who recorded 85% audit committee compliance levels based on the rule-based approach to corporate governance. By contrast, Weir *et al* (2002) recorded the highest (96%) audit committee compliance levels in the UK during 1996, the evidence supported by Ntim (2009) with 95% compliance levels among South African listed firms in 2006.

However, the Ghanaian listed firms have experienced progressive improvement in relation to year-by-year compliance levels from 2000 to 2007 for all the audit committee specific governance provisions. This is not the case in 2008 and 2009 where the compliance levels started to drop as shown in Table 6-3. One possible reason may be that some of the sampled firms did not record the audit committee related information in their annual reports used to benchmark the compliance levels but rather provided a written evidence of the operation and effectiveness of the audit committee to their regulators which could affect the degree of compliance with the audit committee specific provisions recorded in this thesis.

Table 6-4 below presents results of the degree of compliance with the remuneration committee specific provisions among the full sampled firms. For the five out of the six specific governance provisions, the compliance levels are comparatively low. In particular, only 28% or less of the sampled firms complied with these provisions. They include the existence of remuneration committee (RCOM), the composition of remuneration committee, disclosure of the remuneration committee membership (RMEMDIS), having non-executive director as the chairman of remuneration committee (RCHAIR) and the board receiving remuneration in stock (STOCKREM). By contrast, only aggregate compensation paid to directors (AGCOMP) provision recorded perfect compliance (100%) for all the sampled firms. One possible reason for the perfect compliance may be that the AGCOMP is consistent with the provisions in the Ghanaian Companies Code that mandates firms in Ghana to provide a note in their annual reports the directors' total remuneration.

Table 6-4: Remuneration committee specific provisions compliance levels for the full sample

Specific governance provision in relation to remuneration committee	The degree of compliance among firms (%)										
	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Remuneration committee											
Existence of Remuneration com. (RCOM)	28	14	14	22	16	28	29	32	38	34	34
Composition remuneration com.(RMEM)	23	14	14	22	16	24	23	26	28	26	29
Disc of remuneration com. (RMEMDIS)	23	14	14	22	16	24	23	26	28	26	29
Chairman of remuneration com.(RCHAIR)	22	14	14	22	16	24	23	23	25	23	26
Aggregate compensation paid (AGCOMP)	100	100	100	100	100	100	100	100	100	100	100
Bod. remuneration in stock (STOCKREM)	8	5	10	9	8	10	10	10	6	6	6
Observations	283	21	21	23	25	29	31	31	32	35	35

With regards to the pattern of distribution of the compliance levels over the ten years, it can be seen that the lowest compliance levels for the sampled firms started in the year 2000 with marginal improvement after the introduction of the Ghanaian Code in 2003. Arguably, the highest compliance levels (38%) in relation to RCOM during 2007 is not consistent with the

findings in the UK and South Africa where Weir and Laing (2000) and Ntim (2009) reported compliance levels of 95% in 1995 and 95% in 2006 respectively. Also, and as Table 6-4 indicates, the board of the Ghanaian listed firms receive less remuneration in stock (mean of 8%) contrary to the provisions imposed by the Ghanaian Code. These findings further support the weak enforcement strategy by regulatory institutions in Ghana.

Table 6-5 presents shareholder rights specific provisions compliance levels for the full sample.

Table 6-5: Shareholder rights specific provisions compliance levels for the full sample

Specific governance provisions in relation to shareholder rights	The degree of compliance among firms (%)										
	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Shareholder rights											
Adequate notice and info. for AGM (AGM)	100	100	100	100	100	100	100	100	100	100	100
Approval to board re-election (BODELEC)	100	100	100	100	100	100	100	100	100	100	100
Facilitate voting by proxy (VBP)	100	100	100	100	100	100	100	100	100	100	100
Opportunities to vote by mail (VBM)	2	0	0	0	0	0	0	3	3	6	3
Info. on related party trans (RPTRANS)	61	33	38	65	60	59	55	58	59	77	83
Board share ownership (BSOWN)	83	76	71	78	84	83	81	87	84	89	91
Observations	283	21	21	23	25	29	31	31	32	35	35

As Table 6-5 indicates above, of the six shareholder rights specific provisions, the sampled firms have experienced perfect compliance (100%) of the three provisions at the aggregate level and in any given year. They include adequate notice and information for annual general meeting (AGM), approval to board re-election (BODELEC) and to facilitate voting by proxy (VBP). A closer look at the provisions for the reason accounting for complete compliance indicates that the AGM, BODELEC and VBP are all consistent with the provisions in the Ghanaian Companies Code and the revised GSE Listing Rules. Both regulations mandate Ghanaian listed firms to provide adequate notice towards an AGM, the board to submit themselves for re-election and to facilitate voting by proxy. By contrast, there are variations in the degree of compliance with the remaining three provisions including the opportunity to

vote by mail (VBM), information on related party transaction (RPTRANS) and board share ownership (BSOWN). In particular, the VBM recorded near complete non-compliance with only 2% of the sampled firms complying with the provision, suggesting that it may be unsuitable in the Ghanaian context and therefore not supported by the Ghanaian Companies Code, the revised GSE Listing Rules and the SECG regulations. Although the RPTRANS and the BSOWN are consistent with the provisions in the revised GSE Listing Rules, 61% and 83% of the sampled firms complied with these provisions, suggesting that the revised GSE Listing Rules do not guarantee perfect compliance. However, the sampled firms experienced progressive improvement over time with respect to RPTRANS and BSOWN as shown in Table 6-5. Arguable, the shareholder rights specific provisions and in particular the provision related to AGM findings is consistent with the World Bank corporate governance country assessment report on Ghana (World Bank, 2005). In particular, the report highlighted that the shareholder rights in Ghana related to AGM was 75% largely observed.

Table 6-6 provides financial affairs and auditing specific provisions compliance levels for the full sample firms.

Table 6-6: Financial affairs and auditing specific provisions compliance levels for the full sample

Specific governance provisions in relation to financial affairs and auditing	The degree of compliance among firms (%)										
	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Financial affairs and Auditing											
Annual report at required date (ARLRD)	100	100	100	100	100	100	100	100	100	100	100
Use of recognized audit firm (RAF)	100	100	100	100	100	100	100	100	100	100	100
Systems to monitor risk (SMR)	72	24	24	43	48	76	81	90	91	100	97
Assessment of operating results (AFOR)	99	95	100	100	96	100	100	97	97	100	100
Use of GNAS or other standards (GNAS)	75	29	33	43	56	79	84	90	94	94	97
External auditors fee paid (FPEAUD)	100	100	100	100	100	100	100	100	100	100	100
Observations	283	21	21	23	25	29	31	31	32	35	35

The results in Table 6-6 above indicate that the degree of compliance with the financial affairs and auditing specific provisions is comparatively high. In particular, annual report required date (ARLRD), the use of recognized audit firm (RAF) and the fee paid to external auditors (FPEAUD) experienced perfect compliance. In this case, 100% of the sampled firms complied with these provisions at the aggregate level and year-on year basis. One reason accounting for the perfect compliance may be that ARLRD, RAF and FPEAUD are all consistent with the provisions in the Ghanaian Companies Code and the SECG Regulations. However, there are variations in compliance levels regarding internal control to monitor risk (SMR) and the use of the Ghana National Accounting Standards (GNAS) or any other standards recommended by ICAG. Whereas the sampled firms experienced a reasonable 72% (SMR) and 75% (GNAS) aggregate compliance levels, the yearly compliance started less than 30% in 2000 for these provisions but progressively improved to 97% for each provision in 2009. Although, the assessment of operating results (AFOR) is supported by the provisions in the Companies Code, the sampled firms could not achieve perfect compliance levels. Instead, the sampled firms at the aggregate levels recorded 99% (AFOR) compliance levels with insignificant variations over time, suggesting the first time in which the Ghanaian Code provision supported by the Companies Code is not perfectly complied.

Table 6-7 reports disclosure specific provisions compliance levels for the full sample. The results below suggest that the degree of compliance with the disclosure specific provisions at an aggregate level (i.e. ranges from 61% to 100%) is generally high compared with the previous findings of World Bank (2005) and Tsamenyi *et al* (2007) who reported 50% and 52% levels of disclosure standards in Ghana respectively. In particular, and on a yearly basis, the pattern of distribution of having adequate internal control (DSAIC) and disclosure of compliance with corporate governance (DSCCG) started as low as 19% compliance levels in 2000 for both provisions, they saw

significant improvement in the degree of compliance after the introduction of the Ghanaian Code to 86% and 91% in 2009 respectively.

Table 6-7: Disclosure specific provisions compliance levels for the full sample

Specific governance provisions in relation to disclosure	The degree of compliance among firms (%)										
	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
6. *Disclosure practices*											
Disc of current and future prosp (DCFP)	98	95	95	96	92	97	97	100	100	100	100
Disc statement of responsibility (DSRPFS)	100	100	100	100	100	100	100	100	100	100	100
Disc of adequate internal control (DSAIC)	61	19	24	39	40	59	65	77	78	83	86
Disc of compliance with the law (DSCL)	99	100	100	100	100	100	100	97	97	97	97
Disc compliance with corp. gov.(DSCCG)	70	19	24	39	48	76	74	90	94	94	91
Disc of being a going concern (DSBGC)	100	100	100	100	100	100	100	100	100	100	100
Observations	283	21	21	23	25	29	31	31	32	35	35

Even though the SECG Regulations and the revised GSE Listing Rules encourage disclosure practices among Ghanaian listed firms, the six disclosure specific provisions are not consistent with the provisions by both regulators. However, the sampled firms achieved perfect compliance (100%) with respect to the disclosure of the statement of directors' responsibility in the preparation of the financial statements (DSRPFS) and the disclosure of being a going concern (DSBGC) at the aggregate level and on yearly basis. In addition, 98% and 99% of the sampled firms complied with the disclosure of current and future prospect (DCFP) and the compliance with the law (DSCL) respectively. These findings suggest that even among the provisions that are not supported by the Companies Code, SECG Regulations and the GSE Listing Rules, the degree of compliance is comparatively high, suggesting that the formulation, implementation and enforcement of the Ghanaian Code has contributed to the disclosure compliance levels in the country.

Figure 6-2 presents a comparison of the aggregate degree of compliance with the *GCGI* across the twelve industries computed means.

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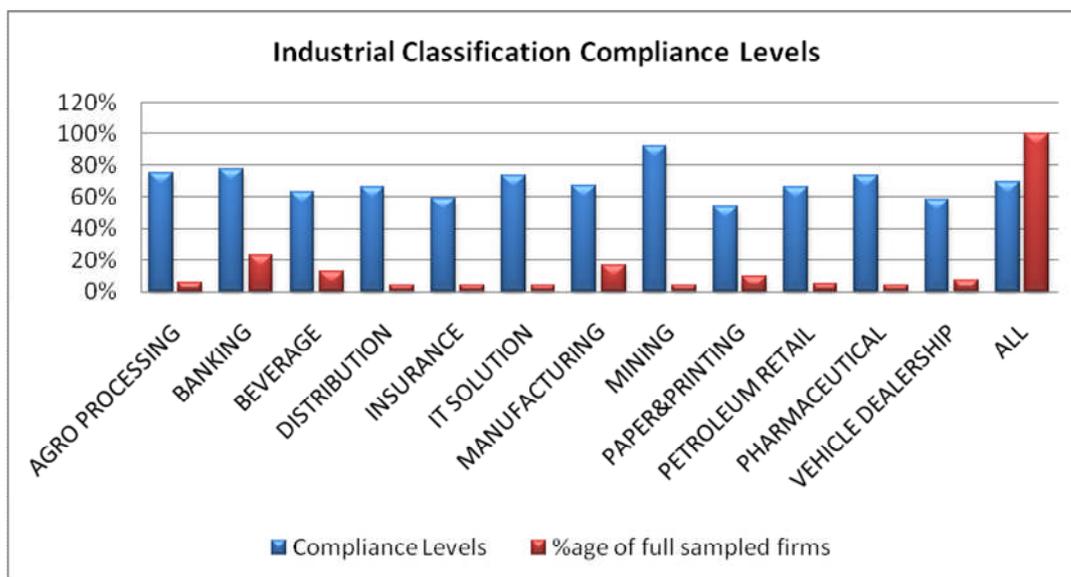
Figure 6-2: *GCGI* based on Industrial Classification for the full sample

As Figure 6-2 indicates above, the degree of compliance with the 36 Ghanaian Code provisions is consistently higher in the cases of mining (92%), banking (77%), agro processing (75%), IT solution (73%) and pharmaceutical (73%) than the overall mean *GCGI* (69%). Although, the compliance levels of each of the other 7 industries are lower than the *GCGI*, they did not fall below 50% compliance levels of the 36 Ghanaian Code provisions. In this respect, most industries have a mean *GCGI* close to or above 60%.The differences in compliance levels with governance standards by industry classification is consistent with prior governance index studies (Black *et al*, 2006a; Abdo and Fisher, 2007; Henry, 2008). In particular, Abdo and Fisher (2007) reported higher differences between industrial sectors with the banking sector topping the nine sectors with the G-Score of 70% compliance levels. They however reported that the media and publishing sector score below 50% with most of the sectors having a mean G-Score close to or above 60%. Arguably, the differences in the degree of compliance between industries is high with the mining sector by far achieving the highest (92%) compliance levels in terms of the mean *GCGI*, while the paper covers and printing sector recorded the lowest (54%) mean *GCGI*.

These compliance levels achieved by the Ghanaian listed firms are better than what Abdo and Fisher (2007) reported across the South African listed firms. One possible reason for the high degree of compliance in the mining industry is the dual listing status[25] which comes with additional corporate governance requirements in their respective overseas countries (i.e. Australia, South Africa, UK and the US) resulting in strong *GCGI* for this industry.

6.3 DESCRIPTIVE STATISTICS OF THE SUB-INDICES FOR THE FULL SAMPLE

Table 6-8 provides the degree of compliance among the sample firms with all the six sub-indices that form the Ghanaian Corporate Governance Index (*GCGI*). As indicated earlier, they include board composition, audit committee, remuneration committee, shareholder rights, financial affairs and auditing and disclosure practices.

Table 6-8: The degree of compliance with the sub-indices of the *GCGI* for the full sample

SUB-INDICES	Aggregate and year-by-year sub-indices (%)										
	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Board composition index	64	66	66	64	63	65	65	63	64	64	64
Audit committee index	61	17	21	38	39	72	75	81	81	72	70
Remuneration committee index	34	27	28	33	29	35	34	36	38	36	37
Shareholder rights index	74	67	67	73	73	74	73	75	75	79	79
Financial affairs and auditing index	91	73	75	81	84	93	94	97	97	99	99
Disclosure index	88	71	72	79	81	90	90	95	96	95	94
Observation	283	21	21	23	25	29	31	31	32	35	35

They key finding from Table 6-8 above is that the degree of compliance with the six sub-indices that form the *GCGI* improves over time. Apart from the

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[25] It is important to note that the 4% of the sampled firms representing the mining sector have multiple or dual listing status. Whereas AngloGold Ashanti (AGA) is listed on the GSE, ASX, NYSE and London Stock Exchange (LSE), Golden Star Resources (GSR) is listed on GSE and the NYSE.

board composition index in which there is a reduction of a 2 percentage points from 66% in 2000 to 64% in 2009 in the levels of compliance, the remaining 5 sub-indices experienced consistent significant improvements in the degree of compliance among the sampled firms. A closer look at the data for the reasons accounting for such 2 percentage points decrease indicates that the BODSZE (FD) compliance levels which form part of the board composition index, and as reported in Table 6-3, experienced significant reduction from 71% (43%) in 2000 to 51% (34%) in 2009 and might have accounted for the decrease in board composition index. Excluding the board composition index, the sub-index with the least increase over the ten-year period is the remuneration committee index recording a 10 percentage point improvement (i.e. from 27% in 2000 to 37% in 2009). However, this is reasonable because the degree of compliance is relatively low in 2000.

By contrast, the audit committee index experienced the highest increase over the ten-year period with a 53 percentage point increase (i.e. from 17% in 2000 to 70% in 2009) in the degree of compliance among the sampled firms. This is not surprising because the operation and effectiveness of the audit committee is supported by the SECG Regulations and the GSE Listing Rules. Unlike the audit committee index, the shareholder rights, financial affairs and auditing and disclosure indices recorded the highest compliance levels in 2000 and therefore the sampled firms experienced 12%, 26% and 23% increased percentage points respectively (i.e. from 67%, 73% and 71% in 2000 to 79%, 99% and 94% in 2009). Table 6-8 also compares the aggregate levels of compliance with the sub-indices across the sampled firms. In this respect, financial affairs and auditing index recorded the highest compliance levels at 91% followed by the disclosure index (88%); shareholder rights index (74%) and board composition index (64%) respectively. However, and as expected, the remuneration committee index recorded the least (34%) compliance levels. These findings also support the earlier results that the degree of compliance with corporate governance has significantly improved among Ghanaian listed firms.

6.4 DESCRIPTIVE STATISTICS OF PRE 2003 AND POST 2003 COMPLIANCE LEVELS FOR THE FULL SAMPLE

Table 6-9 presents the descriptive statistics for the pre 2003 and post 2003 degree of compliance with corporate governance for the full sampled firms.

Table 6-9: Pre 2003 and Post 2003 compliance levels of the *GCGI* (%)

INDEX	PRE (2000-2002)	POST (2004-2009)	OVERALL INDEX
Mean	57	73	69
Median	50	72.22	72.22
Mode	44	69[a]	69[a]
Std. Deviation	15.637	12.988	15.080
Minimum	42	39	39
Maximum	89	100	100
Observations	65	218	283

a. Multiple modes exist. The smallest value is shown.

In general, and as Table 6-9 indicates above, the full sampled firms mean of the *GCGI* is 69% and a standard deviation of 15.080 for the ten-year period is consistent with comparable prior index studies (Abdo and Fisher, 2007; Aggarwal *et al*, 2007). Whereas Abdo and Fisher (2007) found a mean G-Score of 61% in South Africa, Aggarwal *et al* (2007) in their cross-country study reported mean GOV_{44} of 69%, 61%, 57% and 56% for Canada, US, Finland and the UK respectively. These findings suggest that the Ghanaian listed firms' degree of compliance with corporate governance provisions is above average compared with the compliance levels in the other parts of the world. However, the pre 2003 and post 2003 *GCGI* show some notable differences between the subsamples. As Table 6-9 indicates above, the pre 2003 (i.e. from 2000 to 2002) recorded a mean of 57% and a standard deviation of 15.637, and post 2003 (i.e. from 2004 to 2009) mean of 73% and a standard deviation of 12.958. This shows a 28 percentage change (i.e. from 57 pre 2003 to 73% post 2003), the general pre and post percentage change not consistent with prior comparable index studies. For example, Cui *et al* (2008) reported a general change from a mean of 66% in 2001 to 71% in 2004 (i.e. an 8 percentage change). However, it can be noted that the

extent of change among Ghanaian listed firms is significantly higher than the change experienced by Australian listed firms, suggesting that the introduction of the Ghanaian Code is helping to improve corporate governance standards among the Ghanaian listed firms.

Arguably, one reason that might have contributed to the significant percentage change among Ghanaian listed firms is the study period covered in the pre and post publication of the Ghanaian Code. Whereas Cui *et al* (2008) covered only one year before and one year after the introduction of the ASX corporate governance recommendations, the degree of compliance among the Ghanaian listed firms in this thesis covers three years before and six years after the introduction of the Ghanaian Code. Fundamentally, the period of study covered in this thesis is supported by Yan-Leung *et al* (2008) who noted that it may take longer before the adoption of a particular code provisions is embedded on firms activities, hence the significant percentage change from pre to post degree of compliance with the Ghanaian Code. More importantly, and as Table 6-9 indicates above, the descriptive statistics also show large variability (large standard deviations) in the degree of compliance with the overall as well as the pre 2003 and post 2003 *GCGI*, suggesting that the Ghanaian Code provisions and the sampled firms have been satisfactorily selected to achieve sufficient variation. As indicated earlier, this may minimize potential selection bias that has limited much of the prior governance-performance relationship studies (Klapper and Love, 2004; Durnev and Kim, 2005; Chen *et al*, 2009; Morey *et al*, 2009).

Table 6-10 indicates the mean index for both pre 2003 and post 2003 degree of compliance with the Ghanaian Code provisions for each of the six sub-indices of the *GCGI*. The last two columns show the percentage increase (decrease) and the percentage change from pre (2000-2002) and post (2004-2009) compliance levels of the Ghanaian Code provisions.

Table 6-10: Pre 2003 and Post 2003 compliance levels of the sub-indices (%)

SUB-INDEX	PRE (2000-2002) Mean %	POST (2004-2009) Mean %	Increase or (Decrease)	% CHANGE
Board Composition Index	65	64	(1)	(1.5)
Audit Committee Index	26	75	49	188
Remuneration Committee Index	29	36	7	24
Shareholder Rights Index	69	76	7	10
Financial Affairs&Auditing Index	77	97	20	26
Disclosure Index	74	93	19	26
Mean	**57**	**73**	**16**	**28**

From the Table 6-10 above, the best and worst compliance levels of the sub-indices are clearly indicated. As indicated earlier, a comparison of the pre 2003 and post 2003 shows a positive change of 28% degree of compliance among the full sampled firms. This further demonstrates an increase in quantity and quality of corporate governance provisions adopted by firms, as they try to understand many of the provisions of the Ghanaian Code. It is a reasonable expectation that firms will continually seek to improve and enhance the levels of compliance with the Ghanaian Code provisions over time. As Table 6-10 indicates above, the biggest improvement from pre 2003 to post 2003 occurred in the audit committee index where a 188 positive percentage change was recorded. This would appear to bring into line with the current trends in the adoption of audit committee requirements worldwide. Another possible reason for the surge of the audit committee index in post 2003, and as indicated earlier, is the implementation initiatives by SECG Regulations and the GSE Listing Rules during 2004 to 2009, where the audit committee related provisions are consistent with the provisions of these regulations. It must be also emphasized that the audit committee substantially contributed into the post 2003 *GCGI* degree of compliance.

The lowest sub-index in each period of assessment was the remuneration committee index (i.e. 29% in pre 2003 and 36% in post 2003), indicating

that not all listed firms appear to understand the importance and role of the remuneration committee. As indicated earlier in Table 6-4, the highest specific provisions compliance level was the aggregate compensation paid to directors, given that the Ghanaian Companies Code require the total compensation paid to the current and previous directors to be recorded in the firm's annual reports. However, and as Table 6-10 indicates above, the remuneration committee index recorded 24 percentage change, a little lower than the financial affairs and auditing and disclosure indices that recorded 26 and 26 percentage changes respectively, even though the degree of compliance in each period is at the highest levels for both indices. Arguably, the shareholder rights index recorded the highest compliance levels in pre 2003 but with an insignificant percentage change (10) compared with the percentage change (24) in remuneration committee index. This suggests that, although the remuneration committee index is at the lowest level in each period, it experienced significantly more improvement from pre 2003 to post 2003 than the shareholder rights.

Of particular concern is the reduction of the degree of compliance (i.e. a negative 1 percentage change) registered for board composition index[26]. This sub-index included aspects of governance relating to the board size, an important vehicle for promoting effectiveness and ensuring representational needs of the board for decision making. Also, and as indicated in subsection 4.2.2, empirical findings suggest that board size does matter to firm performance. In this respect, the Ghanaian listed firms are expected to have a board size between eight and sixteen members. However, and as noted in Table 6-2, the degree of compliance with the board size specific provisions have affected the board composition index negatively. This suggests that listed firms have not come to terms with the importance and the role played by having a representational board size for effective board decision making.

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[26] The board composition index was based on the degree of compliance with the following Ghanaian Code provisions: role separation, frequency of board meetings, board size, proportion of INEDs, existence of finance director and office of the company secretary.

6.5 DESCRIPTIVE STATISTICS OF OTHER SPECIFIC GOVERNANCE MECHANISMS

Tables 6-11 to 6-14 report the descriptive statistics of other specific corporate governance mechanisms

Table 6-11: Descriptive statistics for the board size based on the full sample

BOARD SIZE	Year-by-year board size										
	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Mean	8.52	9	9	9	8	8	8	9	8	8	8
Median	8	9	9	9	9	8	8	8	8	7	7
Mode	7	7	9	9	9	8	7	7	7	7	7
Std Deviation	2.154	2.364	2.265	1.817	2.039	2.128	2.363	2.623	1.951	2.007	2.002
Minimum	4	5	5	5	5	5	5	5	5	4	5
Maximum	18	15	13	13	12	15	17	18	14	13	14
Observations	283	21	21	23	25	29	31	31	32	35	35

As Table 6-11 indicates above, board size ranges from a minimum of 4 to a maximum of 18 with the overall mean of 8.52 of the listed firms studied. This finding is very important because it is within the recommended efficient and effective mean board size (i.e. between 8 and 9) as reported by Lipton and Lorsch (1992). However, the respective year-by-year mean board size reduced from 9 in 2000 to 8 in 2009. That notwithstanding, the overall mean board size as well as year-by-year means are within the provisions of the Ghanaian Code. As indicated in chapter three, it recommends that a listed firm must have a board size ranging from a minimum of eight to a maximum of sixteen. Arguably, the mean board size of 8.52 is also consistent with the findings of prior studies in Ghana (Kyereboah-Coleman and Biekpe; 2006a; 2006b). Whereas Kyereboah-Coleman and Biekpe (2006a) reported the mean board size of 8.22, with a minimum and a maximum of 5 and 13, Kyereboah-Coleman and Biekpe (2006b), and in particular focusing on the Ghanaian listed and non-listed banks, found a mean board size of 9.82 with a minimum of 4 and a maximum of 15 respectively. These findings are of particular importance because the overall mean board size and the year-by-

year averages in this thesis show that the Ghanaian firms have relatively moderate board sizes, suggesting efficient and effective boards.

Table 6-12 provides pre 2003 and post 2003 descriptive statistics of board size for the full sampled firms.

Table 6-12: Pre 2003 and Post 2003 board size

BOARD SIZE	PRE (2000-2002)	POST (2004-2009)	ALL
Mean	9.03	8.17	8.52
Median	9	8	8
Mode	9	7	7
Std. Deviation	2.121	2.146	2.154
Minimum	5	4	4
Maximum	15	18	18
Observations	65	218	283

As Table 6-12 indicates above, the pre 2003 recorded a mean board size of 9.03 and a standard deviation of 2.121, while the post 2003 mean board size was 8.17 with a standard deviation of 2.146. This shows a decrease of about 1 average board size from 9.03 during pre 2003 to 8.17 post 2003, the findings consistent with prior studies in the UK. For example, Cosh and Hughes (1997a) reported a decline in average board size from 14 in 1980/81 to 13 in 1995/96 and further reduced to 11 in 2005/06 as reported by Cosh *et al* (2008), suggesting that the adoption of a code of good corporate governance causes the average board size to decline over time. However, this is not the case for the US firms as they experienced decline in the average board size pre 2002 by 5.6%, but this was reversed post 2002 (i.e. after the introduction of SOX) to 8.4% increase as reported by Linck *et al* (2009). This suggests that, whereas the findings in this thesis based on the principles-based approach to corporate governance is consistent with the UK studies, the rules-based approach to corporate governance findings in the US after the introduction of SOX is in the opposite direction with average board

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size increasing. This difference is very important and worth looking into because the principles-based approach to corporate governance appears to provide some flexibility which encourages firms to choose the board sizes that fit into their business objectives, hence the decline over time. In particular, and as Lipton and Lorsch (1992) showed that larger board size is less effective for firm performance, the principles-based approach to corporate governance findings appears to achieve efficient and effective board sizes in order to improve their firm performance.

Table 6-13: Descriptive statistics for the proportion of NEDs based on the full sample

PROP OF NEDS	Year-by-year proportion of NEDs (%)										
	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Mean	76	74	75	76	75	76	75	75	76	76	77
Median	80	80	80	80	80	80	78	80	80	78	80
Mode	86	86	89	89	80	88	88	86	86	86	86
Std Deviation	13.096	16.303	15.283	13.968	13.356	13.657	12.158	13.599	12.479	12.481	11.289
Minimum	22	22	30	40	40	40	50	40	40	43	44
Maximum	91	90	90	90	90	90	90	90	90	91	91
Observations	283	21	21	22	25	29	31	31	32	35	35

Table 6-13 above reports the proportion of non-executive directors on the Ghanaian boards. It clearly indicates that the Ghanaian corporate boards on average of 76% are dominated by non-executive directors with a minimum of 22% and a maximum of 91% for the full sampled firms. Arguably, and consistent with other specific governance mechanisms, the average percentage point increased from 74% in 2000 to 77% in 2009. Although, the Ghanaian boards experienced insignificant increase in relation to the proportion of non-executive directors on the board, they are more independent. These findings are in line with John and Senbet (1998) who noted that the more outsiders there are on the board, the more independent the board. However, this evidence is not supported by prior Ghanaian studies (Kyereboah-Coleman and Biekpe, 2006b; Abor and Biekpe, 2007). For example, Kyereboah-Coleman and Biekpe (2006b) reported an average of

25% of outside directors on the Ghanaian board across listed and non-listed banks, suggesting that the Ghanaian banks boards are less independent. That notwithstanding, it can be stated that the governance data used in their study were not objectively assessed but rather based on questionnaire administration and interviews, which might not have reflected the governance data over time. Also, and contrary to this thesis, the non-listed banks that were part of the sample used in their study are not required to adopt the Ghanaian Code even if it was in place during the study period. Arguably, this might have caused the differences in findings across studies in Ghana.

Table 6-14: Pre 2003 and Post 2003 proportion of NEDs

PROP OF NEDs	PRE (2000-2002)	POST (2004-2009)	ALL
Mean	75	76	76
Median	80	80	80
Mode	89	86	86
Std. Deviation	14.951	12.522	13.096
Minimum	22	40	22
Maximum	90	91	91
Observations	65	218	283

Table 6-14 above further presents the pre 2003 and post 2003 proportion of non-executive directors on the board. It appears that there have not been any significant differences between pre 2003 (75%) and post 2003 (76%) mean proportion of non-executive directors on the Ghanaian boards. This suggests that the Ghanaian boards were more independent before and after the introduction of the Ghanaian Code. This evidence is not surprising because in reading the annual reports, it was clear that most of the listed firms have the CEO as the only executive member of the board. In particular, and because of the moderate board sizes across the Ghanaian listed firms, they prefer to engage the services of managers to be the head of various departments but not executive directors as practised in the other countries.

6.6   DIFFERENCES IN THE DEGREE OF COMPLIANCE BASED ON PRE 2003 AND POST 2003 *GCGI*

To investigate whether there are significant differences in the degree of compliance with corporate governance during pre 2003 and post 2003 introduction of the Ghanaian Code*,* two statistical tests were performed including independent-samples T test and non-parametric Mann-Whitney U Test respectively. The first hypothesis in this thesis on the improvement in the degree of compliance from pre 2003 to post 2003 by the Ghanaian listed firms was tested in the following form:

Ho$_1$:   ***There is significant improvement in the degree of compliance with corporate governance practices by listed firms during pre 2003 and post 2003 introduction of the Ghanaian Code.***

Table 6-15 reports the summary results of the differences in pre 2003 and post 2003 *GCGI* as well as its sub-indices across Ghanaian listed firms. The independent samples *t-test* and the Mann-Whitney U Test support hypothesis one that there is significant improvement in the degree of compliance with corporate governance practices by listed firms during pre 2003 and post 2003 introduction of the Ghanaian Code. This suggests that the sampled firms were more compliant after the introduction of the Ghanaian Code than when the code was not in place. As *Panel A* of Table 6-15 indicates below, the overall *GCGI* results has a *t=-7.232* and p-value = .000, indicating a real improvement in the means between pre 2003 and post 2003 introduction of the Ghanaian Code. The real improvement in means *GCGI* is also supported by the Mann-Whitney U Test with *z=-6.126* and p-value = .000. To see the direction, it is important to look once again at the means of the two groups. Post 2003, it turns out, first to have the degree of compliance at a higher mean *GCGI* (73 vs. 57) than pre 2003, suggesting the possibility of different findings based on the whole as well as the pre 2003 and post 2003 *GCGI*.

Table 6-15: Differences in *GCGI* across Ghanaian listed firms (%)

INDEX	PRE (2000-2002) Mean %	POST (2004-2009) Mean %	T-TEST	MANN WHITNEY U Test
Panel A: Overall index				
GCGI	57	73	-7.232***	-6.126***
Panel B: Sub-indices				
BOARDINDEX	65	64	0.563	-0.747
AUCOMINDEX	26	75	-7.933***	-6.780***
RECOMINDEX	29	36	-1.511	-1.695
SHOLDINDEX	69	76	-4.167***	-3.877***
FAAINDEX	77	97	-11.405***	-10.035***
DISCINDEX	74	93	-8.851***	-7.644***

Note: The *t-test* and test statistics in columns 4 and 5 are the independent-samples *t-test* and Mann Whitney U test based on pre 2003 and post 2003 *GCGI* (Ghanaian corporate governance index) and its sub-indices. The sub-indices include BOARDINDEX (board composition index), AUCOMINDEX (audit committee index), RECOMINDEX (remuneration committee index), SHOLDINDEX (shareholder rights index), FAAINDEX (financial affairs and auditing index) and DISCINDEX (disclosure index). The mean differences in panel *A* test for equality of means between pre 2003 and post 2003 of the overall *GCGI*, while the mean differences in Panel *B* test for equality of means between pre 2003 and post 2003 sub-indices. A mean difference with (***) indicates that the null hypothesis that the means are equal is rejected at the 1% significant level.

As *Panel B* of Table 6-15 indicates above, the differences in compliance based on the pre 2003 and post 2003 sub-indices were tested where four out of the six sub-indices recorded significant improvement. In particular, AUCOMIDEX, SHOLDINDEX, FAAINDEX and DISCINDEX all recorded significant differences from pre 2003 to post 2003 introduction of the Ghanaian Code at 1% significant level in respect of both tests in columns 4 and 5. Although, and as *Panel B* of Table 6-15 indicates above, the BOARDINDEX and the RECOMINDEX recorded some differences but these are not significant, indicating that the different sub-indices should not be used in isolation because each of the pre 2003 and post 2003 sub-indices can affect firm performance differently.

However, the analyses based on pre 2003 and post 2003 *GCGI* and its sub-indices may bring out different sets of governance variables which can influence firm performance, thus helping to present a clearer explanation on the governance-performance relationship findings in chapter eight. Researchers who provide only post introduction of a particular code of

corporate governance index in their study should interpret the results in context specific to the governance index used. For example, if an investigation of the impact of a particular code provisions on firm performance is the focus of the study, then the period where there was no code on corporate governance should also be investigated in order to ascertain the real effect of the adoption of a particular code provisions on firm performance. This is particularly important because it will help to distinguish between governance-performance relationships findings before and after the introduction of a particular code of corporate governance

Fundamentally, the evidence of differences in means confirms significant improvement in corporate governance standards across the sampled firms from pre 2003 to post 2003 introduction of the Ghanaian Code. This finding is also supported by Aguilera and Cuervo-Cazurra (2009) who noted that the adoption of a code of good corporate governance appears to have generally improved the corporate governance standards of countries that have adopted them. For example, prior index studies such as Shabbir and Padgett (2008), Cui *et al* (2008), Henry (2008), Ntim (2009), amongst others, have all reported improvement in their listed firms' corporate governance standards after the adoption of code of best practices in the UK, Australia and South Africa respectively. Notably, the period of code of good corporate governance adoption witnessed improved compliance compared to the period with no formal adoption of code of good corporate governance as established in this thesis.

6.7   SUMMARY OF RESULTS AND DISCUSSION

The degree of compliance with corporate governance provisions in the annual reports across Ghanaian listed firms was investigated from 2000-2009. These were the overall *GCGI* for the full sampled firms, sub-indices, pre 2003 and post 2003 levels of compliance as well as other specific governance

mechanisms. The nine out of the thirty-six *GCGI* framework which were least compliant include the frequency of board meetings, existence of finance director, members of audit committee with adequate financial knowledge, existence of a remuneration committee, composition of remuneration committee, disclosure of remuneration committee membership, non-executive director as the chairman of remuneration committee, board remuneration in stock and the opportunity for shareholders to vote by mail. A majority of firms, however on average, complied with the remaining twenty-seven of the *GCGI* framework from 2000 to 2009.

Arguably, the introduction of the Ghanaian Code did improve significantly the degree of compliance with corporate governance by the listed firms considered in this thesis. In particular, there were changes in the levels of compliance with corporate governance across the listed firms in the entire thirty-six *GCGI* framework with some decreasing and others increasing in the degree of compliance after the formal adoption of the Ghanaian Code. That notwithstanding, the listed firms considered in this thesis had adopted thirty-four out of the thirty-six *GCGI* framework prior to the formal introduction of the Ghanaian Code where only frequency of board meetings and the opportunity to vote by mail experienced non-compliance. However, the formal adoption of the Ghanaian Code did not make any significant difference among the nine provisions indicated earlier in this section. It was also observed during the reading of the annual reports that twelve of the provisions supported by either the Companies Code or SECG Regulations or GSE Listing Rules experienced perfect compliance throughout the ten-year period by the listed firms studied. Overall, the trend and behaviour of the *GCGI* over time is positive with statistically significant improvement among listed firms.

Grouping the listed firms into industrial categories, mining sector experienced the highest compliance level in relation to the *GCGI* over time*,* with the paper covers and printing sector scoring the lowest *GCGI*. The mining sector with

the highest degree of compliance is not surprising because the listed firms in this sector were the only firms among the sampled firms who had dual listing in countries with strong corporate governance frameworks of which the Ghanaian Code conformed to the requirements. As a result, compliance with these governance provisions amounted to compliance with the Ghanaian Code provisions. The major area of concern to which the Ghanaian Code has to direct attention is the absence of any provision regarding the establishment of a nomination committee. The observation by McKnight and Weir (2009) that the nomination committee's key function is to ensure that director appointments, whether executive or non-executive, are made on merit rather than patronage does not appear to be the case in Ghana as the provision for the establishment of a nomination committee is not addressed by the Ghanaian Code.

That notwithstanding, two further problems with the adoption of the Ghanaian Code provisions across listed firms were identified. Based on the 'comply or explain philosophy, there was complete lack of explanation for non-compliance by the listed firms in their annual reports to shareholders, given that the Ghanaian Code mandates directors' to provide explanation for one individual combining the roles of the CEO and the Chairman. In this respect, some listed firms consistently combined the two roles during the ten year period without providing any explanation to shareholders in the annual report. In other cases, the Ghanaian Code has not been subjected to revision since its introduction and therefore has exhibited some inconsistencies with other regulatory frameworks governing the operation of companies in Ghana. In particular, the observed pattern of the distribution of the thirty-six *GCGI* framework investigated in this thesis provides clear indication of non-compliance of specific provisions that are not backed by the Companies Code, SECG Regulations or the GSE Listing Rules. In this respect, the SECG and the GSE must strengthen their effort in improving corporate governance practices in Ghana.

The analyses based on the six sub-indices that form the *GCGI* also experienced consistent improvement over time in the degree of compliance with the Ghanaian Code. However, the listed firms appear not to value the importance attached to a remuneration committee with the least compliance levels compared with other five sub-indices. The least compliance level of the remuneration committee index is not surprising because five out of the six specific provisions scored less than 30% compliance levels. Consequently, the least compliance with the remuneration committee index affected the overall *GCGI*. That notwithstanding, the six sub-indices with different provisions may bring out different sets of governance indices influencing firm performance which can help provide a clearer explanation or picture and a richer understanding of which sub-indices are more influential to firm performance. This, therefore, justifies grouping of the thirty-six *GCGI* framework into sub-indices for the association testing between firm performance measures used in chapter eight.

Arguably, the analyses of the other specific corporate governance mechanisms have also shown some interesting findings. The board sizes of the listed firms studied appears to be moderate, making the Ghanaian boards more efficient and effective. However, the recommendations of the Ghanaian Code for listed firms to have a minimum of eight and a maximum of sixteen board size have affected Ghanaian boards marginally to decrease over time. That notwithstanding, the mean board size was within the Ghanaian Code recommendations. This is particularly important because the *GCGI* only focused on whether the listed firms have board sizes between eight and sixteen but not the absolute number for the full sample. In the association testing in chapter eight, this will provide further evidence whether the compliance index or the absolute board size is more important to firm performance. In other cases, the Ghanaian boards appear to be more independent before and after the introduction of the Ghanaian Code with most having the CEO as the only executive board member.

In general, the findings suggest variability in the degree of compliance during pre 2003 and post 2003 *GCGI*. For example, the post 2003 experienced higher compliance level than the pre 2003. This is very important because it can help to test the association between pre 2003 as well as post 2003 *GCGI* and firm performance in chapter eight. This association testing can also help to understand whether the formal adoption of the Ghanaian Code matters to firm performance or not. In particular, the improvement in the *GCGI* from pre 2003 to post 2003 may help to explain improvement in firm performance during the same period. The post 2003 higher degree of compliance with the Ghanaian Code is also indicative of a formal adoption of the Ghanaian Code provisions by the listed firms studied. Overall, the *GCGI* experienced significant improvement from pre 2003 to post 2003 introduction of the Ghanaian Code.

6.8   CHAPTER SUMMARY

This chapter has presented the results of the degree of compliance with the Ghanaian Code provisions across listed firms. The impact of the Ghanaian Code provisions on the degree of compliance with corporate governance was investigated during pre 2003 and post 2003. Given that the adoption of good corporate governance enhances firm performance, this chapter has so far presented only a partial insight into the governance-performance relationship in Ghana. The next chapter will discuss the descriptive statistics and the test of panel regression assumptions.

CHAPTER SEVEN

DESCRIPTIVE STATISTICS AND THE TEST OF PANEL REGRESSION ASSUMPTIONS

7.1   INTRODUCTION

In the previous chapter, the analysis of the degree of compliance with the Ghanaian Code provisions was considered. This chapter discusses the data and the test of panel regression assumptions. In particular, it seeks to achieve three main objectives. First, it presents the descriptive statistics for the dependent (firm performance) and the control variables. Second, correlation analysis is conducted to examine the relationship between all the variables used in this thesis. Finally, it tests the panel regression assumptions to determine whether pooled OLS and the alternative random or fixed effects regression model should be used as the method of estimation. The chapter is structured as follows. Section 7.2 reports the descriptive statistics for the dependent and the control variables. Section 7.3 presents correlation analysis for all the variables used in this thesis. Section 7.4 tests the panel regression assumptions. Section 7.5 provides summary of the results and discussion, while section 7.6 summarises the chapter.

7.2   DESCRIPTIVE STATISTICS OF THE FINANCIAL PERFORMANCE MEASURES AND CONTROL VARIABLES

This section reports the detailed descriptive statistics for the dependent (firm performance) and the control variables. Whereas, subsection 7.2.1 focuses on the descriptive statistics of the dependent variables, subsection 7.2.2 presents the descriptive statistics of the control variables.

7.2.1 Descriptive statistics of the dependent (financial performance) variables

Table 7-1 reports the descriptive statistics of the dependent variables based on the full sampled firms.

Table 7-1: Summary descriptive statistics of the dependent variables based on all (283) firm-year observations

DEPENDENT VARIABLES	Year-by-year performance variables										
	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Panel A: Return on assets (%)											
Mean	5.69	9.20	12.38	8.91	9.59	5.77	5.44	5.28	3.73	1.33	1.40
Std. Deviation	11.32	12.34	15.83	8.29	8.86	9.06	9.41	8.29	9.34	12.75	13.48
Minimum	-20.86	-10.25	-6.32	-6.51	-9.24	-18.42	-16.76	-16.26	-22.03	-43.1	-59.74
Maximum	31.59	44.65	70.67	25.19	26.53	24.35	22.64	26.93	22.77	22.55	29.65
Panel B: Return on equity (%)											
Mean	18.67	39.67	26.77	26.53	30.35	20.35	16.01	16.64	12.18	6.52	8.52
Std. Deviation	39.77	61.48	79.81	26.44	33.68	36.82	29.09	23.76	35.83	32.94	22.59
Minimum	-31.88	21.44	-40.10	-14.16	-24.9	-55.64	-57.99	-29.75	-46.93	-33.12	-37.52
Maximum	68.25	53.6	70.30	93.64	54.9	61.22	96.76	91.47	62.90	51.81	45.90
Panel C: Tobin's Q											
Mean	1.13	1.32	1.51	1.39	1.14	1.68	1.39	1.14	0.68	0.77	0.68
Std. Deviation	1.67	1.34	1.64	1.55	0.98	2.92	2.72	1.58	0.36	0.76	0.96
Minimum	-0.06	0.40	0.37	0.24	0.38	0.21	0.10	0.16	0.06	0.09	-2.59
Maximum	7.01	4.97	5.95	5.92	3.91	15.00	15.00	7.85	1.86	4.84	4.81
Observations	283	21	21	23	25	29	31	31	32	35	35

In terms of the accounting-based performance measures, and as can be seen from Panel *A* of Table 7-1, the pattern of the distribution over the ten year period has the highest mean (12.38%) of *ROA* in the year 2001 but with consistent decline in profitability to the lowest mean (1.33%) of ROA in 2008. However, the overall mean 5.69% and the standard deviation of 11.32% during the ten year period suggest a significant variation in ROA across the sampled firms. As an alternative to ROA, Panel *B* of Table 7-1

shows that ROE was at its highest (39.67%) in the year 2000 with the lowest (6.52%) recorded in 2008. The overall mean of 18.67% and the standard deviation of 39.77% over the ten year period show a significant variation among the sampled firms. In comparison, the Ghanaian firms appear to be performing better in relation to ROE than ROA based on the year-by-year percentage points and the overall mean. The significant differences in the average accounting-based performance measures (i.e. ROA = 5.69% and ROE = 18.67%) for the sampled firms will provide interesting results for the hypotheses testing in chapter eight.

By contrast, and as can be seen from Panel *C* of Table 7-1, the Q-ratio as the market-based performance measure was at its highest mean (1.68) in the year 2004. This appears to be because, the market value, and in line with the overall declining profitability of the firms, was falling during 2001, 2002 and 2003. The Q-ratio appears to have made a recovery in the year 2004 but with a significant decline to a mean of 0.68 in 2009. However, the overall mean (1.13) of Q-ratio for the full sample and the standard deviation of 1.67 suggest that there is significant variation in the market-based performance measure across the sampled firms. It is important to note here that, as firms experienced a decline in their profitability in 2004, reflected in ROA and ROE, the Q-ratio recovered that year. However, both accounting-based and the market-based performance measures consistently decline up to the year end 2008 with slight increase in 2009. Arguably, the decline in profitability for both accounting-based and the market-based performance measures appears to be partly because of the global recession during the years 2007 to 2009. The firms appear to have made substantial decline in profitability and market value as reflected in the ROA, ROE and Q-ratio during 2007 to 2009.

Interestingly, the mean ROA, ROE and the Q-ratio as shown in Panel *A*, *B* and *C* of Table 7-1 are not consistent with prior studies in Ghana (Kyereboah-Coleman and Biekpe, 2006a; Abor and Biekpe, 2007; Kyereboah-Coleman and Amidu, 2008). For example, Kyereboah-Coleman

and Biekpe (2006a) reported mean ROA and Q-ratio of 20% and 0.67 among Ghanaian listed firms compared with 5.69% and 1.13 found in this thesis. This suggests that the Ghanaian firms performed slightly better with regards to Q-ratio than ROA compared with Kyereboah-Coleman and Biekpe (2006a) findings. Using SMEs in their study, Kyereboah-Coleman and Amidu (2008) also reported mean ROA and ROE of 15.28% and 47.50% respectively. Given the study period and the sampled firms used in each study, the differences in performance measures in Ghana are not surprising because the Ghanaian economy might have performed poorly in 2007, 2008 and 2009 which has affected the overall mean of ROA, ROE and Q-ratio in this thesis.

Table 7-2 presents the descriptive statistics of the pre 2003 and post 2003 financial performance measures. As shown in column 6 of Table 7-2, there are significant differences between pre 2003 and post 2003 mean accounting-based firm performance measures used in this thesis at 1% significant level. This suggests that the Ghanaian firms on average performed better during pre 2003 than post 2003. In particular, the pre 2003 recorded a mean ROA of 10.13% compared with 4.38% during post 2003. The difference of 5.75% decrease over the two periods represents 57% change in ROA among the sampled firms. That notwithstanding, the pre 2003 and post 2003 ROA are not consistent with the work of Cui *et al* (2008). Whereas Ghanaian firms experienced decrease in mean ROA from 10.13% to 4.38% (i.e. from pre 2003 to post 2003), Cui *et al* (2008) reported mean ROA marginally increasing from 6.4% in 2001 to 6.68% in 2004 respectively.

However, the operational environment, sample size and the study period of the two studies are significantly different and might have accounted for the differences. As Table 7-2 indicates below, the pre 2003 also recorded a mean ROE of 30.86% compared with 15.03% post 2003. Although, the decrease (15.83%) in the percentage point is higher than ROA, the percentage change (51%) in ROE is less than what was recorded by ROA (57%). That notwithstanding, both accounting-based performance measures experienced

significant changes between pre 2003 and post 2003 introduction of the Ghanaian Code. Arguably, and as in line with changing profitability, the market-based performance measure also experienced differences but not at the rate found in both accounting-based performance measures. In this regard, the pre 2003 recorded a mean Q-ratio of 1.41 compared with 1.05 post 2003, indicating insignificant decrease of 0.36 over the two periods. This represents 26% change, a figure that is approximately half of the change experienced by ROA (57%) and ROE (51%) respectively.

Table 7-2: Pre 2003 and Post 2003 dependent variables

DEPENDENT VARIABLES	PRE (2000-2002) Mean	POST (2004-2009) Mean	Increase or (Decrease)	% CHANGE	T-test
Return on assets (%)	10.13	4.38	(5.75)	(57)	3.67***
Return on equity (%)	30.86	15.03	(15.83)	(51)	2.85***
Tobin's Q	1.41	1.05	(0.36)	(26)	1.54
Observations	65	193			

Note: The *t-test* in column 6 is the independent samples *t-test* for equality of means between pre 2003 and post 2003 firm performance. The mean difference with (***) indicates that the null hypothesis that the means are equal is rejected at 1% significant level.

Fundamentally, most of the firms appear not to be doing well with respect to post 2003 firm performance measures compared with pre 2003. However, the change experienced by the accounting-based performance measures (ROA = 57% and ROE = 51%) between the two periods is significantly higher than the change in the market-based performance measure (Q-ratio = 26%). It is important to note that the different levels of the firm performance measures between the two periods will provide interesting results in the hypotheses testing in chapter eight.

7.2.2 Descriptive statistics of the control variables

Panels *A* to *D* of Table 7-3 report the summary descriptive statistics for the control variables. It was found that, and as Panel *A* of Table 7-3 shows, the

mean *GEAR* increased from 19.50% in 2000 to 33.68% in 2009 with the overall average of 26.95% for the full sample. This suggests that the Ghanaian listed firms are moderately geared, the findings supported by prior studies in Ghana (Abor and Biekpe, 2007), who reported SMEs to have *GEAR* of about 38%. Panel *B* of Table 7-3 suggests that the firm size as proxied by a natural logarithm of a firm's total assets increased from 6.22 in 2000 to 6.34 in 2009 with an overall mean of 6.50 and standard deviation of 1.32. This suggests that the average firm size during the study period did not experience any significant change.

Table 7-3: Summary descriptive statistics of the control variables based on all (283) firm-year observations

CONTROL VARIABLES	ALL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
					Year-by-year control variables						
Panel A: Gear (%)											
Mean	26.95	19.80	26.51	19.42	19.53	21.69	26.14	25.53	35.17	33.85	33.68
Std. Deviation	26.09	22.52	39.20	21.13	20.19	21.77	23.41	24.36	27.90	25.45	28.56
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	00.00	00.00
Maximum	73.53	83.16	80.32	80.34	80.72	74.78	72.39	85.97	87.94	85.01	87.87
Panel B: Firm Size											
Mean	6.50	6.22	6.29	6.39	6.64	6.73	6.87	6.88	6.24	6.28	6.34
Std. Deviation	1.32	1.34	1.35	1.32	1.35	1.30	1.20	1.12	1.37	1.42	1.39
Minimum	4.23	4.02	4.01	3.92	3.89	4.44	5.08	5.09	3.98	3.99	4.07
Maximum	8.83	8.34	8.44	8.54	8.72	8.78	8.85	9.03	9.06	9.22	9.28
Panel C: Sales Growth											
Mean	0.09	0.00	0.42	0.17	0.37	0.27	0.09	0.09	-0.71	0.22	0.14
Std. Deviation	0.52	0.00	0.36	0.24	0.43	0.63	0.40	0.38	0.43	0.54	0.35
Minimum	-0.57	0.00	-0.13	-0.19	-0.08	-0.53	-1.00	-1.00	-1.00	-1.00	-0.81
Maximum	1.36	0.00	1.52	0.85	2.03	3.30	1.02	1.30	0.77	2.01	0.81
Panel D: Firm Age											
Mean	32.78	32.33	33.33	32.35	33.12	33.10	33.94	31.00	32.25	32.66	33.66
Std. Deviation	13.99	12.88	12.88	14.08	13.82	13.73	13.46	15.07	14.89	14.85	14.85
Minimum	5.3	8	9	5	6	7	8	1	2	3	4
Maximum	60.5	56	57	58	59	60	61	62	63	64	65
Observations	283	21	21	23	25	29	31	31	32	35	35

As Panel *C* of Table 7-3 indicates above, and consistent with the ROA and ROE, the highest mean sales growth was recorded in 2001 at 0.42, but least in 2007 at -0.71. Overall, the mean combined firm's sales grew by 0.09 during the ten year period. In terms of firm age, and as can be seen from Panel *D* of Table 7-3, the Ghanaian listed firms are generally long established firms with a mean of about 33 years compared with the findings of Abor and Biekpe (2007) who reported SMEs age of about 10 years in Ghana.

Table 7-4 presents the descriptive statistics of pre 2003 and post 2003 control variables for the full sampled firms.

Table 7-4: Pre 2003 and Post 2003 control variables

CONTROL VARIABLES	PRE (2000-2002) Mean	POST (2004-2009) Mean	Increase or (Decrease)	% CHANGE	T-test
Gear (%)	21.83	28.48	6.65	30	-1.81
Firm Size	6.31	6.56	0.25	4	-1.70
Sales Growth	0.19	0.06	(0.13)	(68)	2.58***
Firm Age	32.66	32.81	0.15	0.45	-
Observations	65	193			

Note: The *t-test* in column 6 is the independent samples *t-test* for equality of means between pre 2003 and post 2003 control variables. The mean difference with (***) indicates that the null hypothesis that the means are equal is rejected at 1% significant level.

As Table 7-4 indicates above, *GEAR* increased from 21.83% in pre 2003 to 28.48% in post 2003, indicating 6.65% increase but not statistically significant. This represents a 30% positive change in *GEAR* between the two periods which could have been motivated by an insignificant 4% change in firm size. The average sales growth of the sampled firms grew from 0.19 in pre 2003 to 0.06 in post 2003, indicating 0.13 a statistically significant decrease between the two periods. This represents a significant negative 68% change, which may also be suggestive of a low level of firm performance post 2003, for which the analysis in this chapter found evidence of significant decrease in ROA, ROE and Q-ratio. In particular, the statistically significant decrease in profitability measured by ROA and ROE in post 2003,

discouraging investors to invest more in the shares of the firms over the period may have also affected the Q-ratio to decrease during the same period.

7.3   CORRELATION ANALYSIS FOR ALL THE VARIABLES

Table 7-5 reports Pearson's correlation matrix for the firm performance, corporate governance and the control variables of the sampled firms during the whole period. In particular, there are large positive correlation coefficients between the *GCGI* and its sub-indices (i.e. BOARDINDEX, AUCOMINDEX, RECOMINDEX, SHOLDINDEX, FAAINDEX and DISCINDEX). In addition, high collinearity also exists between ROA and ROE (0.69) and between BOARDINDEX and BOARDSIZE (0.73) as well as AUCOMINDEX highly correlated with RECOMINDEX (0.70), FAAINDEX (0.57) and DISCINDEX (0.73). Although, and similar to the work of Abdo and Fisher (2007), the equal weighting used for the different sub-indices in developing the *GCGI* makes no attempt to accurately mirror the relative importance of the specific governance provisions, it has the benefit of being transparent and does help for easy interpretation. It is important also to note here that, and following the work of Abdo and Fisher (2007), the decision not to weight sub-indices avoids double-counting by not assigning unjustified weights to some governance provisions which might have led to biases in the aggregate *GCGI*. That notwithstanding, and given the high collinearity, these variables will therefore be included in different regression models in chapter eight for empirical analysis.

Apart from the large correlation coefficients between the *GCGI* and its sub-indices during the whole period, ROA and ROE, BOARDINDEX and BOARDSIZE, AUCOMINDEX and RECOMINDEX, FAAINDEX as well as DISCINDEX, the Pearson correlation coefficients across other variables are moderately low, suggesting that there is no serious multicollinearity problem

between the variables. In particular, and based on the market-based performance measure, there is a positive correlation between the *GCGI* and the Q-ratio (i.e. 0.03). The BOARDINDEX, however, indicates the highest positive correlation, while the FAAINDEX and DISCINDEX have a negative correlation with Q-ratio. In respect of the accounting-based performance measures, there is a positive correlation between the *GCGI* and both ROE and ROA.

Table 7-6 reports the pre 2003 and post 2003 correlation matrix for the firm performance, corporate governance and the control variables of the sampled firms. As Table 7-6 indicates, the top right half represents the pre 2003 Pearson's correlation coefficients, while the bottom left of the table indicates post 2003 Pearson's coefficients. In this respect, there is high collinearity between the *GCGI* and its sub-indices during both periods. However, and as shown in Table 7-6, the Pearson's coefficients of the pre 2003 are higher than post 2003, indicating that the variables during both periods need to be included in separate regression models in chapter eight for empirical analysis. In addition, the *GCGI* is significant and positively correlated with both accounting-based (ROA and ROE) and the market-based (Q-ratio) performance measures pre 2003 period. This is however not the case for post 2003 where both the accounting-based and market-based firm performance measures indicate insignificant positive correlation with the *GCGI*. That notwithstanding, and similar to the earlier analysis, the Pearson's coefficients of other variables are relatively low.

Table 7-5: Correlation matrix of firm performance and all the continuous variables for the whole sample

	ROA	ROE	Q-ratio	GCGI	BOARD INDEX	AUCOM INDEX	RECOM INDEX	SHOLD INDEX	FAA INDEX	DISC INDEX	BODSIZE	PNEDs	GEAR	SIZE	GROWTH	AGE
ROA	1															
ROE	.685**	1														
Q-ratio	.177**	.184**	1													
GCGI	.001	.065	.032	1												
BOARD INDEX	.047	.168*	.157**	.481**	1											
AUCOM INDEX	-.038	.031	.018	.873**	.194**	1										
RECOM INDEX	.034	.094	.083	.679**	.337**	.700**	1									
SHOLD INDEX	.118*	.098	-.037	.460**	.286**	.229**	.164*	1								
FAA INDEX	-.093	-.097	-.088	.643**	.136*	.589**	.109	.397**	1							
DISC INDEX	-.022	-0.54	-0.85	.810**	.253**	.732**	.323**	.385**	.429**	1						
BODSIZE	.124*	.242**	.135*	.399**	.729**	.186**	.364**	.232**	-.021	.197**	1					
PNEDs	-.209**	-.165**	-.193**	.006	-.311**	.078	.185**	-.224**	-.093	.034	-.180**	1				
GEAR	-.214**	-.216**	.031	.177**	.137*	.150*	.216**	-.105	.135**	0.38	.139*	.130*	1			
SIZE	-.066	.027	-.112	.018	-.135*	.039	.093	-.024	.018	-.034	.129*	-.015	.197**	1		
GROWTH	.134*	.161**	.058	-.064	.028	-.070	.027	-.006	-.158**	-.128*	.070	.048	-.039	.144**	1	
AGE	.144**	-.005	-.045	-.102	.072	-.214**	-.008	.092	-.048	-.115	.002	-.025	-.189**	-.052	-.052	1

Notes: The table indicates Pearson's correlation coefficients. ** and * denote correlation is significant at the 1% and 5% level (two tailed). *ROA* is the return on assets, *ROE* is the return on equity, *Q-ratio* is the Tobin's Q, *GCGI* is the Ghanaian corporate governance index, *BOARDINDEX* is the board composition index, *AUCOMINDEX* is the audit committee index, *RECOMINDEX* is the remuneration committee index, *SHOLDINDEX* is the shareholder rights index, *FAAINDEX* is the financial affairs and auditing index, *DISCINDEX* is the disclosure index, *BODSIZE* is the board size, *PNEDs* is the proportion of non-executive directors, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age.

Table 7-6: Pre 2003 and Post 2003 correlation matrix of firm performance and all continuous variables

	ROA	ROE	Q-ratio	GCGI	BOARD INDEX	AUCOM INDEX	RECOM INDEX	SHOLD INDEX	FAA INDEX	DISC INDEX	BODSIZE	PNEDs	GEAR	SIZE	GROWTH	AGE
ROA	1	.623**	.374**	.476**	.181	.414**	.547**	.241	.109	.361**	.245*	-.332**	-.137	.028	-.070	.285*
ROE	.737**	1	.326**	.345**	.234	.321**	.444*	.118	-.036	.147	.252*	-.189	-.365**	.029	-.097	.149
Q-ratio	.100	.115	1	.465**	.354**	485**	.423**	.043	.097	.300*	.354*	-.303*	.020	-.193	-.207	-.198
GCGI	-.047	.034	-.039	1	.486**	.950**	.792**	.479**	.573**	.810**	.469**	-.199	.042	-.001	-.142	-.117
BOARD INDEX	-.005	.140*	.105	.575**	1	.309*	.285*	.192	.089	.353**	.819**	-.453**	.060	-.196	-.082	.082
AUCOM INDEX	-.068	.000	-.057	.797**	.212**	1	752**	.354**	536**	.755**	.287*	-.094	.000	-.053	-.125	-.221
RECOM INDEX	-.096	-.044	.016	.698**	.356**	.349**	1	.269**	.114	.442**	.439**	.055	.115	.080	-.281*	.060
SHOLD INDEX	.155*	.168*	.033	.378**	.340**	.052	.114	1	.323**	.244*	.268*	-.299*	-.100	.305*	.072	.132
FAA INDEX	.026	.042	-.088	.512**	.242**	.393**	.059	.327**	1	.718**	-.073	-.172	.064	.115	.076	-.274*
DISC INDEX	-.011	-.042	-.146*	.746**	.290**	.623**	.289**	.344**	.542**	1	.297*	-.208	.020	-.133	-.065	-.197
BODSIZE	.051	.227**	.067	.524**	.706**	.277**	.365**	.276**	.133*	.292**	1	-.317*	.242	.025	-.070	.080
PNEDs	-.159*	-.152*	-.160*	.077	-.264**	.146*	.226**	-.212**	-.123	.166	-.131	1	.205	-.081	.031	-.030
GEAR	-.220**	-.111	.048	.188*	.168*	.160*	.238**	-.149**	.098	-.026	.127	.097	1	.313*	-.153	-.180
SIZE	-.077	.051	-.083	-.024	-.155	.023	.089	-.162*	-.098	-.065	.174*	.005	.150*	1	.084	-.093
GROWTH	.152*	.244**	.084	.005	.041	-.003	.082	.013	-.161*	-.094	.078	.058	-.006	.169*	1	.053
AGE	.106	-.066	-.009	-.115	.070	-.252**	-.025	.083	.008	-.113	-.018	-.024	-.195**	-.042	-.067	1

Notes: The top right half of the table represents Pre 2003 Pearson's correlation coefficients, while the bottom left of the table indicates Post 2003 Pearson's correlation coefficients. ** and * denote correlation is significant at the 1% and 5% level (two tailed). *ROA* is the return on assets, *ROE* is the return on equity, *Q-ratio* is the Tobin's Q, *GCGI* is the Ghanaian corporate governance index, *BOARDINDEX* is the board composition index, *AUCOMINDEX* is the audit committee index, *RECOMINDEX* is the remuneration committee index, *SHOLDINDEX* is the shareholder rights index, *FAAINDEX* is the financial affairs and auditing index, *DISCINDEX* is the disclosure index, *BODSIZE* is the board size, *PNEDs* is the proportion of non-executive directors, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age.

7.4   TEST OF PANEL REGRESSION ASSUMPTIONS

As has been explained in section 5.5 of chapter five, panel data technique is used to test all the hypotheses that have been developed in chapter four. In this respect, the panel data regression assumptions are tested in this section to help choose between pooled OLS and the alternative random and fixed effects regression models. First, and as indicated in section 5.5 of chapter five, Breusch and Pagan (1980) Langrange Multiple (LM) test will be conducted to choose between pooled OLS and the alternative random or fixed effects. Following that, the Hausman specification test will help to differentiate between random and fixed effects regression models.

7.4.1 Choosing between pooled OLS and the alternative random and fixed effects

In a panel data analysis, the assumptions[27] underlying pooled OLS model are not likely to be met, and in particular, when there is unobserved heterogeneity which differs across the sampled firms. Thus, ignoring the heterogeneity makes the pooled OLS estimator inconsistent because the likely firm specific-effect cannot be addressed by the pooled OLS regression model. In this thesis, LM test will help to decide between pooled OLS regression and the alternative random or fixed effects regression. The null hypothesis in the LM test is that there is no significant difference across firms (i.e. no panel effect). Table 7-7 reports the test statistics which differentiate between pooled OLS regression and the alternative random or fixed effects regression. The results show that the pooled OLS regression model is inappropriate and the alternative random or fixed effects regression is preferable at this stage, suggesting that the null hypothesis of no significant difference across sampled firms in this thesis is rejected. For example, and as Table 7-7 indicates below, the regression models of the firm performance

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[27] For example, Green (2012) noted the classical model assumptions to include zero conditional mean of the error term, homoscedasticity, independence across observations, and strict exogeneity of the independent variables.

measures (i.e. ROA, ROE and Q-ratio) and the *GCGI* showed X^2 of 50.70, 92.71 and 148.09 (i.e. at 1 degrees of freedom with p-value = 0.0000) suggesting that the alternative of random or fixed effects regression is appropriate.

Table 7-7: Breusch-Pagan Langrange Multiplier (LM) test statistics

Variables	ROA		ROE		Q-ratio		Decision
	X^2	p-value	X^2	p-value	X^2	p-value	OLS, RE/FE
GCGI	50.70	0.0000	92.71	0.0000	148.09	0.0000	RE/FE
CEODUAL	56.44	0.0000	105.24	0.0000	158.89	0.0000	RE/FE
BODSIZE	48.00	0.0000	62.84	0.0000	110.30	0.0000	RE/FE
PNEDS	50.43	0.0000	101.72	0.0000	145.82	0.0000	RE/FE
AUCOM1	49.35	0.0000	100.59	0.0000	152.85	0.0000	RE/FE
RECOM1	53.13	0.0000	103.30	0.0000	148.32	0.0000	RE/FE

Note: Variables are defined as follows: return on assets (*ROA*), return on equity (*ROE*), Tobin's Q (*Q-ratio*), the Ghanaian corporate governance index (*GCGI*), CEO duality (*CEODUAL*), board size (*BODSIZE*), proportion of non-executive directors (*PNEDs*), audit committee (*AUCOM1*), remuneration committee (*RECOM1*) ordinary least square (*OLS*), random effects (*RE*) and fixed effects (*FE*). The X^2 represents the test of difference across firms with p-value at 1% significant level.

As Table 7-7 indicates above, the regression models of the firm performance measures and the specific governance mechanisms (i.e. CEODUAL, BODSIZE, PNEDs, AUCOM1 and RECOM1) are all in favour of random or fixed effects regression model rather than pooled OLS regression model due to the high value of X^2 (i.e. a minimum and a maximum of 48.00 and 158.89, respectively) at the 1% significant level. Arguably, putting all the five specific governance mechanisms in one regression model does not make any difference in choosing between pooled OLS and the alternative random or fixed effects regression model. In particular, the regression model based on ROA, ROE and Q-ratio provided X^2 of 41.73, 64.15 and 126.72 respectively, with the p-value = 0.0000 for all the three models. This evidence further suggests that the alternative of random or fixed effects regression is appropriate as an estimation method for the specific governance mechanisms.

7.4.2 The decision between random and fixed effects regression model

Given the suitability of the random effects or fixed effects as a method of estimation in this thesis, and following McKnight and Weir (2009), the Hausman specification test is used to differentiate between the two estimation methods for the hypotheses testing in chapter eight. In this respect, and as explained in subsection 5.5.2 of chapter five, the Hausman specification test *null hypothesis* is that there is no correlation between the unique errors and the independent variables used in the regression model, suggesting a test of strict exogeneity. The decision is as follows: if there is no correlation between the unique errors and the independent variables, random effects regression model is suitable. Otherwise, use the fixed effects model if there is correlation between the unique errors and the independent variables.

Table 7-8 reports the Hausman specification test and Wald statistics to differentiate between random effects and fixed effects regression models.

Table 7-8: Hausman specification test statistics (Random vs. Fixed)

Variables	GCGI			Specific Governance Mechanisms			Decision
	X^2	Critical Value (Wald Statistics)	P-value	X^2	Critical Value (Wald Statistics)	P-value	Random Vs. Fixed
ROA	45.01	11.07 (18.33)	0.0000	17.33	16.92 (26.44)	0.0438	Fixed effects
ROE	82.22	11.07 (35.83)	0.0000	21.61	16.92 (45.03)	0.0102	Fixed effects
Q-ratio	7.11	11.07 (1.22)	0.2129	22.51	16.92 (22.05)	0.0074	Random/ Fixed effects

Note: Variables are defined as follows: return on assets (*ROA*), return on equity (*ROE*), Tobin's Q (*Q-ratio*), the Ghanaian corporate governance index (*GCGI*). The specific governance mechanisms in one regression model represents CEO duality (*CEODUAL*), board size (*BODSIZE*), proportion of non-executive directors (*PNEDs*), audit committee (*AUCOM1*) and a remuneration committee (*RECOM1*). The X^2 represents the test of difference among random and fixed effects estimates with p-value at 5% significant level. The critical value represents Wald statistics of 5 and 9 degrees of freedom from the X^2 Table.

In respect of the specific governance mechanisms, and using ROA, ROE and Q-ratio as firm performance measures, the Hausman test gave X^2 of 17.33,

21.61 and 22.51 (*p-value=0.0438, 0.0102 and 0.0074*, respectively) as shown in Table 7-8, suggesting that the hypothesis of no correlation between the unique errors and the specific governance mechanisms (i.e. CEODUAL, BODSIZE, PNEDs, AUCOM1 and RECOM1) as independent variables is rejected at 5% significant level. In this respect, random effects regression model is rejected in favour of fixed effects regression model as a method of estimation in chapter eight. This evidence is further supported by the critical value from the X^2 table and the Wald statistics with 9 degrees of freedom. As can be seen from Table 7-8, the Wald statistics of ROA (26.44), ROE (45.03) and Q-ratio (22.05) are all higher than the critical value of 16.92 for all the three firm performance measures, indicating that the fixed effects regression model is appropriate to test the related hypotheses in chapter eight. In addition, Hausman test (*for the purposes of brevity is not reported here*) indicated that the hypothesis of no correlation between the unique errors and each of the specific governance mechanisms as independent variable supported the earlier findings of the suitability of the fixed effects regression model.

Using the *GCGI*, and as column 2 of Table 7-8 indicates above, the Hausman test provided X^2 of 45.01 (*p-value = 0.0000*) in relation to ROA as a performance measure, rejecting the null hypothesis of no correlation between the unique errors and the independent variable (*GCGI*) at 1% significant level. This suggests that the fixed effects regression model is appropriate with the ROA as a performance measure; evidence supported by the critical value and the Wald statistics with 5 degrees of freedom. As shown in Table 7-8, the critical value of 11.07 from the X^2 table with 5 degrees of freedom is lower than the Wald statistics of 18.33 hence the random effects regression model is rejected in favour of the fixed effects regression model. Further Hausman test (*for the purposes of brevity is not reported here*) based on the sub-indices (i.e. board composition index, audit committee index, remuneration committee index, shareholder right index, financial affairs and auditing index and disclosure index) as the independent variables

supports the fixed effects regression model as suitable for ROA performance measure.

With regard to ROE, the Hausman test gave X^2 of 82.22 (*p-value* = 0.0000) so the null hypothesis of no correlation is rejected and accepts that fixed effects regression model is appropriate for the ROE performance measure. This suggests that the unique errors and the *GCGI* as an independent variable are correlated; evidence supported by the critical value from the X^2 table and the Wald statistics. In particular, and as shown in Table 7-8, the Wald statistics of 35.83 with 5 degrees of freedom is more than three times of the critical value of 11.07, indicating that the fixed effects regression model is appropriate. As in the case of ROA, the Hausman test (*for the purposes of brevity is not reported here*) of the sub-indices as the independent variables supported the overall *GCGI* that the fixed effects regression model is suitable for the ROE performance measure.

By contrast, and using Q-ratio as firm performance measure, the Hausman test with X^2 of 7.11 (p-value=0.2129) supports the null hypothesis of no correlation between the unique error and the independent variable (*GCGI*), suggesting that the random effects regression model is appropriate with Q-ratio as firm performance measure. As expected, the critical value from the X^2 table and the Wald statistics with 5 degrees of freedom support the suitability of random effects regression model over fixed effects regression model. In particular, the Wald statistics of 1.22 is much lower than the critical value of 11.07 as shown in Table 7-8 hence the random regression model is preferred. Additionally, the Hausman test (*for the purposes of brevity is not reported here*) showed no correlation between the unique errors and the sub-indices as independent variables and therefore supported the random effects regression model as the method of estimation with the Q-ratio performance measure.

7.5   SUMMARY OF RESULTS AND DISCUSSION

In general, and based on the full sample firms studied in Ghana, firms performance measured are relatively low except Q-ratio which was found to be higher than the findings of previous studies in Ghana (Kyereboah-Coleman and Biekpe, 2006a; Abor and Biekpe, 2007; Kyereboah-Coleman and Amidu, 2008). However, the results are consistent with studies in Egypt, Nigeria and South Africa (Elsayed, 2007; Kajola, 2008; Ntim, 2009). That notwithstanding, the pre 2003 showed that the Ghanaian firms studied performed better than post 2003, suggesting that the Ghanaian economy might have generally experienced poor performance post 2003. This is particularly important, and with the recent global recession, firm performance measured significantly declined from the year 2007 to 2009 and might have accounted for the low performance measures in this thesis compared with the findings from prior studies in Ghana noted earlier.

Based on the findings from the whole, pre 2003 and post 2003 periods, the researcher argues that the Ghanaian listed firms are moderately geared. However, the debt level of these firms has increased over time but not significant, suggesting that when listed firms are planning to increase their capital structure, they focus more on their shareholders and are hence relatively low geared. Although, the listed firms studied experienced insignificant increase in size during pre 2003 and post 2003, and as indicated earlier (see Table 7-4), this might have motivated their debt level to increase over time. While the increase in gearing is suggested to have been motivated by the increase in size, the listed firms studied growth rate was found to decrease significantly despite all the investment made during the study period through their debt level increase noted earlier. This suggests that the well established Ghanaian listed firms performance were affected by the significant decrease in growth rate which might have been resulted from the recent global recession and the poor performance of the Ghanaian economy in the recent past.

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Arguably, and based on the pooled sample firms studied, the correlation matrix across all variables used in this thesis during the whole, pre 2003 and post 2003 shows dissimilar results. In this respect, the *GCGI* was found to be positively correlated with its sub-indices, suggesting that the decision to use equal weighting for the sub-indices is appropriate for the aggregate *GCGI*. As an initial analysis, the *GCGI* was also found to be positively correlated with all the firm performance measures. However, the pre 2003 and post 2003 correlation analysis provided interesting findings. Whereas the *GCGI* was found to be highly correlated with its sub-indices during both periods, the pre 2003 showed significant positive correlation between the *GCGI* and all firm performance measures but not post 2003 where both accounting-based and the market-based firm performance measures were found to have insignificant positive correlation with the *GCGI*. It is important to state that these findings provide the foundation for the hypotheses testing in chapter eight where different models will be used as a result of large collinearity between some of the independent variables. For example, and as noted earlier, separate regression models will be used for the *GCGI*, its sub-indices as well as the specific governance mechanisms in relation to each firm performance measure (i.e. ROE, ROA and Q-ratio) used in this thesis.

Overall, and given that the data used in this thesis is of a panel nature, a test of panel regression assumptions was conducted to determine the appropriate regression model (s) for the hypothesis testing in chapter eight. In this respect, the fixed effects regression model was considered to be appropriate for both accounting-based (i.e. ROA and ROE) and market-based (Q-ratio) performance measures when using specific governance mechanisms as independent variables. Using the *GCGI* as the independent variable, the fixed effects regression model was found to be appropriate for the accounting-based firm performance measures of ROA and ROE. In particular, and as noted earlier, a test for the sub-indices also supported the fixed effects regression model as suitable. However, and using the *GCGI* as the independent variable, the random effects regression model was found to be

suitable for the Q-ratio performance measure, the findings supported by the test for the sub-indices.

Fundamentally, the strategies adopted in this thesis to decide between pooled OLS and the alternative random or fixed effects regression model is supported by prior studies (Black *et al*, 2006a; McKnight and Weir, 2009). Whereas Black *el al* (2006a) reported the results of both OLS and fixed effects regression models but suggested large differences in the coefficients with the conclusion that the differences cast doubt on OLS results, McKnight and Weir (2009) in their panel data analysis tested for the suitability of random or fixed effects and reported the results accordingly. As much as the OLS assumptions are not likely to be met because of the unobserved heterogeneity, the researcher argues that testing to establish the consistent and efficient model to test the related hypotheses is very important to provide reliable and valid results in this thesis.

7.6   CHAPTER SUMMARY

This chapter has considered the description of data and testing of the panel data regression assumptions. It attempted to achieve three key objectives. First, it sought to present a comprehensive description of the dependent (firm performance) and the control variables using descriptive statistics. Second, it sought to provide correlation analysis. In this respect, Pearson's correlation coefficients were presented. Finally, it sought to test the panel regression assumptions to decide between pooled OLS and the alternative random or fixed effects regression model. As a result, LM test was first conducted to choose between pooled OLS and the alternative random or fixed effects regression model followed by the Hausman specification test to decide between random and fixed effects regression models. The results of these tests were reported of which fixed effects regression model was found to be appropriate in most cases except the market-based performance

measure of Q-ratio which favoured random effects regression model as suitable. In the next chapter, the key estimated fixed and random effects regressions based on the specific governance mechanisms and the *GCGI* are reported.

CHAPTER EIGHT

GOVERNANCE-PERFORMANCE RELATIONSHIP: THE EMPIRICAL EVIDENCE

8.1 INTRODUCTION

Following the panel regression assumptions tested in section 7.4 of chapter seven, this chapter reports the initial key estimated regression results of the relationship between corporate governance and firm performance. It specifically seeks to achieve two main objectives as follows. First, it examines whether the adoption of corporate governance provisions is associated with firm performance as proxied by return on assets (ROA), return on equity (ROE) and Tobin's Q (Q-ratio). In this respect, the estimated fixed effects and random effects regression results based on the specific governance mechanisms and the Ghanaian corporate governance index (*GCGI*) are reported and discussed. Second, it investigates the pre 2003 and post 2003 periods' governance-performance relationship based on the specific governance mechanisms and the *GCGI*. The chapter is organised as follows. Section 8.2 reports the empirical findings of the full sample based on the specific governance mechanisms and the *GCGI* to test hypotheses two to six. Section 8.3 presents the empirical findings of pre 2003 and post 2003 periods of governance-performance relationship. Section 8.4 provides a summary of the results and discussion, while section 8.5 summarises the chapter.

8.2 EMPIRICAL FINDINGS: PANEL DATA REGRESSION ANALYSES

This section presents the initial panel data regression results for the full sample firms. In particular, the estimated fixed effects regression results based on the specific governance mechanisms are reported in subsection

8.2.1 to test hypotheses two to five. Following that, subsection 8.2.2 discusses the estimated fixed effects and random effects regression results for the *GCGI* to test hypothesis six. For each subsection, the findings based on the accounting-based performance measures (ROA & ROE) are first presented, followed by the market-based performance measure (Q-ratio). Overall, five hypotheses are tested in this chapter as follows:

H_{O2} **The separation of the roles of CEO and the Chairman should lead to higher firm performance.**

H_{O3} **The smaller the board size should lead to higher firm performance.**

H_{O4} **The higher the proportion of non-executive directors, the lower the firm performance.**

H_{O5} **The presence of an audit committee and a remuneration committee should lead to better firm performance.**

H_{O6} **There is a significant positive association between the Ghanaian corporate governance index (GCGI) and firm performance.**

As indicated earlier, the findings are reported in the ensuing subsections (8.2.1 and 8.2.2) with further analysis presented in section 8.3. Notably, the panel regression models applied in the subsequent analysis are based on the panel regression assumptions tested in section 7.4 of chapter seven.

8.2.1 Empirical findings: The specific governance mechanisms and firm performance

8.2.1.1 *Findings based on the accounting-based performance measures (ROA & ROE)*

Table 8-1 reports panel data fixed effects regression results of the specific governance mechanisms based on the accounting-based performance measure of ROA. A positive coefficient indicates high firm performance and a negative one low firm performance. CEO duality is found to be statistically

insignificant but positively related to firm performance measured by ROA, evidence not supported by hypothesis two. However, this finding is consistent with some of the prior Ghanaian (Kyereboah-Coleman and Biekpe, 2006b) and international (Ntim, 2009) studies. In particular, Kyereboah-Coleman and Biekpe (2006b) found CEO duality to be positively related to ROA of listed banks in Ghana. By contrast, this finding does not provide empirical support to the Ghanaian Code recommendations of the role separation between the CEO and the Chairman. In addition, the evidence is different from prior Ghanaian (Kyereboah-Coleman and Osei, 2008) and international (Bozec, 2005; Haniffa and Hudaib, 2006) studies which reported negative relationship between CEO duality and ROA. It may be argued that the differences in findings between this thesis and that of Kyereboah-Coleman and Osei (2008) in Ghana are due to the different samples used by each study. In particular, and whereas this thesis focuses on the Ghanaian listed firms, Kyereboah-Coleman and Osei (2008) use microfinance institutions (MFIs) to establish the relationship between the two where the leadership structures of the firms may be different.

The board size is found to be statistically insignificant but positively related to ROA in all the models of Table 8-1, suggesting that hypothesis three is not supported. This finding although insignificant lends empirical support to prior studies in Ghana (Kyereboah-Coleman and Biekpe, 2006a; 2006b; Abor and Biekpe, 2007; Kyereboah-Coleman and Osei; 2008) and other international studies (Kiel and Nicolson, 2003; Jackling and Johl, 2009). For example, Kyereboah-Coleman and Biekpe (2006a) reported positive relationship between board size and ROA among Ghanaian listed firms. However, the findings differ from other prior studies in Ghana (Kyereboah-Coleman and Amidu, 2008), as well as other international studies (Eisenberg, 1998; Cheng, 2008; Guest, 2009) who reported negative and statistically significant association between board size and ROA. Arguably, larger board size is less effective in the context of Ghana and therefore the optimum board size should be encouraged for effective firm performance. Contrary to the

provisions of the Ghanaian Code to have a minimum of 8 and a maximum of 16 board size, it appears that this finding lends empirical support to the board size of between 8 and 9 suggested by prior researchers (Lipton and Lorch, 1992; Jensen, 1993).

Table 8-1: Panel-data fixed-effects regressions of specific governance mechanisms and return on assets (ROA)

	Model 1	Model 2	Model 3
Intercept	14.406	14.043	16.040
	(1.85)*	(1.99)**	(2.41)**
CEODUAL	1.224	1.173	1.188
	(0.52)	(0.51)	(0.51)
BODSIZE1	0.578	0.568	0.546
	(1.40)	(1.41)	(1.34)
PNEDs1	-0.177	-0.176	-0.177
	(2.50)**	(2.50)**	(2.45)**
AUCOM1	2.689	2.970	0.238
	(1.38)	(1.55)	(0.13)
RECOM1	0.468	0.470	0.419
	(0.23)	(0.24)	(0.21)
GEAR	-0.090	-0.091	-0.092
	(3.17)***	(3.24)***	(3.30)***
SIZE	-0.069	-	-
	(0.11)	-	-
GROWTH	2.402	2.377	2.310
	(2.04)**	(2.06)**	(2.02)**
AGE	0.055	0.055	-
	(0.74)	(0.74)	-
Observations	283	283	283
Group[a]	39	39	39
R^2 (Overall)	0.121	0.120	0.111

Notes: The dependent variable is the return on assets (ROA). *CEODUAL* is the CEO duality, *BODSIZE1* is the board size, *PNEDs1* is the proportion of non-executive directors, *AUCOM1* represents the existence of audit committee, *RECOM1* represents the existence of remuneration committee, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

The proportion of non-executive directors (PNEDs) is found to be statistically significant and negatively related to ROA, suggesting that hypothesis four is supported. Although this finding is contrary to the expectation of the Ghanaian Code which recommends to have a balance of executive and non-executive directors for effective performance, it is consistent with prior studies in Ghana (Kyereboah-Coleman and Biekpe, 2006a; 2006b) and other international studies (Bozec, 2005; Guest, 2009). That notwithstanding, it

does not lend empirical support to the findings of prior Ghanaian studies of Abor and Biekpe (2007) and Kyereboah-Coleman and Amidu (2008) who reported statistically significant and positive relationship between the PNEDs and ROA among SMEs in Ghana. The differences in findings between this thesis and prior Ghanaian studies may be because of the differences in the sample each study used where the PNEDs of SMEs and listed firms in Ghana may be different.

The presence of an audit committee and a remuneration committee are found to be statistically insignificant but positively related to ROA which means that hypothesis five is not supported. However, these findings are consistent with prior Ghanaian (Kyereboah-Coleman and Amidu, 2008) and international (Weir and Laing, 1999) studies. For example, Weir and Laing (1999) reported that the presence of audit and remuneration committees do positively affect ROA. However, the statistically insignificance of these board committees in explaining ROA defeats the recommendations of the Ghanaian Code for the establishment of the audit and remuneration committees. As indicated in chapter six, and given the high (low) adoption rate of audit (remuneration) committees, two possible explanations of these findings are put forward. First, more than 70% of the sampled firms do not have a remuneration committee in existence and that appears to affect the variability in explaining firm performance measured by ROA. Second, the 70% adoption rate of an audit committee also suggests that the existence of board committees may matter but its impact on firm performance may not be seen in isolation unless the composition requirements of such committees are met.

With regard to the relationship between the control variables and ROA, gearing is found to be statistically significant and negatively related with ROA for all the three models, suggesting that lower levels of gearing decrease profitability in Ghana. The negative coefficients lend empirical support to prior Ghanaian studies (Kyereboah-Coleman and Biekpe, 2006a; Abor and

Biekpe, 2007). Although statistically insignificant, the negative relationship between firm size and ROA offers empirical support to previous findings in Ghanaian (Kyereboah-Coleman and Biekpe, 2006a; Abor and Biekpe, 2007) and international (Zhou, 2005) studies who indicate a negative relationship between the two. By contrast, sales growth and firm age are found to be positively related to ROA. However, only sales growth is statistically significant, evidence consistent with Klapper and Love (2004) who reported that firms that generate higher sales are more likely to report higher profitability.

Table 8-2 presents the panel data fixed effects regression results of the specific governance mechanisms and the accounting-based performance measure of ROE. Contrary to ROA, CEO duality is found to be negatively related to ROE for all the models. However, the insignificant negative coefficient does not support hypothesis two that the separation of the roles of the CEO and the Chairman should lead to higher firm performance. That notwithstanding, this evidence is consistent with prior international studies (Rechner and Dalton, 1991; Kajola, 2008; Sanda *et al*, 2010) who reported the role Separation to have a positive impact on ROE. Consistent with ROA, the finding does not offer empirical support to the Ghanaian Code provision on the CEO and the Chairman roles separation.

Board size is found to be statistically significant and positively related to ROE, suggesting that hypothesis three is supported. The positive coefficient lends empirical support to previous evidence of Kajola (2008) and also the Ghanaian Code provisions of firms having a minimum and a maximum board size of eight and sixteen[28]. Consistent with ROA, the PNEDs is found to be statistically significant and negatively related to ROE, indicating that hypothesis four is supported. However, this finding does not lend empirical support to past evidence, which suggests that the PNEDs is significant and positively related to ROE (Pearce and Zahra, 1992; Daily and Dalton, 1993).

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[28] It is important to note that the Ghanaian listed firms' board size ranges between 8 and 9.

As in the case of ROA, both audit and remuneration committees are found to be positively related to ROE. The insignificant positive coefficient for both committees suggests that hypothesis 5 is not supported. This finding also does not offer empirical support to previous studies which reported a negative relationship between audit committee and ROE (Kajola, 2008). As in Black *et al* (2006a) who reported large differences between OLS and fixed effects estimations, the differences in findings between this thesis and Kajola (2008) may be due to the different method of estimations used by each study.

Table 8-2: Panel-data fixed-effects regressions of specific governance mechanisms and return on equity (ROE)

	Model 1	Model 2	Model 3
Intercept	41.029	47.007	37.070
	(1.56)	(1.98)**	(1.69)*
CEODUAL	-5.344	-4.267	-4.441
	(0.67)	(0.55)	(0.58)
BODSIZE1	2.511	2.722	2.853
	(1.80)*	(2.00)**	(2.12)**
PNEDs1	-0.446	-0.449	-0.441
	(1.88)*	(1.90)*	(1.89)*
AUCOM1	3.310	3.564	3.101
	(0.62)	(0.67)	(0.58)
RECOM1	3.230	3.284	3.130
	(0.48)	(0.49)	(0.47)
GEAR	-0.535	-0.522	-0.507
	(5.54)***	(5.49)***	(5.37)***
SIZE	1.294	-	-
	(0.62)	-	-
GROWTH	7.825	8.339	8.590
	(1.95)*	(2.11)**	(2.17)**
AGE	-0.259	-0.254	-
	(1.04)	(1.04)	-
Observations	283	283	283
Group[a]	39	39	39
R^2 (Overall)	0.135	0.136	0.138

Notes: The dependent variable is the return on equity (ROE). *CEODUAL* is the CEO duality, *BODSIZE1* is the board size, *PNEDs1* is the proportion of non-executive directors, *AUCOM1* represents the existence of audit committee, *RECOM1* represents the existence of remuneration committee, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

With respect to the relationship between the control variables and ROE, and similar to ROA, gearing is found to be statistically significant and negatively

related to ROE. However, firm size is found to be positively related to ROE, the findings dissimilar to what is reported between ROA. The statistically significant and positive relationship between sales growth and ROE is consistent with what is reported between sales growth and ROA. Interestingly, firm age is found to have a negative relationship with ROE, evidence not consistent with what is reported earlier between age and ROA.

8.2.1.2 *Findings based on the market-based performance measure (Q-ratio)*

Table 8-3 reports the panel data fixed effects regression results of the specific governance mechanisms and the market-based performance measure of Q-ratio. Consistent with ROA, CEO duality is found to be statistically insignificant but positively related to the market-based performance of Q-ratio, suggesting that hypothesis two is not supported. In addition, the statistically insignificant and positive coefficient contradicts past Ghanaian (Kyereboah-Coleman and Biekpe, 2006a) and international (Kiel and Nicholson, 2003; Jackling and Johl, 2009, Sanda *et al*, 2010) evidence, which suggests that CEO duality is negatively related to Q-ratio. For example, Kyereboah-Coleman and Biekpe (2006a) reported statistically significant and negative association between CEO duality and Q-ratio across Ghanaian listed firms. However, the differences in findings between this thesis and that of Kyereboah-Coleman and Biekpe (2006a) may be attributed to the different governance data sources and estimation methods used by both studies. Whereas this thesis collected governance data directly from firm annual reports with fixed effects estimation method, Kyereboah-Coleman and Biekpe (2006a) gathered the governance data through interviews and questionnaire techniques with generalized least squares (GLS) as the estimation method. This is particularly important because the governance data through interviews and questionnaire techniques may not reflect the governance practices during the past periods firm performance. Also, the GLS and fixed effects regressions may provide differences in

coefficients and significant levels given the differences in the two methods of estimation.

Similar to the accounting-based performance measure of ROE, board size is found to be statistically significant and positively related to the Q-ratio, suggesting that hypothesis three is supported. In particular, the statistically significant and positive coefficient lends empirical support to the Ghanaian (Kyereboah-Coleman and Biekpe, 2006a) and other international (Coles *et al*, 2008; Henry, 2008; Jackling and Johl, 2009; Sanda *et al*, 2010; Adams and Mehran, 2012) studies. However, this finding is not in agreement with past researchers who reported negative and statistically significant association between board size and Q-ratio (Yermack, 1996; Cheng, 2008; Guest, 2009). Effectively, smaller board size in Ghana is perceived by the market as more effective than the larger board size as reflected in the findings of this thesis and that of Kyereboah-Coleman and Biekpe (2006a).

Consistent with the accounting-based performance measures of ROA and ROE, the PNEDs is found to be statistically significant and negatively related to Q-ratio for all the models. This further lends empirical support to hypothesis four that the higher the PNEDs, the lower the firm performance. Empirically, this finding is consistent with past Ghanaian (Kyereboah-Coleman and Biekpe, 2006a) and international (Agrawal and Knoeber, 1996; Kiel and Nicholson, 2003; Mangena *et al*, 2012) evidence, which suggests that when there are more outside board members, performance of the firm is likely to be worse. However, this finding does not lend empirical support to other prior international studies (Haniffa and Hudaib, 2006; Jackling and Johl, 2009). Whereas Haniffa and Hudaib (2006) found no impact of the PNEDs on Q-ratio, Mangena *et al* (2012) reported statistically significant and negative relationship between the PNEDs and Q-ratio. Arguably, and given the Ghanaian Code provisions for firms to have a balance of executive and non-executive directors on the board, it appears that the Ghanaian listed firms have more (76%) outside directors (see section 6.5 of chapter six) on

the board than inside directors which might have resulted in poor performance.

Table 8-3: Panel-data fixed-effects regressions of the specific governance mechanisms and Tobin's Q (Q-ratio)

Variables	Model 1	Model 2	Model 3	Model 4
Intercept	8.479	8.284	8.372	8.365
	(4.65)***	(4.61)***	(4.94)***	(4.94)***
CEODUAL	0.489	0.452	0.465	0.459
	(1.25)	(1.17)	(1.24)	(1.23)
BODSIZE1	0.231	0.231	0.227	0.228
	(2.84)***	(2.84)***	(2.94)***	(2.95)***
PNEDs1	-0.039	-0.038	-0.038	-0.038
	(2.57)**	(2.53)**	(2.58)**	(2.62)***
AUCOM1	-0.240	-0.251	-0.259	-0.258
	(0.90)	(0.95)	(1.00)	(1.00)
RECOM1	0.066	0.086	0.081	0.093
	(0.19)	(0.24)	(0.23)	(0.27)
GEAR	0.003	-	-	-
	(0.65)	-	-	-
SIZE	-0.002	-0.016	-	-
	(0.02)	(0.15)	-	-
GROWTH	0.064	0.069	0.063	-
	(0.39)	(0.42)	(0.40)	-
AGE	-0.086	-0.082	-0.082	-0.081
	(2.30)**	(2.23)**	(2.24)**	(2.22)**
Observations	283	283	283	283
Group[a]	39	39	39	39
R^2 (Overall)	0.004	0.004	0.004	0.004

Notes: The dependent variable is the Tobin's Q (Q-ratio). *CEODUAL* is the CEO duality, *BODSIZE1* is the board size, *PNEDs1* is the proportion of non-executive directors, *AUCOM1* represents the existence of audit committee, *RECOM1* represents the existence of remuneration committee, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
*** Significant at 1% level
** Significant at 5% level

In contrast with the accounting-based performance measures of ROA and ROE, the audit committee existence is found to be negatively related to Q-ratio for all the models. Although statistically insignificant, the negative coefficient lends empirical support to the evidence reported in the UK by Weir *et al* (2002). However, and consistent with ROA and ROE, the presence of a remuneration committee is found to be positively related to Q-ratio. These findings suggest that hypothesis five which states that the presence of audit and remuneration committees should lead to better firm performance is not supported. Arguably, the differences in findings between the board committees when using Q-ratio suggest that the adoption of the Ghanaian

Code provision in relation to the remuneration committee is slightly valued more by the market than the audit committee. This is because, and as indicated in chapter six, the adoption of the remuneration committee is recommended only by the Ghanaian Code, whilst the adoption of the audit committee is supported by the Ghanaian Code, SECG regulation and the revised GSE Listing Rules and therefore might not be value relevant but a box ticking exercise to satisfy shareholders and regulator.

In relation to the control variables, gearing, firm size and sales growth did not show any significant impact on Q-ratio for all the models. However, firm age is found to be statistically significant and negatively related to Q-ratio. The negative coefficient lends empirical support to the earlier findings of firm age and ROE. As reported in model 4 of Table 8-3, the coefficients of all the specific governance mechanisms did not change significantly after excluding the control variables (i.e. gearing, firm size and sales growth) from the model. This suggests that these control variables are less effective in explaining the market-based performance measure than the accounting-based performance measures.

8.2.2 Empirical findings: The *GCGI* and firm performance

8.2.2.1 *Findings based on the accounting measures of firm performance (ROA & ROE)*

Table 8-4 reports the panel data fixed effects regressions of the *GCGI* and firm performance measure of ROA. The *GCGI* is found to be positively related to ROA for all the three models. However, the insignificant positive coefficient suggests that hypothesis six is rejected. That notwithstanding, this finding lends empirical support to prior index-performance relationship studies in developed (Clacher *et al*, 2008; Bassen *et al*, 2008; Gupta *et al*, 2009) and other developing (Larcker *et al*, 2007; Price *et al*, 2011) countries. For example, Price *et al* (2011) found positive but insignificant relationship

between their index and ROA among Mexican listed firms because better governed firms were forced to adopt costly measures that have no benefit to their profitability.

Table 8-4: Panel-data fixed-effects regressions of the *GCGI* and ROA

Variables	Model 1	Model 2	Model 3
Intercept	29.068	32.819	34.007
	(3.25)***	(4.55)***	(4.75)***
GCGI	0.042	0.059	0.058
	(0.51)	(0.74)	(0.72)
GEAR	-0.084	-0.080	-0.080
	(2.70)***	(2.62)***	(2.62)***
SIZE	-0.526	-	-
	(0.71)	-	-
GROWTH	1.289	1.497	-
	(1.08)*	(1.30)	-
AGE	0.840	0.888	0.919
	(2.90)***	(3.15)***	(3.27)***
Observations	283	283	283
Group[a]	39	39	39
R^2 (Overall)	0.010	0.010	0.012

Notes: The dependent variable is the return on assets (ROA). *GCGI* is the Ghanaian corporate governance index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
*Significant at 10% level

However, the findings differ from prior studies in both developed and developing countries who reported a statistically significant and positive relationship between corporate governance index and firm performance (Gompers *et al*, 2003; Klapper and Love, 2004; Ponnu and Ramthandin, 2008; Bhagat and Bolton, 2008; Ntim, 2009; Gupta *et al*, 2009; Renders *et al*, 2010; Bauer *et al*, 2010). In particular, and in the context of Africa where this thesis is based, Ntim (2009) found a statistically significant and positive relationship between the South African Corporate Governance Index (*SACGI*) and ROA. Given the differences in findings, two possible explanations can be put forward. First, this thesis included periods (i.e. from 2000 to 2009) of both pre and post introduction of the Ghanaian Code provisions, whereas Ntim (2009) only focused on the post King II Report to develop the *SACGI* (i.e. from 2002 to 2006) which might have affected the findings when using the pooled data. Second, and as reported by Black *et al* (2006a) regarding

large differences of the coefficients of OLS and fixed effects regressions and significant levels, including signs reversals in their studies of which they cast doubts on the OLS results, the differences in findings between this thesis and that of Ntim (2009) may be attributed to the fixed effects and OLS regressions used as estimation methods.

The findings based on the relationship between the *GCGI* and ROA suggest that corporate governance in Ghana does not matter to firm performance. That notwithstanding, the results do not completely reveal the impact of sub-indices of the *GCGI* to firm performance measured by ROA. Table 8-5 presents the findings regarding the relationship between the six sub-indices[29] and ROA and all the control variables. Although not statistically significant, the board composition, remuneration committee and the shareholder rights indices are found to have a positive impact on ROA. This is not the case of the audit committee, financial affairs and auditing and disclosure indices where the results indicate negative impact and in some cases have significant impact on ROA. In this respect, the positive coefficients of the board composition, remuneration committee and the shareholder rights indices reveal the level of importance of these sub-indices with firm performance measured by ROA. This finding lends empirical support to prior studies (Clacher *et* al, 2008; Gupta *et al*, 2009). Whereas Gupta *et al* (2009) found board composition, remuneration committee and shareholder rights indices to be positively related to ROA, Clacher *et al* (2008) only supported remuneration committee and shareholder rights indices with board composition index having a negative relationship with ROA.

Interestingly, the negative coefficient of the audit committee, financial affairs and auditing and disclosure indices do not lend empirical support to prior studies (Clacher *et al*, 2008; Gupta *et al*, 2009; Price *et al*, 2011). In particular, Clacher *et al* (2008) and Gupta *et al* (2009) reported a positive relationship between disclosure index and ROA, while Price *et al* (2011) found

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[29] It is important to note that the p-values of the sub-indices when put in the model individually do not change to significant levels (for the purpose of brevity these results are not reported here)

statistically significant and positive association between audit committee index and ROA. Fundamentally, the insignificant positive relationship between the overall *GCGI* and ROA is driven by the statistically significant and negative coefficient of the financial affairs and auditing as indicated in models 1 and 2 of Table 8-5.

Table 8-5: Panel-data fixed-effects regressions of the sub-indices and return on assets (ROA)

Variables	Model 1	Model 2	Model 3	Model 4	Mode 5
Intercept	14.580	15.490	11.533	12.452	14.981
	(1.85)*	(2.29)**	(1.51)	(2.00)**	(2.45)**
BOARDINDEX	0.085	0.086	0.071	0.072	0.080
	(1.42)	(1.46)	(1.19)	(1.22)	(1.35)
AUCOMINDEX	-	-	-0.008	-0.008	-0.009
	-	-	(0.45)	(0.42)	(0.45)
RECOMINDEX	0.010	0.011	-	-	-
	(0.30)	(0.33)	-	-	-
SHOLDINDEX	0.010	0.010	-0.027	-0.026	-0.027
	(0.13)	(0.13)	(0.38)	(0.38)	(0.38)
FAAINDEX	-0.157	-0.155	-	-	-
	(1.99)**	(1.98)**	-	-	-
DISCINDEX	-0.087	-0.087	-	-	-
	(1.30)	(1.31)	-	-	-
GEAR	-0.080	-0.079	-0.088	-0.087	-0.088
	(2.76)***	(2.76)***	(3.09)***	(3.10)***	(3.13)***
SIZE	-0.169	-	-0.145	-	-
	(0.27)	-	(0.23)	-	-
GROWTH	2.255	2.327	2.274	2.335	2.267
	(1.91)*	(2.02)**	(1.93)*	(2.03)**	(1.98)**
AGE	0.078	0.079	0.059	0.060	-
	(1.00)	(1.01)	(0.76)	(0.77)	-
Observations	283	283	283	283	283
Group[a]	39	39	39	39	39
R^2 (Overall)	0.057	0.059	0.042	0.044	0.031

Notes: The dependent variable is the return on assets (ROA). *BOARDINDEX* is the board composition index, *AUCOMINDEX* is the audit committee index, *RECOMINDEX* is the remuneration committee index, *SHOLDINDEX* is the shareholder rights index, *FAAINDEX* is the financial affairs and auditing index, *DISCINDEX* is the disclosure index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

The findings of firm performance measured by ROA including control variables are in most cases consistent with prior studies. Specifically, gearing is found to be statistically significant and negatively related to ROA when using both the *GCGI* and its sub-indices as governance variables, the findings supported by Renders *et al* (2010). It is however does not lend empirical

support to other prior studies (Clacher *et al*, 2008) who reported a positive association between gearing and ROA. Although not statistically significant, the coefficient of firm size is negative in both the *GCGI* and its sub-indices based on ROA, evidence consistent with Leal and Carvalhal-da-Silva (2005) and Bauer *et al* (2010). That notwithstanding, sales growth and firm age are found in most cases to be statistically significant and positively related to ROA. The positive coefficient of sales growth lends empirical support to prior studies in the developed[30] (Clacher *et al*, 2008; Renders *et al*, 2010) and developing[31] (Ntim, 2009) countries. Empirically, the positive coefficient of firm age is not supported by prior index studies (Clacher *et al*, 2008; Renders *et al*, 2010) who reported an insignificant negative association between firm age and ROA.

Table 8-6 presents the panel data fixed effects regression of the *GCGI* and the accounting-based firm performance measure of ROE. Consistent with ROA, the *GCGI* is found to be positively related to ROE for all the three models but does not support hypothesis six. However, the positive coefficient lends empirical support to prior studies which reported statistically insignificant but positive association between the Germany Corporate Governance Code (*GCGC*) index and ROE (Bassen *et al*, 2008). This finding however does not lend empirical support to other prior studies which reported statistically significant and positive association between their respective index and ROE (Cheung *et al*, 2007; Bauer *et al*, 2010; Renders *et al*, 2010). For example, Renders *et al* (2010) found a negative association between their overall index and ROE for the initial analysis but after controlling for the sample selection bias and endogeneity, the negative sign changed to positive and statistically significant. As in the case of Renders *et al* (2010), an endogeneity test will be conducted in chapter nine to support or deny the initial analysis of findings of this thesis based on the *GCGI* as the main explanatory variable.

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[30] These include UK and 14 European countries
[31] South Africa

Table 8-6: Panel-data fixed effects regressions of the *GCGI* and ROE

Variables	Model1	Model 2	Model 3
Intercept	79.098	96.110	100.386
	(2.57)**	(3.87)***	(4.07)***
GCGI	0.310	0.384	0.381
	(1.08)	(1.40)	(1.39)
GEAR	-0.606	-0.590	-0.590
	(5.67)***	(5.59)***	(5.58)***
SIZE	2.386	-	-
	(0.94)	-	-
GROWTH	4.447	5.387	-
	(1.09)	(1.36)	-
AGE	-2.479	-2.697	-2.807
	(2.49)**	(2.78)***	(2.90)***
Observations	283	283	283
Group[a]	39	39	39
R^2	0.012	0.010	0.010

Notes: The dependent variable is the return on equity (ROE). *GCGI* is the Ghanaian corporate governance index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
** Significant at 5% level

Arguably, and similar to ROA, the findings based on the association between the overall *GCGI* and ROE does not reveal the importance of each sub-index in contributing to firm performance. Table 8-7 reports the findings in respect of the relationship between the six sub-indices and firm performance measured by ROE. The board composition index is found to be statistically significant and positively related to ROE for all the models. This finding does not lend empirical support to the work of Cheung *et al* (2007) who reported positive but insignificant association between board composition and ROE. Although insignificant, audit committee, remuneration committee and shareholder rights indices are found to be positively related to ROE for all the models. The positive coefficient of shareholder rights however differs from prior studies which reported negative association with ROE (Cheung *et al*, 2007). In contrast, financial affairs and auditing and disclosure indices are found to have negative relationship with ROE. However, the negative coefficient of disclosure index is not consistent with the findings of Cheung *et al* (2007) who reported statistically significant and positive association between disclosure index and ROE.

Table 8-7: Panel-data fixed-effects regressions of the sub-indices and return on equity (ROE)

Variables	Model 1	Model 2	Model 3	Model 4
Intercept	22.104	16.154	17.582	12.132
	(0.86)	(0.64)	(0.71)	(0.50)
BOARDINDEX	0.344	0.338	0.347	0.339
	(1.81)*	(1.80)*	(1.82)*	(1.79)*
AUCOMINDEX	-	-	0.025	0.032
	-	-	(0.40)	(0.51)
RECOMINDEX	0.125	0.124	-	-
	(1.21)	(1.20)	-	-
SHOLDINDEX	0.124	0.131	0.246	0.270
	(0.49)	(0.53)	(1.04)	(1.16)
FAAINDEX	-0.120	-0.144	-	-
	(0.45)	(0.54)	-	-
DISCINDEX	-0.063	-0.047	-	-
	(0.28)	(0.21)	-	-
GEAR	-0.522	-0.506	-0.535	-0.525
	(5.32)***	(5.21)***	(5.57)***	(5.49)***
SIZE	2.418	2.409	2.362	2.331
	(1.19)	(1.19)	(1.15)	(1.14)
GROWTH	6.789	7.064	7.125	7.413
	(1.64)	(1.71)*	(1.75)*	(1.82)*
AGE	-0.228	-	-0.226	-
	(0.99)	-	(0.95)	-
Observations	283	283	283	283
Group[a]	39	39	39	39
R^2 (Overall)	0.12	0.11	0.097	

Notes: The dependent variable is the return on equity (ROE). *BOARDINDEX* is the board composition index, *AUCOMINDEX* is the audit committee index, *RECOMINDEX* is the remuneration committee index, *SHOLDINDEX* is the shareholder rights index, *FAAINDEX* is the financial affairs and auditing index, *DISCINDEX* is the disclosure index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
*Significant at 10% level

The differences in findings between this thesis and that of Cheung *et al* (2007) among Hong Kong listed firms may be possibly explained in two ways. First, whereas this thesis focuses on the country-specific corporate governance provisions to develop the *GCGI* and its sub-indices, Cheung *et al* (2007) used the five principles[32] of the revised OECD 2004 as its sub-indices for the overall corporate governance index (CGI). This is particularly important because the provisions in the revised OECD principles may not be specific to the operational environment of the Hong Kong listed firms and therefore may not show the country specific governance impact on firm

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[32] These include rights of shareholders, equitable treatment of shareholders, role of stakeholders, disclosure and transparency, board responsibility and composition.

performance. Second, and as noted by Black *et al* (2006a), the differences in findings may have also been caused by the large differences of the coefficients of OLS and fixed effects regressions including significant levels and sign reversals. Arguably, and as indicated earlier, the overall *GCGI* positive coefficient is driven by the statistically significant level of the board composition index, suggesting that the adoption of corporate governance provisions regarding the board composition does matter in Ghana.

The results of firm performance measured by ROE including control variables lend empirical support to prior studies (Cheung *et al*, 2007; Renders *et al*, 2010). In particular, and consistent with ROA, gearing is found to be statistically significant and negatively related to ROE when using the *GCGI* and its sub-indices as shown in Tables 8-6 and 8-7 respectively. Although, firm size and growth are also found to be positively related to ROE when using the *GCGI*, firm growth shows statistically significant with respect to the sub-indices and ROE. This is however not the case for firm age which is found to be statistically significant and negatively related to ROE when using the *GCGI* but shows an insignificant negative coefficient when using the sub-indices.

8.2.2.2 *Findings based on the market measure of firm performance (Q-ratio)*

Table 8-8 reports the panel data random effects regressions of the *GCGI* and firm performance measured by Q-ratio. Consistent with the accounting-based performance measures of ROA and ROE, the *GCGI* is found to be positively related to Q-ratio for all the models. However, the positive coefficient does not support hypothesis six that there is a significant and positive association between the *GCGI* and firm performance.

Table 8-8: Panel-data random-effects regression of the *GCGI* and Q-ratio

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	1.930	1.928	1.614	1.614	1.491
	(2.33)**	(2.34)**	(2.48)**	(2.48)**	(2.70)***
GCGI	0.006	0.005	0.006	0.006	0.006
	(0.71)	(0.71)	(0.81)	(0.81)	(0.85)
GEAR	0.000	-	-	-	-
	(0.06)	-	-	-	-
SIZE	-0.055	-0.055	-	-	-
	(0.62)	(0.63)	-	-	-
GROWTH	-0.004	-0.003	-0.026	-	-
	(0.03)	(0.02)	(0.16)	-	-
AGE	-0.004	-0.004	-0.004	-0.004	-
	(0.37)	(0.37)	(0.36)	(0.35)	-
Observations	283	283	283	283	283
Group[a]	39	39	39	39	39
R^2 (Overall)	0.005	0.005	0.000	0.000	0.001

Notes: The dependent variable is the Tobin's Q (Q-ratio). *GCGI* is the Ghanaian corporate governance index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *z*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
**Significant at 5% level

Nevertheless, the positive coefficient lends empirical support to prior studies in the developed (Bauer *et al*, 2004; Gupta *et al*, 2009; Aggarwal *et al*, 2007; Bruno and Claessens, 2010) and developing (Kouwenberg, 2006; Garay and Gonzalez; 2008; Cheung *et al*, 2010) countries who reported a positive association between their various indices and Q-ratio. That notwithstanding, the finding in this thesis does not lend empirical support to other prior studies in developed (Gompers *et al*, 2003; Drobetz *et al*, 2004; Beiner *et al*, 2006; Brown and Caylor *et al*, 2006; Clacher *et al*, 2008; Ammann *et al*, 2011; Bauer *et al*, 2010) and developing (Klapper and Love, 2004; Leal and Carvalhal-da-Silva, 2005; Black *et al*, 2006a; Javed and Igbal, 2007; Black *et al*, 2010; Balasubramanian *et al*, 2010) countries who reported statistically significant and positive association between their governance indices and firm performance measured by Q-ratio.

Specifically, the differences in findings between this thesis and other prior studies may be explained by the different methodologies used for the development of their indices and the estimation methods. For example, and as indicated earlier, Black *et al* (2006a) found between OLS and fixed effects

regressions large differences in coefficients and significant levels including sign reversals of which they cast doubts on OLS results. In this respect, most of the prior studies[33] used OLS as their estimation methods and their findings may be unreliable.

As in the case of the accounting-based performance measures of ROA and ROE, the findings based on the association between the *GCGI* and Q-ratio indicate that corporate governance does not matter in Ghana. However, the findings do not fully show the effect of each of the six sub-indices of the *GCGI* to firm performance measured by Q-ratio. Table 8-9 contains the results based on each of the six sub-indices and Q-ratio including all the control variables. Board composition and remuneration committee indices are found to be positively related to Q-ratio, evidence supported by prior international studies (Leal and Carvalhal-da-Silva, 2005; Kouwenberg, 2006; Aggarwal *et al*, 2007; Yan-Leung *et al*, 2008; Gupta *et al*, 2009; Balasubramanian *et al*, 2010). For example, Gupta *et al* (2009) found positive coefficients of board composition and remuneration committee indices but the impact on Q-ratio of each sub-index is insignificant as in the case of this thesis. These findings as well as the no relationship between the audit committee and Q-ratio do not lend empirical support to the work of Bauer *et al* (2010) who reported statistically significant and positive association between board composition, audit committee and remuneration committee indices and Q-ratio.

In contrast, shareholder rights, financial affairs and auditing and disclosure indices are found to be negatively related to Q-ratio. The negative coefficient of shareholder rights index lends empirical support to prior international studies (Yan-Leung *et al*, 2008; Clacher *et al*, 2008; Gupta *et al*, 2009; Black *et al*, 2010) who reported negative association between shareholder rights index and Q-ratio. However, this finding contradicts the evidence of Leal and

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[33] These studies include Klapper and Love (2004), Clacher *et al* (2008), Bauer *et al* (2010), Balasubramanian *et al* (2010), among others.

Carvalhal-da-Silva (2005), Kouwenberg (2006) and Toudas and Karathanassis (2007) who found insignificant positive relationship between the two. Similarly, the negative coefficient of disclosure index lends empirical support to the work of Kouwenberg (2006) and Yan-Leung *et al* (2008) who reported negative association between disclosure index and Q-ratio. That notwithstanding, the negative coefficient is in disagreement with other prior studies which reported positive and in some cases statistically significant association between disclosure index and Q-ratio (Leal and Carvalhal-da-Silva, 2005; Clacher *et al*, 2008; Garay and Gonzalez, 2008; Gupta *et al*, 2009; Balasubramanian *et al*, 2010). Arguably, none of the six sub-indices appear to have strongly driven the relationship between the overall *GCGI* and Q-ratio because of their insignificant impact. However, the positive coefficients of the board composition and remuneration committee indices outweighed the negative coefficients of shareholder rights, financial affairs and auditing as well as disclosure indices which may have accounted for the positive association between the *GCGI* and Q-ratio.

Interestingly and for the first time in this thesis, none of the control variables shows any significant impact on firm performance measured by Q-ratio when using the *GCGI* or its sub-indices as explanatory variables. However, the insignificant positive (i.e. gearing) and negative (i.e. firm size, growth and age) coefficients lend empirical support in most cases to prior studies (Leal and Carvalhal-da-Silva, 2005; Kouwenberg, 2006; Clacher *et al*, 2008; Garay and Gonzalez, 2008; Balasubramanian *et al*, 2010). This suggests that the Ghanaian listed firms' level of gearing, size, sales growth and their age does not have any significant impact on Q-ratio because the market does not consider these control variables as value relevant. In contrast, the insignificant impact of the control variables on Q-ratio contradicts other prior studies. In particular, Bauer *et al* (2010) and Black *et al* (2010) found gearing (firm size, age and sales growth) to be statistically significant and positively (negatively) related to Q-ratio.

Table 8-9: Panel-data random-effects regressions of the sub-indices and Tobin's Q (Q-ratio)

Variables	Model 1	Model 2	Model 3	Model 4
Intercept	3.170	2.529	3.088	2.488
	(2.75)***	(2.64)***	(2.74)***	(2.80)***
BOARDINDEX	0.013	0.011	0.013	0.012
	(1.42)	(1.27)	(1.45)	(1.38)
AUCOMINDEX	-	-	0.000	0.000
	-	-	(0.04)	(0.14)
RECOMINDEX	0.004	0.004	-	-
	(0.86)	(0.82)	-	-
SHOLDINDEX	-0.010	-0.009	-0.009	-0.009
	(0.92)	(0.88)	(0.86)	(0.89)
FAAINDEX	-0.011	-0.009	-	-
	(0.94)	(0.83)	-	-
DISCINDEX	-0.012	-0.012	-	-
	(1.21)	(1.23)	-	-
GEAR	0.000	-	0.001	-
	(0.03)	-	(0.26)	-
SIZE	-0.082	-	-0.079	-
	(0.92)	-	(0.88)	-
GROWTH	0.023	-	0.027	-
	(0.14)	-	(0.16)	-
AGE	-0.004	-	-0.002	-
	(0.29)	-	(0.18)	-
Observations	283	283	283	283
Group[a]	39	39	39	39
R^2 (Overall)	0.000	0.001	0.003	0.012

Notes: The dependent variable is the Tobin's Q (Q-ratio). *BOARDINDEX* is the board composition index, *AUCOMINDEX* is the audit committee index, *RECOMINDEX* is the remuneration committee index, *SHOLDINDEX* is the shareholder rights index, *FAAINDEX* is the financial affairs and auditing index, *DISCINDEX* is the disclosure index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *z*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level

Given the inconsistent, and in most cases the insignificant association between the adoption of corporate governance and firm performance during the whole period, this thesis in the next section tries to conduct further analysis to better characterise the variables into sub-periods and understand the surprising results based on the whole period.

8.3   EMPIRICAL FINDINGS: PRE 2003 AND POST 2003 PERIODS GOVERNANCE-PERFORMANCE RELATIONSHIP

Following the initial analysis for the whole period, the pre 2003 (2000-2002) and post 2003 (2004-2009) governance-performance relationship based on

hypotheses two to six is presented in this section. Consistent with Cui *et al* (2008) and Bhagat and Bolton (2009), 2003 is used as a seminal year because of the introduction of the Ghanaian Code provisions and is excluded from the analysis of pre 2003 and post 2003 sub-periods. Specifically, the estimated fixed effects regression results based on the specific governance mechanisms are reported in subsection 8.3.1 to test hypothesis two to five. Subsection 8.3.2 presents the fixed/random-effects regressions results based on the *GCGI* to test hypothesis six. Similar to section 8.2, the results based on the accounting-based performance measures (ROA & ROE) are first presented, followed by the market-based performance measure (Q-ratio).

8.3.1 Pre 2003 and Post 2003 findings based on the specific governance mechanisms

8.3.1.1 *Pre 2003 and Post 2003 findings based on the accounting measures of performance (ROA & ROE)*

Table 8-10 reports pre 2003 and post 2003 panel data fixed effects regression results of the specific governance mechanisms based on the accounting-based performance measure of ROA. Interestingly, and inconsistent with hypothesis two, pre 2003 CEO duality is found to be negatively associated with ROA for models 1 to 3. However, and as shown in models 4 to 6 of Table 8-10, the post 2003 period experienced sign reversals where CEO duality is found to be positively associated with ROA. The positive coefficient during the post 2003 period may be attributed to the decline of compliance with separating the two roles from 85% (pre 2003) to 83% (post 2003). In particular, some of the Ghanaian listed firms slightly changed their leadership structure and that might have impacted positively on firm performance measured by ROA post 2003.

Table 8-10: Pre 2003 and Post 2003 Panel-data fixed-effects regressions of specific governance mechanisms and return on assets (ROA)

Variables	Pre (2000-2002)			Post (2004-2009)		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	22.813	24.423	26.077	8.501	7.210	9.021
	(1.29)	(1.71)*	(1.91)*	(1.02)	(0.93)	(1.26)
CEODUAL	-0.289	-0.277	-0.550	1.599	1.406	1.515
	(0.07)	(0.07)	(0.14)	(0.59)	(0.53)	(0.57)
BODSIZE1	0.332	0.383	0.523	0.541	0.484	0.468
	(0.37)	(0.44)	(0.65)	(1.15)	(1.07)	(1.04)
PNEDs1	-0.278	-0.284	-0.299	-0.083	-0.083	-0.083
	(2.40)**	(2.57)**	(2.89)***	(1.05)	(1.06)	(1.06)
AUCOM1	2.423	2.332	2.218	0.173	0.191	0.215
	(0.52)	(0.51)	(0.49)	(0.08)	(0.09)	(0.11)
RECOM1	14.012	14.473	14.770	-1.170	-1.148	-1.103
	(2.21)**	(2.37)**	(2.46)**	(0.52)	(0.52)	(0.49)
GEAR	-0.025	-0.021	-	-0.088	-0.089	-0.091
	(0.46)	(0.42)	-	(2.59)***	(2.66)***	(2.73)***
SIZE	0.130	-	-	-0.275	-	-
	(0.11)	-	-	(0.43)	-	-
GROWTH	-2.248	-2.285	-2.633	2.098	2.003	1.959
	(0.50)	(0.52)	(0.61)	(1.88)	(1.84)	(1.81)
AGE	0.237	0.237	0.245	0.050	0.051	-
	(2.07)**	(2.12)**	(2.25)**	(0.60)	(0.63)	-
Observations	65	65	65	193	193	193
Group[a]	23	23	23	39	39	39
R^2 (Overall)	0.420	0.421	0.421	0.103	0.098	0.095

Notes: The pre 2003 and post 2003 dependent variable is the return on assets (ROA). *CEODUAL* is the CEO duality, *BODSIZE1* is the board size, *PNEDs1* is the proportion of non-executive directors, *AUCOM1* represents the existence of audit committee, *RECOM1* represents the existence of remuneration committee, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

However, this finding does not lend empirical support to the work of Bhagat and Bolton (2009) who found CEO duality to be statistically significant and positively related to ROA during their pre 2002 and post 2002 periods. That notwithstanding, the panel data regressions with fixed effects as estimation methods in this thesis as opposed to OLS and 2SLS estimation methods used by Bhagat and Bolton (2009) may have accounted for the differences in findings. Contrary to hypothesis three, the board size is found to be consistently but insignificantly positively related to ROA during pre 2003 and post 2003 periods. This finding is not surprising because the board size of the Ghanaian listed firms on average did not change significantly (i.e. from 9.03 during pre 2003 to 8.17 post 2003). Therefore, the consistent positive coefficient during pre 2003 and post 2003 periods suggests that the board

size between 8 and 9 among Ghanaian listed firms appears to be effective and efficient for decision making that influences firm performance.

Similarly to the whole period, and consistent with hypothesis four, the PNEDs is found to be statistically significant and negatively related to ROA during pre 2003 period. This is not the case for post 2003 where the relationship is negative but not statistically significant, given that the proportion of non-executive directors did not change significantly (i.e. from 75.20% during pre 2003 to 75.99% post 2003). This suggests that the Ghanaian firms have a greater proportion of non-executive directors than the code[34] recommended and therefore poorer performance during both periods. However, the pre 2003 statistically significant and negative relationship between the PNEDs and firm performance measured by ROA lends empirical support to international pre and post studies (Bhagat and Bolton, 2009). For example, Bhagat and Bolton (2009) reported board independence to be statistically significant and negatively related to ROA during pre 2002 SOX (i.e. from 1998 to 2001).

That notwithstanding, the insignificant negative association between the two during post 2003 in this thesis contradicts Bhagat and Bolton (2009) who experienced sign reversals with board independence found to be statistically significant and positively associated with ROA for their post 2002 (i.e. from 2003 to 2007) findings. In this case, two possible explanations for the differences in findings between the two studies can be put forward. First, the US boards became more independent post 2002 adoption of SOX, whereas the proportion of non-executive directors of the Ghanaian counterparts did not change significantly although there was a greater proportion of non-executive directors' pre 2003. Second, the differences may be attributed to the different methods of estimation. Whereas this thesis adopted panel data

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[34] The Ghanaian Code recommends that firms should have a balance of executive and non-executive directors to sit on the board. However, and as indicated earlier, most of the firms have only the CEO as an executive director to sit on the board.

regressions with fixed effects estimation, Bhagat and Bolton (2009) used OLS and 2SLS to investigate the relationship between the two.

With regards to the existence of board committees during pre 2003 and post 2003 periods, the audit committee is found to be positively associated with firm performance measured by ROA for both periods, evidence not consistent with hypothesis five. By contrast, and consistent with hypothesis five, the remuneration committee is found to be statistically significant and positively related to ROA during pre 2003 but experienced sign reversal during post 2003 where the relationship became negative. This evidence is particularly important because the adoption of the remuneration committee as a governance mechanism does not support the Ghanaian Code provision during the post 2003 period. This suggests that compliance with the establishment of a remuneration committee does not guarantee performance as both periods have exhibited different relationships even though the Ghanaian listed firms' experienced marginal improvement (i.e. from 17% during pre 2003 to 30% post 2003) in the establishment of a remuneration committee post 2003.

Table 8-11 presents pre 2003 and post 2003 panel data fixed effects regression results of the specific governance mechanisms and the accounting-based firm performance measure of ROE. Consistent with the whole period, CEO duality is found to be negatively related to ROE during pre 2003 and post 2003 periods. The insignificant negative association during both periods does not support hypothesis two that the separation of the two roles should lead to higher firm performance. As Table 8-11 indicates below, the pre 2003 and post 2003 board size are also found to have consistent positive association with ROE similar to the whole period. However, and consistent with hypothesis three, the post 2003 board size-ROE relationship is statistically significant, suggesting that the marginal reduction of the Ghanaian listed firms board sizes from 9.03 (pre 2003) to 8.17 (post 2003) affected firm performance measured by ROE more significantly than ROA where the relationship experienced no significant change.

Table 8-11: Pre 2003 and Post 2003 Panel-data fixed-effects regressions of specific governance mechanisms and return on equity (ROE)

Variables	Pre (2000-2002)			Post (2004-2009)		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-55.381	-40.620	-35.069	27.069	25.808	15.720
	(0.69)	(0.52)	(0.47)	(1.16)	(1.19)	(0.80)
CEODUAL	-0.905	-0.501	-0.123	-0.306	-0.455	-0.856
	(0.05)	(0.03)	(0.01)	(0.04)	(0.06)	(0.12)
BODSIZE1	5.835	5.257	5.364	2.903	2.869	3.001
	(1.44)	(1.33)	(1.37)	(2.21)**	(2.29)**	(2.42)**
PNEDs1	-0.052	-0.145	-0.153	-0.247	-0.248	-0.244
	(0.10)	(0.29)	(0.31)	(1.12)	(1.13)	(1.13)
AUCOM1	4.917	0.906	1.096	1.368	1.359	1.070
	(0.22)	(0.04)	(0.05)	(0.25)	(0.24)	(0.19)
RECOM1	55.251	63.374	65.442	-7.445	-7.408	-7.688
	(1.87)*	(2.33)**	(2.52)**	(1.19)	(1.19)	(1.25)
GEAR	-1.039	-0.991	-1.002	-0.234	-0.234	-0.223
	(3.94)***	(3.90)***	(4.04)***	(2.52)**	(2.55)**	(2.44)**
SIZE	7.486	6.657	6.525	0.220	-	-
	(1.44)	(1.32)	(1.31)	(0.13)	-	-
GROWTH	-16.116	-	-	7.969	7.923	8.164
	(0.72)	-	-	(2.70)***	(2.75)***	(2.83)***
AGE	0.186	0.142	-	-0.275	-0.269	-
	(0.36)	(0.28)	-	(1.12)	(1.11)	-
Observations	65	65	65	193	193	193
Group[a]	23	23	23	39	39	39
R^2	0.420	0.415	0.414	0.139	0.139	0.134

Notes: The pre 2003 and post 2003 dependent variable is the return on equity (ROE). *CEODUAL* is the CEO duality, *BODSIZE1* is the board size, *PNEDs1* is the proportion of non-executive directors, *AUCOM1* represents the existence of audit committee, *RECOM1* represents the existence of remuneration committee, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Consistent with the whole period, the PNEDs is found to be consistent and negatively associated with ROE during pre 2003 and post 2003 periods, evidence not supported by hypothesis four that the higher the PNEDs, the lower the firm performance. However and contrary to ROA where the pre 2003 is found to be statistically significant, both pre 2003 and post 2003 periods PNEDs-ROE relationship are negative but not significant. Similar to the pre 2003 and post 2003 audit committee-ROA relationship, and consistent with the whole period of ROE, the pre 2003 and post 2003 existence of an audit committee is found to be positively related to ROE, evidence not supported by hypothesis five that the presence of audit committee should lead to better firm performance. Although, the coefficients of audit committee and ROE during both periods are positive, the significant

improvement in compliance level from pre 2003 (34%) to post 2003 (80%) did not have any significant impact on firm performance. Interestingly, and consistent with the pre 2003 and post 2003 remuneration committee-ROA relationship, there is statistically significant and positive association between the existence of a remuneration committee and ROE during pre 2003, indicating that hypothesis five is supported. This is however not the case for post 2003 where the remuneration committee-ROE relationship experienced sign reversals with insignificant negative relationship. The sign reversal is consistent with the post 2003 findings of ROA but contradictory to the whole period of the remuneration committee-ROE relationship where the relationship is positive. This suggests that the positive association found during the whole period is driven by the statistically significant and positive association between the two during the pre 2003 period.

8.3.1.2 *Pre 2003 and Post 2003 findings based on the market measure of performance (Q-ratio)*

Table 8-12 reports the pre 2003 and post 2003 panel data fixed effects regression results of the specific governance mechanisms and the market-based performance measure of Q-ratio. In line with ROA, the pre 2003 CEO duality is found to be negatively related to Q-ratio, evidence not supported by hypothesis two. By contrast, the post 2003 CEO duality is found to be positively associated with Q-ratio, suggesting that the positive relationship experienced by the whole period is driven by the post 2003 relationship between the two. Although not statistically significant, these findings also lend empirical support to the work of Bhagat and Bolton (2009) who found CEO duality to be negatively related to Q-ratio during pre 2002 and a positive association between the two during the post 2002 period.

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Table 8-12: Pre 2003 and Post 2003 Panel-data fixed-effects regressions of specific governance mechanisms and Tobin's (Q-ratio)

	Pre (2000-2002)			Post (2004-2009)		
	Model1	Model2	Model3	Model4	Model5	Model6
Intercept	3.913	3.952	3.616	2.796	2.828	2.427
	(1.60)	(1.70)*	(1.66)*	(2.01)**	(2.05)**	(1.88)*
CEODUAL	-0.844	-0.817	-0.838	0.422	0.418	0.355
	(1.02)	(1.02)	(1.07)	(0.96)	(0.96)	(0.83)
BODSIZE1	0.046	0.037	0.037	0.027	0.025	0.005
	(0.43)	(0.36)	(0.37)	(0.34)	(0.32)	(0.07)
PNEDs1	-0.003	-0.005	-0.006	-0.018	-0.018	-0.017
	(0.19)	(0.29)	(0.32)	(1.34)	(1.35)	(1.32)
AUCOM1	0.099	0.109	0.109	-0.031	-0.019	-0.027
	(0.30)	(0.34)	(0.34)	(0.10)	(0.06)	(0.09)
RECOM1	0.543	0.551	0.547	-0.181	-0.166	-0.160
	(1.02)	(1.08)	(1.08)	(0.49)	(0.45)	(0.43)
GEAR	0.004	0.004	0.004	0.001	-	-
	(1.13)	(1.13)	(1.15)	(0.25)	-	-
SIZE	-0.250	-0.249	-0.243	-0.082	-0.080	-
	(1.01)	(1.05)	(1.05)	(0.83)	(0.81)	-
GROWTH	-0.026	-	-	0.027	0.028	0.058
	(0.10)	-	-	(0.17)	(0.17)	(0.37)
AGE	-0.010	-0.010	-	-0.003	-0.003	-0.002
	(0.45)	(0.48)	-	(0.16)	(0.16)	(0.12)
Observations	65	65	65	193	193	193
Group[a]	23	23	23	39	39	39
R^2	0.245	0.273	0.246	0.045	0.041	0.028

Notes: The pre 2003 and post 2003 dependent variable is the Tobin's Q (Q-ratio). *CEODUAL* is the CEO duality, *BODSIZE1* is the board size, *PNEDs1* is the proportion of non-executive directors, *AUCOM1* represents the existence of audit committee, *RECOM1* represents the existence of remuneration committee, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
** Significant at 5% level
* Significant at 10% level

Similar to pre 2003 and post 2003 board size-ROA relationship, the board size is found to have a consistent positive relationship with Q-ratio during pre 2003 and post 2003 sub-periods, suggesting that hypothesis three is not supported. However, the insignificant positive coefficients for all the models of Table 8-12 contradict what is reported with respect to the whole period where board size is found to be statistically significant and positively associated with Q-ratio. This suggests that the overall average board size of 8.52 appears to be more effective than the pre 2003 (9.03) and post 2003 (8.17) board sizes, hence the positive and statistically significant level at 1% for the whole period.

Unlike the whole period where the PNEDs is found to be statistically significant and negatively associated with Q-ratio, the pre 2003 and post 2003 PNEDs are consistently and negatively related to Q-ratio for all the models of Table 8-12, suggesting that hypothesis four is not supported. These insignificant negative coefficients are supported by the findings of pre 2003 and post 2003 accounting-based performance measure of ROE where similar relationships are established. However, these findings do not lend empirical support to the Bhagat and Bolton (2009) study where there is an insignificant negative association between board independence and Q-ratio during pre 2003 but a sign reversal during the post 2003 period to a statistically significant and positive relationship between the two. That notwithstanding, both the accounting-based and the market-based performance measures used in this thesis are negatively affected by the PNEDs significantly with poorer firm performance during the whole period than pre 2003 and post 2003 sub-periods.

Contrary to the pre 2003 and post 2003 consistent positive association between audit committee and ROA as well as ROE, the audit committee is only found to be positively related to Q-ratio during pre 2003 (see models 1 to 3 of Table 8-12) but experiences sign reversals to negative. These findings contradict the negative association reported earlier between the two during the whole period, suggesting that the relationship is driven by the post 2003 negative association between audit committee and Q-ratio. Similarly, and as indicated in models 1 to 3 of Table 8-12, the pre 2003 remuneration committee is found to be positively related to Q-ratio but experienced sign reversals to negative during post 2003 period. These findings are consistent with pre 2003 and post 2003 sign reversals using the accounting-based firm performance measures of ROA and ROE discussed earlier. However, and unlike the audit committee, the positive relationship during the whole period is driven by the pre 2003 positive association between the remuneration committee and Q-ratio.

8.3.2 Pre 2003 and Post 2003 findings based on the *GCGI*

8.3.2.1 *Pre 2003 and Post 2003 findings based on the accounting measures of performance (ROA & ROE)*

Table 8-13 presents pre 2003 and post 2003 panel data fixed effects regression results of the *GCGI* based on the accounting-based performance measure of ROA. The *GCGI* is found to be statistically significant and positively related to ROA during the pre 2003 period, suggesting that hypothesis six is supported. However, the post 2003 experienced sign reversals where the *GCGI* is found to be negative and in most cases statistically significant and positively related to ROA. These findings suggest that the positive association between the *GCGI* and ROA reported during the whole period is driven by the pre 2003 significant positive association between the two. Arguably, the pre 2003 positive coefficient is not surprising because, and as indicated in section 6.7 of chapter six, the majority of the Ghanaian listed firms have already complied with thirty-four out of the thirty-six provisions that constitute the *GCGI* before the formal adoption of the Ghanaian Code provisions post 2003. However, the significant improvement of the *GCGI* from 57% (pre 2003) to 73% (post 2003) did affect firm performance negatively during the post 2003 period, suggesting that the adoption of the Ghanaian Code provisions does not guarantee improvement in performance measured by ROA. That notwithstanding, these findings do not lend support to prior empirical pre and post index studies (Cui *et al*, 2008). Even though Cui *et al* (2008) found insignificant negative association between their corporate governance scores (CGS) and firm performance measured by ROA during pre 2003, they experienced sign reversals with statistically significant and positive association between their CGS and firm performance measured by ROA in the post 2003 period.

Table 8-13: Pre 2003 and Post 2003 Panel-data fixed-effects regressions of the *GCGI* and return of assets (ROA)

Variable	Pre (2000-2002)			Post (2004-2009)		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-24.657	-19.040	-17.487	9.960	9.925	11.497
	(2.39)**	(2.62)***	(2.38)**	(1.40)	(1.65)*	(2.20)**
GCGI	0.365	0.361	0.342	-0.065	-0.065	-0.067
	(3.97)***	(3.91)***	(3.62)***	(0.90)	(0.90)	(0.93)
GEAR	-0.058	-0.049	-0.053	-0.088	-0.088	-0.090
	(1.18)	(1.03)	(1.12)	(2.64)***	(2.66)***	(2.70)***
SIZE	0.872	-	-	-0.003	-	-
	(0.72)	-	-	(0.01)	-	-
GROWTH	-0.417	-0.944	-	1.947	1.947	1.910
	(0.10)	(0.24)	-	(1.77)	(1.82)	(1.79)
AGE	0.299	0.292	0.288	0.042	0.042	-
	(2.59)***	(2.50)**	(2.35)**	(0.50)	(0.50)	-
Observations	65	65	65	193	193	193
Group[a]	23	23	23	39	39	39
R^2 (Overall)	0.361	0.350	0.351	0.068	0.068	0.063

Notes: The pre 2003 and post 2003 dependent variable is the return on assets (ROA). *GCGI* is the Ghanaian corporate governance index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Fundamentally, three possible explanations can be put forward for the differences in findings between this thesis and that of Cui *et al* (2008). First, whereas this thesis used researcher-developed index methodology and is purely based on the Ghanaian Code provisions, Cui *et al* (2008) adopted the Horwath Report, a commercial rating agency in Australia of which the authors are not aware of what is in the ratings that constitute the CGS. They noted that the ratings are not exactly the same as the ASX recommendations but the Report was used as a proxy for the degree of compliance with the ASX recommendations. Second, the pre 2003 and post 2003 periods in this thesis incorporate three years (pre 2003) and seven years (post 2003) sub-periods, whereas Cui *et al* (2008) only used the ratings of 2001 (one year before) and 2004 (one year after) ASX recommendations. This is particularly important because one year before and one year after might not be sufficient for the impact to be examined where the relationship between the adoption of the governance provisions and firm performance could change in the longer term. Finally, this thesis adopted panel data regression with fixed effects as a method of estimation, whereas Cui *et al* (2008) used OLS for

their investigation. The above three reasons may have accounted for the differences in findings between both studies.

The results based on the association between pre 2003 and post 2003 *GCGI* and ROA indicate that corporate governance does matter more during the pre 2003 period. However, and as indicated earlier, the findings do not show which of the six sub-indices of the *GCGI* affects firm performance significantly during the pre 2003 period. Table 8-14 contains the relationship between the sub-indices and ROA during pre 2003 and post 2003 periods. Although insignificant, board composition index is found to be positively associated with ROA during the pre 2003 period. This is however not the case for post 2003 where the relationship became negative and might have been caused by the marginal decrease of the compliance level from 65% (pre 2003) to 64% (post 2003). This suggests that the positive relationship between board composition index and ROA found during the whole period is driven by the pre 2003 positive association between board composition index and ROA. Unlike the whole period where the audit committee is found to be statistically insignificant but negatively associated with ROA, the pre 2003 audit committee index is found to be statistically significant and positively associated with ROA but the relationship experienced sign reversals to insignificant negative association between the two during post 2003. Similarly, the pre 2003 remuneration committee index is found to be statistically significant and positively related to ROA but the post 2003 relationship became negative. Both shareholder rights and the financial affairs and auditing indices are found to have consistent but insignificant positive association with ROA during pre 2003 and post 2003 periods. This is however not the case for the disclosure index-ROA relationship where pre 2003 is found to be positive but experienced sign reversals to negative association between the two. Given the statistically significant and positive nature of audit committee and remuneration committee indices during pre 2003, it can be argued that the significant relationship between pre 2003 *GCGI* and ROA is driven by the board committees' sub-indices.

Table 8-14: Pre 2003 and Post 2003 panel-data fixed-effects regressions of the sub-indices and return on assets (ROA)

Variables	Pre (2000-2002)		Post (2004-2007)	
	Model 1	Model 2	Model 3	Model 4
Intercept	-15.131	-10.449	6.843	9.404
	(1.04)	(0.84)	(0.68)	(1.09)
BOARDINDEX	0.022	0.034	-0.007	-0.012
	(0.21)	(0.33)	(0.10)	(0.19)
AUCOMINDEX	-	0.131	-	-0.017
	-	(3.24)***	-	(0.74)
RECOMINDEX	0.186	-	-0.028	-
	(2.74)***	-	(0.78)	-
SHOLDINDEX	0.023	0.052	0.025	0.025
	(0.18)	(0.37)	(0.29)	(0.30)
FAAINDEX	0.135		0.020	
	(0.73)		(0.20)	
DISCINDEX	0.255		-0.002	
	(1.57)		(0.02)	
GEAR	-0.065	-0.055	-0.091	-0.089
	(1.30)	(1.05)	(2.65)***	(2.64)***
SIZE	1.058	1.333	-0.068	-0.056
	(0.75)	(0.96)	(0.11)	(0.09)
GROWTH	-2.846	-0.336	2.118	2.034
	(0.69)	(0.08)	(1.86)*	(1.82)*
AGE	0.261	0.346	0.055	0.045
	(2.10)**	(2.73)***	(0.68)	(0.54)
Observations	65	65	193	193
Group[a]	23	23	39	39
R^2 (Overall)	0.435	0.339	0.072	0.066

Notes: The pre 2003 and post 2003 dependent variable is the return on assets (ROA). *BOARDINDEX* is the board composition index, *AUCOMINDEX* is the audit committee index, *RECOMINDEX* is the remuneration committee index, *SHOLDINDEX* is the shareholder rights index, *FAAINDEX* is the financial affairs and auditing index, *DISCINDEX* is the disclosure index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 8-15 presents the pre 2003 and post 2003 panel data fixed effects regressions results based on the *GCGI* and firm performance measure of ROE. Consistent with the pre 2003 *GCGI*-ROA relationship, the *GCGI* is found to be statistically significant and positively related to ROE during pre 2003, suggesting that hypothesis six is supported. Although not statistically significant, the relationship between the *GCGI* and ROE remains positive during post 2003, the findings not consistent with the post 2003 period where the relationship is negative between the *GCGI* and ROA. Also, and as in the case of ROA, the significant improvement of the degree of compliance with the adoption of the Ghanaian Code provisions from 57% (pre 2003) to

73% (post 2003) failed to have any significant effect on firm performance measured by ROE. These findings suggest that the significant improvement in the adoption of corporate governance provisions does not guarantee improvement in performance among Ghanaian listed firms. Arguably, the consistent positive association between the *GCGI* and ROE during pre 2003 and post 2003 sub-periods is a case for the positive association between the *GCGI* and ROE during the whole period, indicating that the relationship is driven by the pre 2003 statistically significant and positive relationship between the two.

Table 8-15: Pre 2003 and Post 2003 Panel-data fixed-effects regressions of the *GCGI* and return on equity (ROE)

Variable	Pre (2000-2002)			Post (2004-2009)		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-94.271	-97.084	-68.976	32.840	38.017	26.011
	(2.14)**	(2.15)**	(1.63)	(1.64)	(2.24)**	(1.78)*
GCGI	1.351	1.396	1.263	0.086	0.079	0.068
	(3.30)***	(3.37)***	(2.91)***	(0.42)	(0.39)	(0.34)
GEAR	-0.903	-0.884	-1.032	-0.251	-0.246	-0.238
	(3.74)***	(3.69)***	(4.27)***	(2.72)***	(2.68)***	(2.59)***
SIZE	8.449	7.739	8.005	0.873	-	-
	(1.66)*	(1.50)	(1.44)	(0.53)	-	-
GROWTH	-26.538	-	-	7.560	7.937	8.222
	(1.23)	-	-	(2.57)**	(2.77)***	(2.85)***
AGE	0.612	0.585	-	-0.334	-0.336	-
	(1.25)	(1.16)	-	(1.31)	(1.33)	-
Observations	65	65	65	193	193	193
Group[a]	23	23	23	39	39	39
R^2 (Overall)	0.322	0.3044	0.284	0.057	0.057	0.052

Notes: The pre 2003 and post 2003 dependent variable is the return on equity (ROE). *GCGI* is the Ghanaian corporate governance index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Similar to the pre 2003 and post 2003 *GCGI*-ROA relationship, the findings based on the relationship between the *GCGI* and ROE during pre 2003 and post 2003 periods suggest that corporate governance in Ghana does matter. However, the results do not fully reveal the impact of each sub-index of the *GCGI* to performance measure of ROE during the sub-periods. Table 8-16 reports the results of the relationship between the sub-indices and ROE. Unlike the pre 2003 board composition index-ROA relationship, and as can be

seen from models 1 and 2 of Table 8-16, the board composition index is found to be statistically significant and positively related to ROE during the pre 2003 period but experienced insignificant positive association between the two during the post 2003 period. This suggests that the positive and statistically significant findings between the two during the whole period is driven by the pre 2003 board composition index-ROE relationship results. Interestingly, and consistent with the pre 2003 board committees-ROA relationship, both audit and remuneration committees indices are found to be statistically significant and positively related to ROE during pre 2003 period. However, they experienced sign reversals to have insignificant negative impact on ROE during post 2003, evidence consistent with post 2003 ROA findings. These findings also suggest that the positive association found during the whole period between audit and remuneration committees indices and ROE are driven by the pre 2003 positive and statistically significant results.

Although not significant in model 1 of Table 8-16, shareholder rights index in model 2 is found to be statistically significant and positively associated with ROE during pre 2003 period. However, and similar to the post 2003 shareholder rights index-ROA relationship, the post 2003 experienced insignificant positive association between the two. Arguably, the consistent positive association between the shareholder rights index and ROE during pre 2003 and post 2003 sub-periods may be the reason for the positive association reported earlier for the whole period. Contrary to the pre 2003 financial affairs and auditing index-ROA positive relationship, the pre 2003 financial affairs and auditing index is found to be negatively associated with ROE but experienced sign reversals to positive association between the two. In fact, this is the first time one of the sub-indices has experienced sign reversals from negative to positive impact on ROE, suggesting that the improvement of the financial affairs and auditing index from 77% (pre 2003) to 95% (post 2003) has a positive effect on ROE. These findings also suggest that the negative relationship between the financial affairs and auditing index

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and ROE found during the whole period is driven by the pre 2003 negative association between the two.

Table 8-16: Pre 2003 and Post 2003 panel-data fixed-effects regressions of the sub-indices and return on equity (ROE)

Variables	Pre (2000-2002)		Post (2004-2009)	
	Model 1	Model 2	Model 3	Model 4
Intercept	-33.512	-60.471	10.739	24.185
	(0.56)	(1.22)	(0.39)	(1.01)
BOARDINDEX	0.811	0.849	0.272	0.212
	(1.92)*	(2.02)**	(1.57)	(1.19)
AUCOMINDEX	-	0.531	-	-0.030
	-	(3.01)***	-	(0.47)
RECOMINDEX	1.035	-	-0.088	-
	(3.59)***	-	(0.90)	-
SHOLDINDEX	0.836	1.112	0.086	0.133
	(1.40)	(1.79)*	(0.36)	(0.59)
FAAINDEX	-0.020	-	0.151	-
	(0.02)	-	(0.55)	-
DISCINDEX	0.202	-	-0.101	-
	(0.27)	-	(0.50)	-
GEAR	-1.092	-1.029	-0.260	-0.263
	(4.63)***	(4.23)***	(2.79)***	(2.85)***
SIZE	11.262	15.566	1.111	0.972
	(2.00)**	(2.75)***	(0.66)	(0.58)
GROWTH	-7.911	-25.347	7.900	7.543
	(0.37)	(1.20)	(2.55)**	(2.51)**
AGE	0.206	0.862	-0.283	-0.310
	(0.42)	(1.69)*	(1.28)	(1.28)
Observations	65	65	193	193
Group[a]	23	23	39	39
R^2 (Overall)	0.446	0.380	0.101	0.077

Notes: The pre 2003 and post 2003 dependent variable is the return on equity (ROE). *BOARDINDEX* is the board composition index, *AUCOMINDEX* is the audit committee index, *RECOMINDEX* is the remuneration committee index, *SHOLDINDEX* is the shareholder rights index, *FAAINDEX* is the financial affairs and auditing index, *DISCINDEX* is the disclosure index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Consistent with the pre 2003 and post 2003 disclosure index-ROA relationship, the pre 2003 disclosure index is found to be positively related to ROE but experienced sign reversals during the post 2003 period to negative. However, and unlike ROA, the negative relationship between the disclosure index and ROE during the combine period is driven by the post 2003 negative association between the two. As indicated in models 1 to 3 of Table 8-15, and given the statistically significant and positive association between the

GCGI and ROE pre 2003, it may be concluded that the significant positive association between the two is driven by the statistically significant and positive impact of board composition, audit and remuneration committees indices on ROE reported in models 1 and 2 of Table 8-16. This is particularly important because not all the six sub-indices are influential to firm performance measured by ROE.

8.3.2.2 *Pre 2003 and Post 2003 findings based on the market measure of performance (Q-ratio)*

Table 8-17 reports pre 2003 and post 2003 panel data random effects regression results of the *GCGI* based on the market-based performance measure of Q-ratio.

Table 8-17: Pre 2003 and Post 2003 Panel-data random-effects regressions of the *GCGI* and the Tobin's Q (Q-ratio)

Variables	Pre (2000-2002)			Post (2004-2009)		
	Model1	Model2	Model3	Model4	Model5	Model6
Intercept	2.644	2.674	2.235	2.200	2.179	1.766
	(1.65)*	(1.69)*	(1.60)	(1.88)*	(1.88)*	(2.07)**
GCGI	0.013	0.013	0.013	-0.010	-0.009	-0.010
	(1.30)	(1.33)	(1.37)	(0.84)	(0.82)	(0.84)
GEAR	0.004	0.004	0.005	0.001	-	-
	(1.17)	(1.23)	(1.25)	(0.22)	-	-
SIZE	-0.272	-0.278	-0.272	-0.052	-0.051	-
	(1.24)	(1.29)	(1.29)	(0.56)	(0.55)	-
GROWTH	-0.050	-	-	0.050	0.051	-
	(0.20)	-	-	(0.32)	(0.32)	-
AGE	-0.012	-0.012	-	-0.003	-0.002	-
	(0.57)	(0.59)	-	(0.16)	(0.15)	-
Observations	65	65	65	193	193	193
Group[a]	23	23	23	39	39	39
R^2 (Overall)	0.208	0.203	0.175	0.005	0.003	0.002

Notes: The pre 2003 and post 2003 dependent variable is the Tobin's Q (Q-ratio). *GCGI* is the Ghanaian corporate governance index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *z*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
** Significant at 5% level
* Significant at 10% level

In this respect, and as can be seen from Table 8-17 above, the *GCGI* is found to be positively related to Q-ratio during the pre 2003 period. However, and contrary to the accounting-based firm performance measures of ROA and

ROE, the insignificant positive coefficient suggests that hypothesis six is not supported. In contrast, the post 2003 experienced sign reversals where the relationship between the *GCGI* and Q-ratio became negative, evidence consistent with the post 2003 *GCGI*-ROA relationship. These findings also lend empirical support to the work of Bhagat and Bolton (2009) who did not find any consistent significant relationship between their pre 2002 and post 2002 index and Q-ratio. Arguably, the positive association reported during the whole period between the *GCGI* and Q-ratio is driven by the pre 2003 positive relationship between the two.

As in the case of pre 2003 and post 2003 ROA and ROE, the results based on the relationship between the *GCGI* and Q-ratio during pre 2003 and post 2003 suggest that corporate governance does not have any consistent significant impact. In particular, the results do not fully indicate the impact of each sub-index of the *GCGI* to the performance measure of Q-ratio during the sub-periods. Table 8-18 presents the results of the relationship between the sub-indices and Q-ratio. Except for the shareholder rights index where there is no relationship between the two during pre 2003, the other five sub-indices[35] are found to be positively related to Q-ratio during pre 2003 period. However, the pre 2003 findings are in most cases not consistent with post 2003 results. Specifically, and as can be seen from models 3 and 4 of Table 8-18, the audit committee, financial affairs and auditing and disclosure indices experienced sign reversals to negative with financial affairs and auditing having negative and statistically significant association with Q-ratio. In contrast, the post 2003 board composition and remuneration committee indices are positively related to Q-ratio, the findings consistent with the pre 2003 period.

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[35] These include board composition, audit committee, remuneration committee, financial affairs and auditing and disclosure.

Table 8-18: Pre 2003 and Post 2003 panel-data random-effects regressions of the sub-indices and Tobin's Q (Q-ratio)

Variables	Pre (2000-2002)		Post (2004-2009)	
	Model 1	Model 2	Model 3	Model 4
Intercept	3.107	3.108	2.736	3.250
	(1.47)	(1.54)	(1.67)*	(2.26)**
BOARDINDEX	0.004	0.001	0.002	0.001
	(0.24)	(0.05)	(0.14)	(0.06)
AUCOMINDEX	-	0.004	-	-0.001
	-	(1.15)	-	(0.35)
RECOMINDEX	0.010	-	0.003	-
	(1.26)	-	(0.53)	-
SHOLDINDEX	0.000	0.000	0.029	0.023
	(0.02)	(0.00)	(2.15)**	(1.80)*
FAAINDEX	0.003	-	-0.025	-
	(0.16)	-	(1.65)*	-
DISCINDEX	0.006	-	-0.015	-
	(0.43)	-	(1.29)	-
GEAR	0.004	0.005	-0.001	0.000
	(1.14)	(1.18)	(0.20)	(0.08)
SIZE	-0.283	-0.262	-0.063	-0.063
	(1.13)	(1.12)	(0.68)	(0.67)
GROWTH	-0.018	-0.050	0.043	0.041
	(0.07)	(0.19)	(0.27)	(0.26)
AGE	-0.010	-0.010	-0.001	0.001
	(0.47)	(0.47)	(0.06)	(0.06)
Observations	65	65	193	193
Group[a]	23	23	39	39
R^2 (Overall)	0.215	0.193	0.004	0.001

Notes: The pre 2003 and post 2003 dependent variable is the Table's Q (Q-ratio). *BOARDINDEX* is the board composition index, *AUCOMINDEX* is the audit committee index, *RECOMINDEX* is the remuneration committee index, *SHOLDINDEX* is the shareholder rights index, *FAAINDEX* is the financial affairs and auditing index, *DISCINDEX* is the disclosure index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *z*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
** Significant at 5% level
* Significant at 5% level

Interestingly, the shareholder rights also experienced sign reversals from no association to positive and statistically significant association with Q-ratio during the post 2003 period. However, this finding is not consistent with post 2003 ROA and ROE where the relationship is positive but insignificant. Arguably, the positive and statistically significant relationship found between shareholder rights index and Q-ratio during post 2003 is as a result of the significant improvement of the degree of compliance with shareholder rights from 69% (pre 2003) to 76% (post 2003).

8.4   SUMMARY OF RESULTS AND DISCUSSION

An empirical investigation into the relationship between the degree of compliance with corporate governance and firm performance in Ghana has been conducted for the study period 2000 to 2009. Fundamentally, the governance variables were grouped into the specific governance mechanisms and the *GCGI* with firm performance measured by return on assets (ROA), return on equity (ROE) and Tobin's Q (Q-ratio). In line with previous studies, the findings based on the specific governance mechanisms during the whole period suggest statistically significant but in most cases weak relationships between the five specific governance mechanisms and all the firm performance variables. Although not statistically significant, the findings based on the *GCGI* indicate a positive relationship with all the firm performance variables during the whole period. This suggests that not all the Ghanaian Code provisions are important to improving firm performance measured by ROA, ROE and Q-ratio during the whole period, evidence supported by Diacon and O'Sullivan (1995) who reported strongly that some governance mechanisms are more effective than others in promoting profitability.

However, and focusing on the likely differences in findings before and after 2003 where the Ghanaian Code provisions were formally adopted by the Ghanaian listed firms, this thesis finds a shift in the relationship between corporate governance and firm performance after 2003. Prior to 2003 and based on the specific governance mechanisms, a remuneration committee is found to be statistically significant and positively related to the accounting-based firm performance measures of ROA and ROE. After 2003, a negative but insignificant association between a remuneration committee and the accounting-based firm performance measures was established. The most consistent relationship found concerns the PNEDs and board size. The relationship between the PNEDs and all the firm performance variables is consistently negative during pre 2003 and post 2003 sub-periods but only its

relationship with ROA is statistically significant during pre 2003. On the other hand, the relationship between board size and all the firm performance variables is consistently positive through each of the sub-periods but only its relationship with ROE is statistically significant during post 2003 period.

Following that, this thesis also finds that the relationship between the *GCGI* and all the firm performance variables experienced in most cases sign reversals and changes in significant levels following 2003. During the pre 2003 period, the *GCGI* is found to have a statistically significant and positive relationship with the accounting-based firm performance measures of ROA and ROE. After 2003, the *GCGI* switches sign to insignificant negative relationship with respect to ROA. However, the relationship between the *GCGI* and ROE remained positive but not significant during post 2003. The findings of the six sub-indices indicate that the statistically significant and positive relationship between the *GCGI* and the accounting-based firm performance measures is driven by the audit and remuneration committees' indices where the relationship between these sub-indices and the accounting-based firm performance measures are found to be positive and statistically significant during the pre 2003 period. Arguably, these findings are not surprising because, and as indicated earlier, thirty-four out of the thirty-six provisions imposed by the Ghanaian Code have already been complied with and disclosed in the firms annual reports before the formal adoption in the post 2003 period.

Overall, the findings suggest that a positive relationship between the *GCGI* and the accounting-based firm performance existed in pre 2003, but not post 2003. This indicates that the adoption of corporate governance provisions really matter to operating performance before the adoption of the Ghanaian Code was made mandatory. The lack of positive impact after the adoption of the Ghanaian code could be explained by the fact that many of the firms studied have already complied with most of the provisions before they were made mandatory. In addition, the significant improvement in compliance

with the Ghanaian Code provisions during post 2003 appears to be in line with good corporate governance practices but the general adoption does not allow for variability in the governance data and therefore makes it very difficult to establish the impact of the *GCGI* on firm performance. These findings may lead to the suggestion that the Ghanaian firms have engaged in a box ticking exercise believing that compliance will satisfy the shareholders and regulators that they have good corporate governance structures in place. Furthermore, the findings support the argument that the sub-periods analyses might be preferred to the analysis of the whole period due to the possible differences in corporate governance influencing firm performance across periods.

8.5   CHAPTER SUMMARY

This chapter has reported the initial empirical results and discussion of the relationship between corporate governance and firm performance. The impact of the specific governance mechanisms and the *GCGI* on firm performance in Ghana from 2000 to 2009 has been investigated using the whole period and sub-periods data. The specific governance mechanisms and the *GCGI* were found to have had varying relationships with firm performance in Ghana. These findings supported some prior empirical studies in other countries but the critical issue here is that the potential existence of endogeneity is ignored in the analysis of findings. It is therefore acknowledged in this thesis that the relationship between the *GCGI* and firm performance could be spurious and therefore the findings should be interpreted with this condition in mind. In the next chapter, endogeneity tests and checks for robustness will be conducted to confirm the stability of the initial results in this chapter.

CHAPTER NINE
ENDOGENEITYAND ROBUSTNESS CHECKS

9.1   INTRODUCTION

This chapter conducts endogeneity tests and a series of robustness checks to examine whether there is indeed stability in the initial results presented in chapter eight. The main objective is to show the robustness of the reported results to different explanations and estimations. In particular, and after testing for the exogeneity of the *GCGI* as the main explanatory variable[36], the results reported in chapter eight will be subjected to a set of robustness checks including lagged governance-performance relationship and panel instrumental variable (IV) regressions to address the endogeneity problems. The remainder of the chapter is structured as follows. Section 9.2 tests to determine the exogeneity of the *GCGI* as the main explanatory. Section 9.3 presents the findings based on the lagged governance-performance relationship. Section 9.4 reports the findings of the *GCGI*-performance relationship based on panel instrumental variable regressions. Section 9.5 presents summary of the results and discussion, while section 9.6 provides a summary to the chapter.

9.2   TESTS FOR DETERMINING THE EXOGENEITY OF THE *GCGI*

As noted earlier in sub-subsection 5.5.3.2 of chapter five, most prior studies assumed endogeneity but did not test it (Agrawal and Knoeber, 1996; Weir *et al*, 2002; Bruno and Claessens, 2010) as a possible reason for the lack of strong relationship between governance variables and firm performance

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[36] As noted in sub-subsection 5.5.3.2, the *GCGI* is used as the main explanatory variable for the exogeneity test because it integrates the other specific governance mechanisms when developing the index.

measures. Fundamentally, and as suggested by Larcker and Rusticus (2010), an exogeneity test needs to be performed on the main explanatory variable in this thesis to determine whether it is indeed endogenous or not. Using panel data, and given that the main explanatory variable of interest in this thesis is the *GCGI*, the *Durbin-Wu-Hausman exogeneity test*, which requires estimating the model via both OLS and instrumental variable (IV) models and comparing the resultant coefficients is important. The differences between the two coefficients give rise to a test statistic for the *null hypothesis* that the OLS model is consistent and fully efficient. Using instrumental variable (IV) for the purpose of consistency must also be balanced against expected loss of efficiency and therefore a test for the suitability of the OLS, and the need to employ instrumental variable (IV) would be very helpful in addressing the endogeneity problems. To the best of my knowledge, no study in Ghana has addressed the problem of endogeneity in a methodologically sound manner.

As indicated earlier in sub-subsection 5.5.3.2 of chapter five, and following prior governance-performance relationship studies (Beiner *et al*, 2006; Cheung *et al*, 2007; Shabbir and Padgett, 2008; Bhagat and Bolton, 2008, Ntim, 2009), the *Durbin-Wu-Hausman exogeneity test* is performed in this thesis. As explained in sub-subsection 5.5.3.2 of chapter five, the test follows a two step approach. First, the *GCGI* is assumed to be endogenous and therefore regressed on the four control variables[37] considered to be exogenous to the *GCGI*. The resulting residuals from the OLS regression are then saved and named as *RGCGI*. Second, the financial performance measures (ROA, ROE and Q-ratio) are regressed one by one on the *GCGI*, the residuals (*RGCGI*) and other explanatory variables. The decision is as follows: if the coefficient of the residuals is found to be statistically significant, then the *GCGI* is accepted as endogenously related to the firm performance measures. By contrast, if the coefficient of the residuals is found

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[37] As indicated in section 5.4 of chapter five, the control variables include gearing (GEAR), firm size (SIZE), growth opportunity (GROWTH) and firm age (AGE).

to be statistically insignificant, the *GCGI* is accepted as exogenously related to the firm performance measures.

Table 9-1 reports the findings of the OLS estimates (first stage) and *Durbin-Wu-Hausman exogeneity test* (second stage). In the first stage, and as in column 2 of Table 9-1, the *GCGI* is statistically significant and positively related to *GEAR* suggesting that the debt level of the Ghanaian listed firms has a positive influence on the degree of compliance with corporate governance and also lends empirical support to the proposition that debt can act as a self-enforcing governance mechanism (Gillian, 2006).

Table 9-1: Two-Stage regression results with Durbin-Wu-Hausman test for determining the exogeneity of the *GCGI*

	First stage	*Second Stage*		
	GCGI	**ROA**	**ROE**	**Q-ratio**
GCGI	-	0.821	3.655	0.037
		(2.97)***	(3.77)***	(0.87)
GEAR	0.094	-	-	-
	(2.66)***	-	-	-
SIZE	-0.107	-0.475	1.093	-0.167
	(0.15)	(0.94)	(0.62)	(2.18)**
GROWTH	-1.754	1.624	4.629	0.317
	(1.01)	(1.16)	(0.94)	(1.48)
AGE	-0.080	0.027	-0.371	-0.002
	(1.24)	(0.49)	(1.89)*	(0.19)
RGCGI	-	0.863	3.960	-0.034
	-	(3.08)***	(4.04)***	(0.79)
Observations	283	283	283	283
R^2	0.04	0.08	0.09	0.02

Notes: The dependent variables are the return on assets (ROA), return on equity (ROE) and the Tobin's Q (Q-ratio). *GCGI* is the Ghanaian corporate governance index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity, *AGE* is the firm age and the *RGCGI* are the residuals from the regression of the *GCGI* against its explanatory variables. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
***Significant at 1% level
** Significant at 5% level
* Significant at 10% level

In the second stage, and as can be seen from Columns 3 and 4 of Table 9-1, the coefficient of the *RGCGI* is highly statistically significant and positively related to the accounting-based firm performance measures of ROA and ROE, suggesting that the *GCGI* is endogenously related to the accounting-based firm performance measures. However, the statistically insignificant and negative correlation between the *RGCGI* and the market-based firm

performance measure of Q-ratio in column 5 of Table 9-1 suggests that the *GCGI* is accepted as exogenously related to Q-ratio. To further confirm the above findings, and given that the initial results on ROA and ROE in chapter eight were based on the fixed effects regression model, the Wooldridge (2006) formal endogeneity test[38] was performed (see Appendix 3) and found the *GCGI* to be endogenously related to ROA and ROE. These findings show that the original fixed effects regression model reported in chapter eight does indeed suffer from endogeneity.

Given that the *GCGI* is endogenously related to the accounting-based firm performance measures of ROA and ROE, the remaining analysis in this chapter will focus on addressing the endogeneity problems associated with them. This suggests that, and consistent with Padgett and Shabbir (2008)[39], the findings based on the market-based firm performance measure reported in chapter eight will not be considered for further analysis because the *GCGI* is accepted as exogenously related to the Q-ratio and therefore the findings reported in chapter eight are considered robust. In the following sections, the problems of the endogeneity of the accounting-based firm performance measures will be addressed through lagged governance-performance relationship estimation and panel instrumental variable (IV) regressions.

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[38] Using fixed effects regression model, Henry (2008) confirmed the endogeneity of his corporate governance score through the Wooldridge formal endogeneity test. The test involves estimating the fixed effects regression model augmented by the inclusion of leading (forward) lag values for the potentially endogenous variable (*GCGI*) and if the coefficients of the leading (forward) lag variable are statistically significant, then the *GCGI* is endogenous. In this case only the lagged *GCGI* is found to be statistically significant and positively related to the accounting-based firm performance measures.

[39] The authors found statistically insignificant and negative relationship between their non-compliance index and Q-ratio initially and therefore did not subject their index-Q-ratio relationship to robustness checks. This is particularly important, and as in the case of this thesis, the initial analysis in Chapter eight established insignificant relationship between the two, and in addition to the exogeneity test, will not subject the *GCGI*-Q-ratio to robustness checks.

9.3 LAGGED GOVERNANCE-PERFORMANCE RELATIONSHIP

This section reports findings based on the lagged governance-performance relationship to deal with the problems of endogeneity that resulted from time-lag[40] in the governance-performance relationship reported in chapter eight. Estimating lagged governance-performance relationship is consistent with what has been suggested by Larcker and Rusticus (2010) as one of the ways of addressing the problems of endogeneity. Also, and given the likelihood that the current governance variables might be jointly determined with firm performance (O'Sullivan and Diacon, 2003) within the regression model, the specific governance mechanisms and the *GCGI* in the subsequent two subsections are lagged by one year to address the problems of endogeneity in relation to the accounting-based firm performance measures of ROA and ROE. Of important interest in lagging the governance variables is that a firm's governance provisions in place at a particular year may yield results in the following year. Specifically, subsection 9.3.1 presents the findings based on estimating lagged specific governance mechanisms-performance relationship, while subsection 9.3.2 reports the findings based on the lagged *GCGI*-performance relationship.

9.3.1 Findings from lagged specific governance-performance (ROA and ROE) relationship estimation

Table 9-2 presents the findings obtained from lagged specific governance mechanisms and the accounting-based firm performance measures of ROA and ROE estimation during the whole period. As proposed by Larcker and Rusticus (2010), and to facilitate comparison, models 1 and 2 of Table 9-2 repeat un-lagged specific governance mechanisms-performance estimation reported in model 1 of Tables 8-1 and 8-2 of chapter eight, while models 3

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[40] The Wooldridge formal endogeneity test confirmed lagged *GCGI* to be statistically significant and positively related to the accounting-based firm performance measures using the fixed effects regression model. In this case, lagging the endogenous variable (s) by one year can help to address the problems of endogeneity (Hermalin and Weisbach, 2003; Wooldridge, 2002).

and 4 of Table 9-2 report the findings based on the lagged specific governance mechanism-performance estimation.

Table 9-2: Panel data fixed-effects regressions of the lagged specific governance mechanisms and accounting-based performance measures (ROA & ROE)

	Un-lagged estimation		Lagged estimation	
	Model 1	Model 2	Model 3	Model 4
	ROA	ROE	ROA	ROE
Intercept	14.406	41.029	17.791	50.350
	(1.85)*	(1.56)	(2.09)**	(1.89)*
CEODUAL	1.224	-5.344	-0.237	-6.640
	(0.52)	(0.67)	(0.10)	(0.86)
BODSIZE1	0.578	2.511	0.373	2.260
	(1.40)	(1.80)*	(0.84)	(1.64)*
PNEDs1	-0.177	-0.446	-0.197	-0.582
	(2.50)**	(1.88)*	(2.56)**	(2.47)**
AUCOM1	2.689	3.310	1.020	4.037
	(1.38)	(0.62)	(0.64)	(0.79)
RECOM1	0.468	3.230	1.009	7.967
	(0.23)	(0.48)	(0.48)	(1.20)
GEAR	-0.090	-0.535	-0.079	-0.528
	(3.17)***	(5.54)***	(2.64)***	(5.49)***
SIZE	-0.069	1.294	-0.165	1.152
	(0.11)	(0.62)	(0.26)	(0.57)
GROWTH	2.402	7.825	2.187	8.803
	(2.04)**	(1.95)*	(1.91)*	(2.34)**
AGE	0.055	-0.259	0.061	-0.232
	(0.74)	(1.04)	(0.70)	(0.91)
Observations	283	283	244	244
Group[a]	39	39	39	39
R^2 (Overall)	0.121	0.135	0.120	0.175

Notes: The dependent variables are the return on assets (ROA) and return on equity (ROE). *CEODUAL* is the CEO duality, *BODSIZE1* is the board size, *PNEDs1* is the proportion of non-executive directors, *AUCOM1* represents the existence of audit committee, *RECOM1* represents the existence of remuneration committee, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

As can be seen from Table 9-2 above, two important issues can be observed when comparing un-lagged and lagged estimations. First, the sign of the CEO duality coefficient under ROA in model 1 has changed from positive to negative in model 3 but remains statistically insignificant. Second, the remaining 4 and 5 specific governance mechanisms under ROA and ROE respectively, remain unchanged whether un-lagged or lagged estimated. This indicates that a majority of the findings based on the un-lagged specific

governance mechanisms-performance relationship reported in chapter eight are not sensitive to the time-lag.

In general, and consistent with the findings of the specific governance mechanisms-performance relationship reported in chapter eight, the results based on a lagged specific governance mechanisms-performance relationship are mixed. Specifically, the direction and the significant level of the coefficients on a majority of the 5 specific governance mechanisms considered remain unchanged under ROA and ROE except a lagged CEO duality which shows some level of sensitivity to ROA. Fundamentally, the sensitivity of the CEO duality under ROA may suggest that there is in fact governance-performance time-lag for the CEO duality. It can also be argued that the differences in the number of observations between the un-lagged (283) and the lagged (244) estimations may have accounted for the sensitivity of the CEO duality under ROA. Arguably, the findings based on the whole period lend additional support to previous results in chapter eight that there is a statistically significant but in most cases weak relationship between the five specific governance mechanisms and the accounting-based firm performance measures of ROA and ROE.

Table 9-3 reports the findings based on pre 2003 and post 2003 lagged specific governance mechanisms-performance relationship. To facilitate comparison, and as proposed by Larcker and Rusticus (2010), models 1 and 2 of Table 9-3 repeat the pre 2003 findings based on un-lagged specific governance mechanisms-performance relationship reported in model 1 of Tables 8-10 and 8-11 of chapter eight, while models 4 and 5 of Table 9-3 contain the pre 2003 findings based on a lagged specific governance mechanisms-performance relationship. Similarly, models 5 and 6 of Table 9-3 repeat the findings based on post 2003 un-lagged specific governance mechanisms-performance relationship reported in model 4 of Tables 8-10 and 8-11 of chapter eight, while models 7 and 8 of Table 9-3 present the

post 2003 findings based on a lagged specific governance mechanisms-performance relationship.

As can be seen from Table 9-3 below, the pre 2003 and post 2003 lagged specific governance mechanisms are more sensitive to the accounting-based firm performance measures of ROA and ROE than the whole period discussed earlier. Whereas the coefficient of pre 2003 lagged board size under ROE changed to positive and statistically significant at 5% level, the PNEDs during the same period under ROA changed from negative and statistically significant at 5% level (un-lagged) to negative but statistically insignificant (lagged). Similarly, the pre 2003 lagged remuneration committee changed from positive and statistically significant at 5% level to positive but statistically insignificant. Although not statistically significant, the lagged audit committee experienced sign reversal under ROE from positive (un-lagged) to a negative (lagged) relationship between the two. It is interesting to note that the lagged CEO duality did not experience any significant changes whether un-lagged or lagged estimated during pre 2003 period. This suggests that estimating lagged CEO duality-accounting-based firm performance measures relationship is effectively the same during the pre 2003 period.

With regard to post 2003, the lagged board size under ROA experienced sign reversal from positive to a negative relationship between the two. Also, the post 2003 lagged board size under ROE changed from positive and statistically significant at 5% level to a positive but statistically insignificant relationship between the two. Interestingly, the lagged PNEDs remained negative but statistically significant under both ROA and ROE during the post 2003 period relative to un-lagged estimation. Although not statistically significant, the lagged remuneration committee during post 2003 experienced sign reversal under both ROA and ROE from positive (un-lagged) to a negative (lagged) relationship between the two. Arguably, a lagged CEO duality and audit committee under both ROA and ROE are effectively the

same during the post 2003 period, suggesting that the CEO duality and audit committee during post 2003 are robust to the estimation of the lagged model.

In general, the lagged estimation based on the pre 2003 and post 2003 specific governance mechanisms-performance relationship indicates that the majority of the specific governance mechanisms under ROA and ROE are sensitive to the lagged estimation, although these are not statistically significant. However, the findings based on the pre 2003 suggest that a lagged governance-performance relationship exists between board size and ROE, evidence not consistent with the un-lagged board size-ROE relationship reported in chapter eight. Similarly, the results based on the post 2003 lagged specific governance mechanisms-performance relationship exist between PNEDs and firm performance (ROA and ROE), evidence not supported by the un-lagged PNEDs-performance relationship presented in chapter eight. Comparatively, and on the basis of the pre 2003 and post 2003 lagged specific governance mechanisms-performance relationship, it appears that the conclusion in chapter eight that there are differences in findings before and after 2003 is supported.

Table 9-3: Panel data fixed-effects regressions of the pre 2003 and post 2003 lagged specific governance mechanisms and accounting-based performance measures (ROA & ROE)

	Pre 2003 Un-lagged estimation		Pre 2003 lagged estimation		Post 2003 Un-lagged estimation		Post 2003 Lagged estimation	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	ROA	ROE	ROA	ROE	ROA	ROE	ROA	ROE
Intercept	22.813	-55.381	10.352	-71.757	8.501	27.069	14.067	48.134
	(1.29)	(0.69)	(0.42)	(0.79)	(1.02)	(1.16)	(1.54)	(1.86)*
CEODUAL	-0.289	-0.905	-2.439	-19.169	1.599	-0.306	0.416	-1.086
	(0.07)	(0.05)	(0.42)	(0.84)	(0.59)	(0.04)	(0.15)	(0.14)
BODSIZE1	0.332	5.835	0.148	9.047	0.541	2.903	-0.075	0.731
	(0.37)	(1.44)	(0.14)	(2.21)**	(1.15)	(2.21)**	(0.15)	(0.52)
PNEDs1	-0.278	-0.052	-0.178	0.030	-0.083	-0.247	-0.162	-0.518
	(2.40)**	(0.10)	(1.05)	(0.05)	(1.05)	(1.12)	(1.94)*	(2.19)**
AUCOM1	2.423	4.917	1.855	-11.884	0.173	1.368	1.970	7.037
	(0.52)	(0.22)	(0.19)	(0.35)	(0.08)	(0.25)	(0.95)	(1.18)
RECOM1	14.012	55.251	15.260	78.856	-1.170	-7.445	0.174	1.058
	(2.21)**	(1.87)*	(1.25)	(1.84)*	(0.52)	(1.19)	(0.07)	(0.16)
GEAR	-0.025	-1.039	-0.039	-1.156	-0.088	-0.234	-0.072	-0.253
	(0.46)	(3.94)***	(0.56)	(4.90)***	(2.59)***	(2.52)**	(1.94)*	(2.40)**
SIZE	0.130	7.486	0.478	5.134	-0.275	0.220	-0.046	1.066
	(0.11)	(1.44)	(0.28)	(0.78)	(0.43)	(0.13)	(0.07)	(0.58)
GROWTH	-2.248	-16.116	-1.189	8.999	2.098	7.969	1.385	7.188
	(0.50)	(0.72)	(0.21)	(0.50)	(1.88)	(2.70)***	(1.25)	(2.22)**
AGE	0.237	0.186	0.238	0.051	0.050	-0.275	0.082	-0.249
	(2.07)**	(0.36)	(1.27)	(0.07)	(0.60)	(1.12)	(0.88)	(0.98)
Observations	65	65	42	42	193	193	154	154
Group[a]	23	23	21	21	39	39	39	39
R^2 (Overall)	0.420	0.420	0.425	0.635	0.103	0.139	0.104	0.115

Notes: The pre 2003 and post 2003 dependent variables are the return on assets (ROA) and return on equity (ROE). *CEODUAL* is the CEO duality, *BODSIZE1* is the board size, *PNEDs1* is the proportion of non-executive directors, *AUCOM1* represents the existence of audit committee, *RECOM1* represents the existence of remuneration committee, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

9.3.2 Findings from the lagged *GCGI*-performance (ROA and ROE) relationship estimation

Table 9-4 reports the findings based on a lagged *GCGI*-performance (ROA and ROE) relationship estimation during the whole period. To facilitate comparison, and as proposed by Larcker and Rusticus (2010), models 1 and 2 of Table 9-4 repeat the findings based on the un-lagged *GCGI*-performance relationship reported in model 1 of Tables 8-4 and 8-6 in chapter eight, while models 3 and 4 of Table 9-4 contain findings based on a lagged *GCGI*-performance relationship. Interestingly, and as can be seen from Table 9-4 below, the coefficient on the *GCGI* under both ROA and ROE remain positive, but whereas the coefficient under ROA remains statistically insignificant, the ROE experienced statistical significance at 5% level. However, the magnitude of the coefficient on the *GCGI* under both ROA and ROE increased from 0.042 and 0.310 respectively in models 1 and 2 to 0.095 and 0.578 in models 3 and 4 of Table 9-4. Also, the statistical significance at 5% level of the coefficient under ROE could be explained by a time-lag in the governance-performance relationship (Vefeas, 1999a, Haniffa and Hudaib, 2006).

Fundamentally, the findings based on a lagged *GCGI*-performance relationship estimation are effectively the same under ROA relative to the un-lagged estimation during the whole period. This evidence supports the earlier conclusion in chapter eight that there is a positive but insignificant relationship between the *GCGI* and ROA during the whole period. However, a lagged *GCGI*-performance relationship estimation under ROE experienced a number of changes in the magnitude and statistically significant levels during the whole period. These findings suggest that the *GCGI*-performance relationship estimation reported in chapter eight under ROA is robust whether un-lagged or lagged estimated relative to the level of sensitivity under ROE. The level of sensitivity under ROE, and as has been noted earlier, suggests that there is certainly governance-performance time-lag for the sensitive corporate governance measured by the *GCGI*, evidence not supported by the conclusion on the *GCGI*-ROE relationship that there is

positive and insignificant association between the two reported in chapter eight.

Table 9-4: Panel data fixed-effects regressions of the lagged *GCGI* and accounting-based performance measures (ROA & ROE)

	Un-lagged estimation		Lagged estimation	
	Model 1	**Model 2**	**Model 3**	**Model 4**
	ROA	**ROE**	**ROA**	**ROE**
Intercept	29.068	79.098	38.806	82.509
	(3.25)***	(2.57)**	(3.92)***	(2.47)**
GCGI	0.042	0.310	0.095	0.578
	(0.51)	(1.08)	(1.14)	(2.06)**
GEAR	-0.084	-0.606	-0.068	-0.606
	(2.70)***	(5.67)***	(2.15)**	(5.66)***
SIZE	-0.526	2.386	-0.105	1.053
	(0.71)	(0.94)	(0.15)	(0.44)
GROWTH	1.289	4.447	0.602	4.659
	(1.08)	(1.09)	(0.53)	(1.22)
AGE	0.840	-2.479	1.117	-2.846
	(2.90)***	(2.49)**	(3.38)***	(2.55)**
Observations	283	283	244	244
Group[a]	39	39	39	39
R^2 (Overall)	0.010	0.012	0.015	0.014

Notes: The dependent variables are the return on assets (ROA) and return on equity (ROE). *GCGI* is the Ghanaian corporate governance index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
**Significant at 5% level

As indicated in chapter eight, the findings based on the lagged *GCGI* and the accounting-based firm performance during the whole period show that ROA is indeed robust whereas ROE is sensitive to the *GCGI* of which the relationship between the two is statistically significant. However, the findings do not completely reveal the contribution of each of the six sub-indices with a lagged estimation. Table 9-5 reports the results based on the lagged sub-indices and the accounting-based firm performance measures of ROA and ROE during the whole period. To facilitate comparison, and as proposed by Larcker and Rusticus (2010), models 1 to 4 of Table 9-5 repeat the results based on un-lagged sub-indices and performance relationship reported in models 1 and 2 of Tables 8-5 and 8-7 of chapter eight, while models 5 to 8 of Table 9-5 present the lagged sub-indices and performance relationship under ROA and ROE.

As can be seen from Table 9-5 below, five main cases of sensitivity in a lagged sub-indices and performance relationship can be recognised. First, the significant levels of the board composition index under both ROA and ROE in models 1 to 4 have changed to statistically significant in the case of ROA, with ROE experiencing statistically insignificant in models 5 to 8. In particular, the coefficients on board composition index under ROA in models 1 and 2 which were statistical insignificance have now changed to statistically significant in models 5 and 6 at 5% and 10% significant levels respectively. On the contrary, the coefficients on board composition index under ROE in models 3 and 4 which were statistically significant at 10% level have now changed to statistically insignificant in models 7 and 8 of Table 9-5.

Second, and as can be seen from Table 9-5 below, the statistical insignificance of the coefficient on remuneration committee index under ROE in model 3 has now changed to statistically significant at 10% level in model 7. Third, the statistical insignificance of the coefficients on shareholder rights index under both ROA and ROE in models 1 and 3 have now changed to statistically significant at 10% level in models 5 and 7. Fourth, the financial affairs and auditing index although remained negative under ROA, the significant level has now changed from 5% in model 1 to 1% in model 5 respectively. Finally, the statistical insignificance of the coefficient on disclosure index under ROA in model 1 has now changed to statistically significant at 10% in model 5. Arguably, and during the whole period, the findings of the relationship between the lagged sub-indices and the accounting-based firm performance measures suggest some level of sensitivity, hence the existence of time-lag for some of the sub-indices. Basically, only the audit committee index is robust under ROA and ROE whether un-lagged or lagged estimated.

Table 9-5: Panel data fixed-effects regressions of the lagged sub-indices and accounting-based performance measures (ROA & ROE)

	Un-lagged estimation				Lagged estimation			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	ROA	ROA	ROE	ROE	ROA	ROA	ROE	ROE
Intercept	14.580	11.533	22.104	17.582	13.226	8.814	4.139	-9.042
	(1.85)*	(1.51)	(0.86)	(0.71)	(1.61)	(1.08)	(0.16)	(0.36)
BOARDINDEX	0.085	0.071	0.344	0.347	0.130	0.114	0.148	0.191
	(1.42)	(1.19)	(1.81)*	(1.82)*	(2.01)**	(1.76)*	(0.77)	(0.98)
AUCOMINDEX	-	-0.008	-	0.025	-	-0.018	-	0.035
	-	(0.45)	-	(0.40)	-	(0.94)	-	(0.57)
RECOMINDEX	0.010	-	0.125	-	0.013	-	0.189	-
	(0.30)	-	(1.21)	-	(0.39)	-	(1.81)*	-
SHOLDINDEX	0.010	-0.027	0.124	0.246	0.129	-0.058	0.444	0.265
	(0.13)	(0.38)	(0.49)	(1.04)	(1.66)*	(0.79)	(1.77)*	(1.12)
FAAINDEX	-0.157	-	-0.120	-	-0.261	-	-0.388	-
	(1.99)**	-	(0.45)	-	(3.33)***	-	(1.49)	-
DISCINDEX	-0.087	-	-0.063	-	-0.123	-	-0.070	-
	(1.30)	-	(0.28)	-	(1.83)*	-	(0.31)	-
GEAR	-0.080	-0.088	-0.522	-0.535	-0.056	-0.069	-0.470	-0.493
	(2.76)***	(3.09)***	(5.32)***	(5.57)***	(1.86)*	(2.30)**	(4.72)***	(5.02)***
SIZE	-0.169	-0.145	2.418	2.362	-0.144	-0.036	1.730	1.665
	(0.27)	(0.23)	(1.19)	(1.15)	(0.23)	(0.06)	(0.87)	(0.83)
GROWTH	2.255	2.274	6.789	7.125	1.721	1.916	7.025	8.469
	(1.91)*	(1.93)*	(1.64)	(1.75)*	(1.54)	(1.67)*	(1.81)*	(2.18)**
AGE	0.078	0.059	-0.228	-0.226	0.092	0.057	-0.204	-0.214
	(1.00)	(0.76)	(0.99)	(0.95)	(1.00)	(0.62)	(0.85)	(0.87)
Observations	283	283	283	283	244	244	244	244
Group[a]	39	39	39	39	39	39	39	39
R^2 (Overall)	0.057	0.042	0.12	0.097	0.081	0.052	0.153	0.131

Notes: The dependent variables are the return on assets (ROA) and return on equity (ROE). *BOARDINDEX* is the board composition index, *AUCOMINDEX* is the audit committee index, *RECOMINDEX* is the remuneration committee index, *SHOLDINDEX* is the shareholder rights index, *FAAINDEX* is the financial affairs and auditing index, *DISCINDEX* is the disclosure index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

Table 9-6 presents the findings based on pre 2003 and post 2003 lagged *GCGI*-performance relationship. To facilitate comparison, and as proposed by Larcker and Rusticus (2010), models 1 and 2 of Table 9-6 repeat the pre 2003 findings based on un-lagged *GCGI*-performance relationship reported in model 1 of Tables 8-13 and 8-15 of chapter eight, while models 3 and 4 of Table 9-6 contain the pre 2003 results based on a lagged *GCGI*-performance relationship. Equally, models 5 and 6 of Table 9-6 repeat the results based on post 2003 un-lagged *GCGI*-performance reported in model 4 of Tables 8-13 and 8-15 of chapter eight, while models 7 and 8 of Table 9-6 reports the post 2003 results based on a lagged *GCGI*-performance relationship. As can be seen from Table 9-6 below, the pre 2003 un-lagged *GCGI* which was positive and statistically significant at 1% under both ROA and ROE in models 1 and 2 has remained positive but statistically insignificant in models 3 and 4 based on a lagged estimation.

In respect of the post 2003, and as can be seen from models 5 and 7 of Table 9-6 below, the lagged *GCGI* under ROA although not statistically significant experienced sign reversal from negative to a positive relationship between the two. In contrast, the lagged *GCGI* under ROE in model 8 of Table 9-6 although statistically insignificant remains positive between the two. Arguably, the magnitude of the coefficient on the post 2003 lagged *GCGI* under ROE has experienced significant increase from 0.086 (model 6) to 0.463 (model 8). These findings suggest that a lagged *GCGI* is sensitive under both ROA and ROE based on pre 2003 and post 2003, evidence not supported by an un-lagged *GCGI*-performance relationship reported in chapter eight. Fundamentally, the differences in findings based on the pre 2003 and post 2003 *GCGI* un-lagged and lagged estimations may be explained by the differences in the number of observation between pre 2003 (42) and post 2003 (154) lagged estimation. As explained earlier, these differences may indicate that there is in fact a governance-performance time-lag for the sensitive *GCGI*.

Table 9-6: Panel-data fixed-effects regressions of the pre 2003 and post 2003 lagged *GCGI* and accounting-based performance measures (ROA & ROE)

	Pre 2003 Un-lagged estimation		Pre 2003 lagged estimation		Post 2003 Un-lagged estimation		Post 2003 Lagged estimation	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	ROA	ROE	ROA	ROE	ROA	ROE	ROA	ROE
Intercept	-24.657	-94.271	157.144	454.147	9.960	32.840	21.636	81.665
	(2.39)**	(2.14)**	(0.75)	(0.63)	(1.40)	(1.64)	(1.44)	(1.86)*
GCGI	0.365	1.351	0.627	2.035	-0.065	0.086	0.055	0.463
	(3.97)***	(3.30)***	(0.95)	(0.90)	(0.90)	(0.42)	(0.52)	(1.51)
GEAR	-0.058	-0.903	-0.063	-1.471	-0.088	-0.251	-0.051	-0.263
	(1.18)	(3.74)***	(0.65)	(4.43)***	(2.64)***	(2.72)***	(1.11)	(1.96)*
SIZE	0.872	8.449	2.823	3.895	-0.003	0.873	-0.079	-0.157
	(0.72)	(1.66)*	(0.06)	(0.02)	(0.01)	(0.53)	(0.11)	(0.07)
GROWTH	-0.417	-26.538	-3.241	-9.728	1.947	7.560	0.619	5.101
	(0.10)	(1.23)	(0.42)	(0.37)	(1.77)*	(2.57)**	(0.56)	(1.57)
AGE	0.299	0.612	-5.791	-15.527	0.042	-0.334	-0.602	-2.803
	(2.59)***	(1.25)	(0.97)	(0.76)	(0.50)	(1.31)	(1.36)	(2.18)**
Observations	65	65	42	42	193	193	154	154
Group[a]	23	23	21	21	39	39	39	39
R^2 (Overall)	0.361	0.322	0.048	0.003	0.068	0.057	0.007	0.012

Notes: The pre 2003 and post 2003 dependent variables are the return on assets (ROA) and return on equity (ROE). *GCGI* is the Ghanaian corporate governance index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

As explained earlier, the findings based on the pre 2003 and post 2003 lagged *GCGI* and ROA show that the lagged *GCGI* is indeed sensitive to ROA. Nevertheless, the findings do not completely reveal the impact of each of the six sub-indices within the lagged model. Table 9-7 reports the findings based on pre 2003 and post 2003 lagged sub-indices and ROA relationship. To facilitate comparison, and as proposed by Larcker and Rusticus (2010), models 1 and 2 of Table 9-7 repeat the pre 2003 findings based on un-lagged sub-indices and ROA relationship reported in models 1 and 2 of Table 8-14 of chapter eight, while models 3 and 4 of Table 9-7 contain the pre 2003 results based on a lagged sub-indices and ROA relationship. Similarly, models 5 and 6 of Table 9-7 repeat the results based on post 2003 un-lagged sub-indices and ROA relationship reported in models 3 and 4 of Tables 8-14 of chapter eight, while models 7 and 8 of Table 9-7 reports the post 2003 results based on a lagged sub-indices and ROA relationship.

As can be seen from models 1 to 4 of Table 9-7 below, the pre 2003 lagged sub-indices have slightly changed in both the magnitude of the coefficients and significance levels compared with the un-lagged estimation. For example, the audit committee index in model 4 statistically significant level remains unchanged at 1% whether un-lagged or lagged estimated, but the magnitude of the coefficient has increased from 0.131 in model 2 to 0.175 in model 4 respectively. In contrast, a lagged remuneration committee statistically significant level has decreased from 1% in model 1 to 5% level in model 3. Although statistically insignificant, the lagged board composition, shareholder rights, financial affairs and auditing and disclosure indices during the pre 2003 period still remain statistically insignificant but the magnitude of the coefficients of each sub-index has slightly changed. This suggests that the pre 2003 sub-indices appear to be less sensitive to time-lag under ROA, suggesting that the results based on the pre 2003 lagged sub-indices lend support to the previous evidence reported in chapter eight.

Table 9-7: Panel-data fixed-effects regressions of the pre 2003 and post 2003 lagged sub-indices and return on assets (ROA)

	Pre 2003 Un-lagged estimation		Pre 2003 lagged estimation		Post 2003 Un-lagged estimation		Post 2003 Lagged estimation	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	ROA		ROA		ROA		ROA	
Intercept	-15.131	-10.449	-22.778	-18.848	6.843	9.404	-5.719	-4.594
	(1.04)	(0.84)	(1.11)	(1.22)	(0.68)	(1.09)	(0.52)	(0.49)
BOARDINDEX	0.022	0.034	0.008	0.032	-0.007	-0.012	-0.094	-0.092
	(0.21)	(0.33)	(0.06)	(0.26)	(0.10)	(0.19)	(1.34)	(1.33)
AUCOMINDEX	-	0.131	-	0.175	-	-0.017	-	-0.006
	-	(3.24)***	-	(2.97)***	-	(0.74)	-	(0.23)
RECOMINDEX	0.186	-	0.234	-	-0.028	-	-0.010	-
	(2.74)***	-	(2.28)**	-	(0.78)	-	(0.25)	-
SHOLDINDEX	0.023	0.052	0.115	0.053	0.025	0.025	0.155	0.150
	(0.18)	(0.37)	(0.51)	(0.25)	(0.29)	(0.30)	(1.66)*	(1.68)*
FAAINDEX	0.135	-	0.017	-	0.020	-	0.069	-
	(0.73)	-	(0.06)	-	(0.20)	-	(0.68)	-
DISCINDEX	0.255	-	0.144	-	-0.002	-	0.081	-
	(1.57)	-	(0.56)	-	(0.02)	-	(1.04)	-
GEAR	-0.065	-0.055	-0.058	-0.043	-0.091	-0.089	-0.050	-0.054
	(1.30)	(1.05)	(0.81)	(0.60)	(2.65)***	(2.64)***	(1.32)	(1.47)
SIZE	1.058	1.333	0.569	1.448	-0.068	-0.056	-0.140	-0.077
	(0.75)	(0.96)	(0.31)	(0.80)	(0.11)	(0.09)	(0.22)	(0.12)
GROWTH	-2.846	-0.336	-0.550	-1.774	2.118	2.034	1.244	1.198
	(0.69)	(0.08)	(0.10)	(0.34)	(1.86)*	(1.82)*	(1.13)	(1.09)
AGE	0.261	0.346	0.220	0.378	0.055	0.045	0.102	0.096
	(2.10)**	(2.73)***	(1.23)	(2.33)**	(0.68)	(0.54)	(1.09)	(1.02)
Observations	65	65	42	42	193	193	154	154
Group[a]	23	23	21	21	39	39	39	39
R^2 (Overall)	0.435	0.339	0.453	0.411	0.072	0.066	0.091	0.098

Notes: The pre 2003 and post 2003 dependent variable is the return on assets (ROA). *BOARDINDEX* is the board composition index, *AUCOMINDEX* is the audit committee index, *RECOMINDEX* is the remuneration committee index, *SHOLDINDEX* is the shareholder rights index, *FAAINDEX* is the financial affairs and auditing index, *DISCINDEX* is the disclosure index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.

[a] Unbalanced panel

*** Significant at 1% level

** Significant at 5% level

* Significant at 10% level

Interestingly, the post 2003 lagged sub-indices have remained the same except for some limited changes compared with un-lagged estimation. Specifically, the positive and statistically insignificant post 2003 lagged shareholder rights index has now changed to statistically significant at 10% level under ROA. By contrast, the post 2003 lagged disclosure index although not statistically significant in models 5 and 6 has now changed from negative to positive but statistically insignificant in models 7 and 8. Similar to pre 2003, a lagged board composition, audit committee, remuneration committee and financial affairs and auditing indices during post 2003 still remain statistically insignificant but the magnitude of the coefficients have slightly changed. Arguably, a majority of the lagged sub-indices during the pre 2003 and post 2003 period are robust to the time-lag although there are differences in the number of observations between both periods. Comparatively, the results based on the lagged sub-indices reinforce a majority of the pre 2003 and post 2003 findings reported in chapter eight under ROA.

With regard to the six sub-indices under ROE, Table 9-8 reports the findings based on pre 2003 and post 2003 lagged sub-indices and ROE relationship. To facilitate comparison, and as proposed by Larcker and Rusticus (2010), models 1 and 2 of Table 9-8 repeat the pre 2003 findings based on un-lagged sub-indices and ROE relationship reported in models 1 and 2 of Table 8-16 of chapter eight, while models 3 and 4 of Table 9-8 contain the pre 2003 results based on a lagged sub-indices and ROE relationship. Equally, models 5 and 6 of Table 9-8 repeat the results based on post 2003 un-lagged sub-indices and ROE relationship reported in models 3 and 4 of Tables 8-16 of chapter eight, while models 7 and 8 of Table 9-8 reports the post 2003 results based on a lagged sub-indices and ROE relationship.

As has been indicated in Table 9-8 below, the pre 2003 lagged board composition index statistically significant level has now improved from 10% in model 1 to 5% in model 3. In contrast, the lagged audit committee and

shareholder rights indices statistically significant levels have decreased from 1% and 10% respectively in model 2 to 5% and statistically insignificant in model 4 of Table 9-8 during pre 2003 period. Surprisingly, the pre 2003 lagged remuneration committee, financial affairs and auditing and disclosure indices are robust under ROE, suggesting that these sub-indices statistically significant or insignificant levels remain unchanged other than the magnitude of coefficients that experienced slight changes. In respect of post 2003, a limited lagged sub-indices such as audit committee and shareholder rights experienced significant changes. Whereas a lagged audit committee index experienced sign reversal from statistically insignificant negative association with ROE in model 6 to positive and statistically insignificant in model 8, the shareholder rights remained positive but statistically significant at 10% level in model 7 of Table 9-8.

Interestingly, and as shown in Table 9-8 below, the lagged board composition, remuneration committee, financial affairs and auditing and disclosure indices have experienced some slight changes in the magnitude of the coefficients of these sub-indices but still remained statistically insignificant whether un-lagged or lagged estimated. Overall, and as in the case of ROA, a majority of the lagged sub-indices during the pre 2003 and post 2003 period are robust to the time-lag although there are slight changes in the magnitude of coefficients of the sub-indices under ROE. It may also be highlighted that the results based on the lagged sub-indices strengthen a majority of the pre 2003 and post 2003 findings reported in chapter eight under ROE.

Table 9-8: Panel-data fixed-effects regressions of the pre 2003 and post 2003 lagged sub-indices and return on assets (ROE)

	Pre 2003 Un-lagged estimation		Pre 2003 lagged estimation		Post 2003 Un-lagged estimation		Post 2003 Lagged estimation	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	ROE		ROE		ROE		ROE	
Intercept	-33.512	-60.471	-31.356	-117.502	10.739	24.185	-24.112	-21.444
	(0.56)	(1.22)	(0.41)	(1.67)	(0.39)	(1.01)	(0.78)	(0.80)
BOARDINDEX	0.811	0.849	1.210	1.142	0.272	0.212	0.097	0.064
	(1.92)*	(2.02)**	(2.56)**	(2.05)**	(1.57)	(1.19)	(0.51)	(0.33)
AUCOMINDEX	-	0.531	-	0.624	-	-0.030	-	0.030
	-	(3.01)***	-	(2.47)**	-	(0.47)	-	(0.43)
RECOMINDEX	1.035	-	1.611	-	-0.088	-	-0.001	-
	(3.59)***	-	(4.27)***	-	(0.90)	-	(0.01)	-
SHOLDINDEX	0.836	1.112	0.111	0.478	0.086	0.133	0.459	0.414
	(1.40)	(1.79)*	(0.14)	(0.52)	(0.36)	(0.59)	(1.74)*	(1.62)
FAAINDEX	-0.020	-	-0.402	-	0.151	-	-0.038	-
	(0.02)	-	(0.37)	-	(0.55)	-	(0.13)	-
DISCINDEX	0.202	-	1.345	-	-0.101	-	0.019	-
	(0.27)	-	(1.43)	-	(0.50)	-	(0.09)	-
GEAR	-1.092	-1.029	-1.172	-1.184	-0.260	-0.263	-0.209	-0.224
	(4.63)***	(4.23)***	(4.58)***	(4.17)***	(2.79)***	(2.85)***	(1.94)*	(2.11)**
SIZE	11.262	15.566	5.148	13.689	1.111	0.972	1.746	1.646
	(2.00)**	(2.75)***	(0.76)	(1.72)*	(0.66)	(0.58)	(0.95)	(0.90)
GROWTH	-7.911	-25.347	-9.908	-5.615	7.900	7.543	6.837	6.566
	(0.37)	(1.20)	(0.51)	(0.30)	(2.55)**	(2.51)**	(2.03)**	(2.01)**
AGE	0.206	0.862	0.016	0.925	-0.283	-0.310	-0.227	-0.227
	(0.42)	(1.69)*	(0.02)	(1.27)	(1.28)	(1.28)	(0.98)	(0.92)
Observations	65	65	42	42	193	193	154	154
Group[a]	23	23	21	21	39	39	39	39
R^2 (Overall)	0.446	0.380	0.671	0.529	0.101	0.077	0.120	0.116

Notes: The pre 2003 and post 2003 dependent variable is the return on equity (ROE). *BOARDINDEX* is the board composition index, *AUCOMINDEX* is the audit committee index, *RECOMINDEX* is the remuneration committee index, *SHOLDINDEX* is the shareholder rights index, *FAAINDEX* is the financial affairs and auditing index, *DISCINDEX* is the disclosure index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.

[a] Unbalanced panel

*** Significant at 1% level

** Significant at 5% level

* Significant at 10% level

9.4 FINDINGS OF THE *GCGI* BASED ON PANEL INSRUMENTAL VARIABLE (IV) REGRESSIONS

This section presents the findings of the *GCGI* based on panel instrumental variable regressions to address the problems of endogeneity determined in table 9-1 of this chapter. As indicated in sub-subsection 5.5.3.3 of chapter five, and given that the *GCGI* is endogenously related to ROA and ROE, instrumental variable analysis is one response to address the problem (Zheka, 2006; Henry, 2008; Bozec *et al*, 2010) in this thesis. As discussed in sub-subsection 5.5.3.3 of chapter five, and following Padgett and Shabbir (2008), three instruments were initially identified in the first stage of the instrumental variable analysis to include board size (*BODSIZE1*)[41], director holdings (*DIRHOLD*)[42] and block holdings (*BLOCKHOLD*)[43] with a mean of 8.52, 8.58% and 72.62% respectively, to instrument the *GCGI* in the first stage.

The correlation matrix, as indicated in Table 9-9 below, shows that the correlation between the two instrumental variables (*BODSIZE1* and *DIRHOLD*) and the *GCGI* are statistically significant but with different signs. However, BLOCKHOLD appear not to be highly correlated with the *GCGI*, suggesting that the subsequent analysis in this chapter excludes this variable from examination because it has low correlation and has failed the orthogonality test. In particular, the *GCGI* is highly significant and positively correlated with the BODSIZE1, while the correlation between the *GCGI* and DIRHOLD is negative and statistically significant. This suggests that the BODSIZE1 and DIRHOLD can be valid instruments for the *GCGI*.

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[41] As indicated earlier, this is defined as an average board size of the Ghanaian listed firms. Prior index studies have noted that the board size has a positive influence on the level of compliance with corporate governance (Shabbir and Padgett, 2008; Ntim, 2009)

[42] Directors' holding is defined as the proportion of shares held by board of directors to the total shareholdings. Based on prior studies, directors holding are considered as a measure of the power of the directors over the board and therefore their ability to control its structure, composition and functioning (Shabbir and Padgett, 2008) which expected to affect compliance negatively.

[43] Researchers have defined block holdings as the proportion of shares held by substantial shareholders in excess of 5% of total shareholdings (Tsamenyi *et al*, 2007; Ntim, 2009). In this thesis, any shareholding in excess of 5% among Ghanaian listed firms is considered as block holding.

Table 9-9: Correlation matrix of the *GCGI* and instrumental variables

1	GCGI	BODSIZE1	BODOWN	BLOCKOWN
GCGI	1			
BODSIZE1	.399***	1		
DIRHOLD	-.129**	-.363***	1	
BLOCKHOLD	-.086	.262***	-.140**	1

Note: The table indicates Pearson's Correlation matrix of the Ghanaian Corporate Governance Index and the instrumental variables. *GCGI* is the Ghanaian Corporate governance index, *BODSIZE1* is the board size, *DIRHOLD* is the directors' holdings and *BLOCKHOLD* is block holdings. *** , ** and * denote correlation is significant at 1%, 5% and 10% level (two tailed).

Table 9-10 reports the instrumental variables fixed-effects regression results based on ROA and all the control variables during the whole, pre 2003 and post 2003 periods. Using the *GCGI* instrumented by BODSIZE1 and DIRHOLD, the coefficient during the whole period in model 1 of Table 9-10 remains statistically insignificant and positively related to ROA after addressing the endogeneity problems, but the magnitude of the regression coefficient increased from 0.042 as in model 1 of Table 8-4 of chapter eight to 0.480 in model 1 of Table 9-10 below. Although not statistically significant, this suggests that there has been an improvement using the instrumental variables fixed-effects regression model, relative to the results presented in Table 8-4 of chapter eight. This evidence is also consistent with the proposition of the *Durbin-Wu-Hausman* exogeneity test that the *GCGI* is indeed endogenously related to ROA.

However, the increase in the coefficient on the instrumented *GCGI* under ROA is not surprising because prior governance index-performance relationship studies (Zheka, 2006; Beiner *et al*, 2006; Henry, 2008) have noted that the instrumental variables over-predict, relative to un-instrumented coefficients. For example, Zheka (2006) experienced an increased coefficient from his initial estimate of 0.0049 to 0.0051 after instrumented the Ukraine corporate governance index (UCGI). That

notwithstanding, the findings based on un-instrumented *GCGI* comparative to instrumented *GCGI* suggest that the positive and statistically insignificant relationship between the *GCGI* and the accounting-based firm performance measure of ROA reported in chapter eight during the whole period is robust. Generally, the findings support the previous conclusion in chapter eight that corporate governance does not matter to firm performance measured by ROA in Ghana during the whole period.

Table 9-10: Instrumental variables fixed-effects regression results based on return on assets (ROA)

	The whole period Model 1	Pre 2003 Model 2	Post 2003 Model 3
Intercept	-22.616	-28.157	-23.240
	(1.20)	(1.90)*	(1.41)
GCGI	0.480	0.420	0.355
	(1.51)	(2.12)**	(1.70)*
GEAR	-0.147	-0.058	-0.103
	(3.21)***	(1.16)	(2.65)***
SIZE	-0.271	0.877	0.224
	(0.35)	(0.74)	(0.33)
GROWTH	3.025	0.462	1.181
	(2.07)**	(0.11)	(0.98)
AGE	0.010	0.308	0.079
	(0.11)	(2.65)***	(0.84)
Observations	283	65	193
Group[a]	39	23	39
R^2 (Overall)	0.020	0.362	0.017

Notes: The dependent variable is the return on assets (ROA). *GCGI* is the Ghanaian corporate governance index instrumented by BODSIZE1 (board size) and DIRHOLD (directors holdings), *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

Interestingly, and grouping the sample into pre 2003 and post 2003 periods, the instrumented *GCGI* in model 2 of Table 9-10 is found to remain statistically significant and positively related to ROA during the pre 2003 period. Although, and as expected, the magnitude of the coefficient of the *GCGI* has increased from 0.365 as in model 1 of Table 8-13 of chapter eight to 0.420 in model 2 of Table 9-10, the statistically significant level has decreased from 1% to 5% after addressing the endogeneity problems. This suggests that the *GCGI* is indeed exogenously related to ROA during pre 2003 period. Fundamentally, and unlike the whole period, the positive and

statistically significant relationship between the instrumented *GCGI* under ROA provides additional confidence to the earlier conclusion in chapter eight that corporate governance does matter more in Ghana during the pre 2003 period.

With regard to post 2003, and as can be seen from model 3 of Table 9-10 above, the instrumented *GCGI* is found to be statistically significant and positively related to ROA after addressing the problems of endogeneity, evidence not consistent with the previous results reported in model 4 of Table 8-13 of chapter eight where there is a negative and statistically insignificant association between the two. As expected, the magnitude of the *GCGI* coefficient has increased from -0.065 as in model 4 of Table 8-13 in chapter eight to 0.355 in model 3 of Table 9-10, its power is lower at 10% significant level. That notwithstanding, and after addressing the problems of endogeneity, the evidence suggests that corporate governance does matter to firm performance measured by ROA during post 2003 period. Overall, the differences in significant levels during pre 2003 (5%) and post 2003 (10%) under ROA has contributed to the statistically insignificant level during the whole period even though the *t-value* of the instrumented *GCGI* stood at 1.51 in model 1 of Table 9-10. This suggests that, and as indicated earlier, grouping the sample into pre 2003 and post 2003 introduction of the Ghanaian Code has provided better understanding of the governance-performance link among Ghanaian listed firms.

Table 9-11 presents the instrumental variables fixed-effects regression results based on ROE and all the control variables during the whole, pre 2003 and post 2003 periods. Unlike ROA, and as can be seen in model 1 of Table 9-11 below, the instrumented *GCGI* is found to be statistically significant and positively related to ROE during the whole period. In comparison with the initial fixed-effects regression during the whole period in model 1 of Table 8-6 of chapter eight, and as expected, the magnitude of the instrumented *GCGI* coefficient increased from 0.310 to 2.315 as in model 1 of Table 9-11.

However, its statistical power is lower at 10% level. That notwithstanding, addressing the problems of endogeneity have provided a larger coefficient, statistically significant and positive relationship between the two. This suggests that, and relative to model 1 of Table 8-6 of chapter eight, corporate governance does matter to firm performance measured by ROE during the whole period. However, the earlier conclusion reported in chapter eight of the insignificant relationship between the *GCGI* and ROE during the whole period is not supported.

Table 9-11: Instrumental variables fixed-effects regression results based on return on equity (ROE)

	The whole period Model 1	Pre 2003 Model 2	Post 2003 Model 3
Constant	-98.337	-175.638	-105.354
	(1.31)	(2.59)***	(2.00)**
GCGI	2.315	2.654	1.721
	(1.74)*	(2.98)***	(2.53)**
GEAR	-0.784	-0.903	-0.339
	(4.32)***	(3.46)***	(2.99)***
SIZE	-0.382	8.454	1.378
	(0.13)	(1.53)	(0.71)
GROWTH	10.443	-17.303	5.247
	(1.94)*	(0.72)	(1.57)
AGE	-0.645	0.782	-0.167
	(1.65)*	(1.44)	(0.54)
Observations	283	65	193
Group[a]	39	23	39
R^2 (Overall)	0.038	0.288	0.012

Notes: The dependent variable is the return on equity (ROE). *GCGI* is the Ghanaian corporate governance index instrumented by BODSIZE1 (board size) and DIRHOLD (directors holdings), *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

As in the case of ROA, the sample is grouped into pre 2003 and post 2003 sub-periods to establish if the previously reported results in model 1 of Table 8-15 of chapter eight are supported by the instrumented *GCGI*. As can be seen from model 2 of Table 9-11 above, the pre 2003 instrumented *GCGI* is found to remain statistically significant and positively related to ROE after addressing the problems of endogeneity, evidence consistent with the highly significant relationship reported in chapter eight during the pre 2003 period between the two. As expected, the magnitude of the coefficient has increased from 1.351 in model 1 of Table 8-15 in chapter eight to 2.654 in model 2 of

Table 9-11. However, and unlike ROA, the statistically significant level of the instrumented *GCGI* is still at 1% level as in the case of un-instrumented *GCGI* which gives more confidence in the results reported earlier in chapter eight. This also suggests that the earlier conclusion reported in chapter eight that corporate governance does matter to firm performance measured by ROE during pre 2003 is supported given the robustness of the *GCGI*-ROE relationship findings.

With respect to post 2003, and as can be seen from model 3 of Table 9-11 above, the instrumented *GCGI* is found to be statistically significant and positively related to ROE after addressing the problems of endogeneity. The findings are not in line with the earlier results reported in model 4 of Table 8-15 of chapter eight where there is a positive but statistically insignificant relationship between the two. As expected, the magnitude of the *GCGI* coefficient has increased from 0.086 in model 4 of Table 8-15 of chapter eight to 1.721 in model 3 of Table 9-11. However, and unlike ROA where the statistically significant level stood at 10%, the statistically significant level of the instrumented *GCGI*-ROE relationship is at 5%, suggesting that the *GCGI* is indeed endogenously related to ROE during the post 2003 period. Arguably, and as in the case of Renders *et al* (2010) who found a negative association between their overall index and ROE for their initial analysis but after controlling for the sample selection bias and endogeneity changed to positive and statistically significant, it is not surprising that the post 2003 *GCGI*-ROE relationship has changed from insignificant to statistically significant and positive association between the two after addressing the problems of endogeneity. This further confirms that causality runs from the *GCGI* to firm performance but not vice-versa.

It is important to note that one clear outcome that emerges from the first stage instrumental variables analysis under the accounting-based firm performance measures of ROA and ROE is that corporate governance does matter to firm performance in most cases during the whole, pre 2003 and

post 2003 periods after addressing the problems of endogeneity. However, the results do not make clear whether the introduction of the Ghanaian Code which has contributed to the improvement of compliance level causes firm financial performance. As indicated in sub-subsection 5.5.3.3 of chapter five, and following Henry (2008), a dummy variable representing the Ghanaian Code Change (*GCC*) is used to instrument the *GCGI* in the second stage to investigate whether the introduction of the Ghanaian Code has had any significant impact on the Ghanaian listed firms' financial performance. In this respect and as previously indicated, the dummy variable is coded 1 if sample firms financial year ends are on or after 31 December 2004 (post adoption of the Ghanaian Code) and 0 otherwise (pre adoption of the Ghanaian Code). This approach is used to further help to address the presence of endogeneity determined in Table 9-1 of this chapter.

As a result, and following Henry (2008), Table 9-12 reports a two-stage instrumental variable fixed effects regression model for the impact of the *GCGI* on the accounting-based firm performance measures of ROA and ROE. As can be seen from Panel A of Table 9-12, and similar to the reduced form fixed effects regression model results reported by Henry (2008), the coefficient on the *GCC* dummy variable is highly statistically significant and positively related to the *GCGI*, indicating that the *GCGI* is significantly higher after the introduction of the Ghanaian Code. This implies that the *GCC* dummy is a valid instrument for the *GCGI* under both ROA and ROE even though, and as can be seen from model 1 and 2 of Panel A, there are no major differences between the two regressions. Also, the evidence of highly statistically significant and positive *GCC-GCGI* association provides additional support to the earlier conclusion reported in section 6.6 of chapter six that the sampled firms were more compliant after the publication of the Ghanaian Code than when the code was not in place.

9-12: Instrumental variables fixed-effects regression results for the impact of the *GCGI* on accounting-based firm performance measures

Panel A: Reduced form (first stage) fixed-effects regression model

	Model 1 *GCGI*	Model 2 GCGI
Intercept	54.318	54.462
	(12.27)***	(12.33)***
GCC	14.058	14.074
	(12.29)***	(12.26)***
GEAR	0.052	0.052
	(2.15)**	(2.14)**
SIZE	0.748	0.734
	(1.39)	(1.36)
GROWTH	0.362	0.372
	(0.36)	(0.37)
AGE	-0.067	-0.069
	(0.84)	(0.87)
Observations	283	283
Group[a]	39	39
R^2 (Overall)	0.227	0.227

Panel B: Full (second stage) instrumental variables fixed-effects model

	Model 1 ROA	Model 2 ROE
Intercept	22.230	63.441
	(2.56)**	(3.01)***
GCGI	0.680	0.336
	(2.05)**	(3.39)***
GEAR	-0.486	-0.066
	(2.18)**	(4.72)***
SIZE	-3.262	0.801
	(1.47)	(1.21)
GROWTH	5.056	1.437
	(1.24)	(1.18)
AGE	0.261	-0.072
	(0.82)	(0.75)
Observations	283	283
Group[a]	39	39
R^2 (Overall)	0.081	0.131

Notes: The dependent variables are the return on assets (ROA) and return on equity (ROE). *GCGI* is the Ghanaian corporate governance index instrumented by the Ghanaian Code Change (GCC), *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

As can be seen from Panel B of Table 9-12 above, the full fixed effects regression results show that the *GCGI* is statistically significant and positively related to both ROA and ROE after addressing the problems of endogeneity. This result not only strengthens the importance of the Ghanaian Code under ROA and ROE but also suggests that better governed Ghanaian listed firms

tend to have higher firm performance measured by ROA and ROE relative to poorly governed firms. Arguably, and contrary to the earlier conclusion reported in chapter eight that not all the Ghanaian Code provisions included in the development of the *GCGI* are important to improving firm performance, the statistically significant and positive association between the instrumented *GCGI* and the accounting-based firm performance suggests that causality indeed runs from the *GCGI* to ROA and ROE but not vice versa.

9.5   SUMMARY OF RESULTS AND DISCUSSION

After subjected the initial results of chapter eight to a series of robustness checks, the lagged specific governance mechanisms-firm performance relationship provides mixed findings during the whole period after addressing the problems of endogeneity that may arise because of time-lag. In particular, the directions and the significant levels of a majority of the specific governance mechanisms considered under ROA and ROE remain un-changed. These results provide further support to the earlier conclusion reported in chapter eight that there is a statistically significant but in most cases weak association between each of the five specific governance mechanisms and the accounting-based firm performance measures of ROA and ROE during the whole period. However, the pre 2003 and post 2003 lagged specific governance mechanism-firm performance relationship has shown some sensitivity relative to the conclusion reported in chapter eight. For example, evidence of governance-performance association exists between board size and ROE during pre 2003 and between PNEDs and both ROA and ROE during post 2003.

Re-estimating the *GCGI* to address the problems of endogeneity that may arise because of time-lag during the whole period, the results based on the relationship between lagged *GCGI* and ROA remain unchanged, that there is statistically insignificant and positive association between the two. However,

the ROE shows some sensitivity to the lagged *GCGI* where evidence of statistically significant and positive association between the two is reported, suggesting that better governed Ghanaian listed firms tend to have higher ROE relative to poorly governed firms. This also suggests that the findings based on the lagged *GCGI*-ROE relationship does not lend support to the earlier conclusion reported in chapter eight that there is statistically insignificant and positive association between the two. Similarly, the results based on the lagged sub-indices during the whole period suggest some level of sensitivity to the time-lag under ROA and ROE except for the audit committee index which is robust whether un-lagged or lagged estimated but statistically insignificant.

One clear result that emerges from pre 2003 and post 2003 lagged *GCGI* is that the highly statistically significant and positive associations between the un-lagged *GCGI* and the accounting-based firm performance measures of ROA and ROE reported in chapter eight have now changed to insignificant association between them. This evidence contrasts sharply with previous conclusion reported in chapter eight during the pre 2003 period which may have been caused by the reduction of the sample size during pre 2003 from 65 to 42 observations after lagging the *GCGI* as one of the possible reasons. That notwithstanding, post 2003, although not statistically significant, experienced some sensitivity with lagged *GCGI* changing from a negative to positive sign under ROA. The lagged sub-indices under both ROA and ROE during the pre 2003 and post 2003 periods experienced slight changes, suggesting that the earlier conclusion reported in chapter eight is supported.

To further address the presence of endogeneity problems under the accounting-based firm performance measures of ROA and ROE, two instrumental variables strategies were implemented to re-estimate the relationship between the *GCGI* and firm performance. The findings based on the first stage instrumental variables fixed effects regressions suggest that corporate governance does matter to firm performance in most cases during

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the whole, pre 2003 and post 2003 periods. However, and except for pre 2003 under ROE where the relationship and significant level is consistent with previous results reported in chapter eight, the rest of the results differ in terms of sign reversal and significant levels relative to the earlier conclusion reported in chapter eight. These results are further confirmed in the second stage instrumental variables estimation where the robustness tests suggest that sample firms performed better after the introduction of the Ghanaian Code. Fundamentally, this thesis provides strong empirical support for the main argument that corporate governance does matter to firm performance holistically other than its specific governance mechanisms after controlling for endogeneity. Arguably, and as in the case of Henry (2008), the results are encouraging for the development of a code of best practice on corporate governance to regulate the operational environment of firms rather than the selective adoption of the specific governance mechanisms.

9.6   CHAPTER SUMMARY

This chapter has conducted endogeneity tests and a series of robustness checks to establish whether there is indeed stability in the findings presented in chapter eight. The main objective has been to examine the robustness of the reported findings to different explanations and estimations. In particular, the *GCGI* was found to be endogenously related to the accounting-based firm performance measures and therefore subjected it to a series of robustness checks. In this regard, lagged governance-performance relationships and panel instrumental variables regressions were used to address the problems of endogeneity. As in the case of chapter eight, and given that the sample size was reduced, the lagged governance-performance relationships during the whole, pre 2003 and post 2003 periods have provided mixed results of which in most cases show some sensitivity to the time-lag. That notwithstanding, the panel instrumental variable regressions during the whole, pre 2003 and post 2003 periods lend empirical support to the main

argument that corporate governance does matter to firm performance holistically rather than its specific governance mechanisms. In the next chapter, the directors' opinions on corporate governance and firm performance are reported.

CHAPTER TEN

DIRECTORS' OPINIONS ON CORPORATE GOVERNANCE AND FIRM PERFORMANCE: THE EMPIRICAL EVIDENCE

10.1 INTRODUCTION

This chapter discusses the findings based on the directors' opinions on corporate governance and firm performance. The key objective is to evaluate the perceptions of directors of the Ghanaian listed firms on the adoption of the Ghanaian Code and its benefit to firm performance. In particular, the chapter analyses the questionnaire data regarding corporate governance implementation issues and whether the adoption of the Ghanaian Code provisions is beneficial to firm performance or not. The remainder of the chapter is structured as follows. Section 10.2 briefly describes the sample and the questionnaire data. Section 10.3 presents the preliminary results and the differences in mean responses. Section 10.4 provides major results of the directors' opinions on corporate governance and firm performance. Section 10.5 presents a summary of the results and discussion, while section 10.6 summarises the chapter.

10.2 SAMPLE AND THE QUESTIONNAIRE DATA

Data considerations and the development of a questionnaire for the directors' opinions on corporate governance are discussed in section 5.6 of chapter five. This section briefly describes the sample and the questionnaire data used in the empirical analysis presented in this chapter. As indicated in section 5.6 of chapter five, this thesis employs a questionnaire (see Appendix 2 for details) as the data collection method to examine the directors' opinions on corporate governance and firm performance. The respondents were mainly executive and non-executive directors of the Ghanaian listed firms.

Therefore, 70 directors were selected from 35 firms listed on the Ghana Stock Exchange (GSE) as at the end of 31 December 2009. As explained in section 5.6 of chapter five, the main reasons for selecting respondents from firms listed on GSE are that they are required to comply with the Ghanaian Code or provide an explanation for non-compliance to their shareholders. In this case, the CEOs and the Chairmen of the 35 listed firms were selected to represent the executive and non-executive directors. As indicated in subsection 5.6.2 of chapter five, and following the work of CBI/Touche Ross (1995), Jenkins-Ferrett (2001), Moxey *et al* (2004) and Reed *et al* (2006), this thesis directly developed a questionnaire based on the Ghanaian Code provisions imposed on listed firms and piloted on the directors of three randomly selected listed firms. The questionnaire was posted and followed-up during the months of May 2011 to October 2011. As a result, and as indicated in subsection 5.6.3 of chapter five, 43 out of the 70 executive and non-executive directors responded to the survey, a response rate of 61.43%.

However, researchers have observed that postal questionnaires have the possibility of biased response rates (Fox and Boardley, 1998). In particular, non-response bias exists when non-responses influence the study results such that they become invalid. In order to minimize this problem, and as indicated earlier, a reminder letter was sent approximately six weeks after the initial postal questionnaire. The overall response rate of 61% suggests that the non-response rate is equal to 39%. If the opinions of the non-response directors differ significantly from those response directors, research analysis and findings might not be reliably valid. Following Wallace and Mellor (1988)[44], the non-response bias is investigated by comparing the early (28) and the late (15)[45] respondents to the questionnaire survey with the underlying belief that the late respondents are proxies to non-respondents. In this respect, this thesis checked the validity of the early respondents and

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[44] Wallace and Mellor (1988) developed a statistical method to investigate non-response bias by comparing responses provided by early respondents to those late respondents in an effort to establish whether there is significant difference between the two responses.
[45] The late respondents to the questionnaire survey in this thesis are the directors who completed the questionnaire after the reminder letter was sent to them by the researcher.

late respondents by using the t-test method to compare the mean-values of each variable in relation to the number of years in a particular role, the familiarity of the Ghanaian Code and its provisions, corporate governance implementation issues and corporate governance and firm performance in Ghana.

Table 10-1: Non-response bias tests

Variable	Mean Early Response	Mean Late Response	Statistically Significant
Number of years in role	1.57	1.20	0.181
Familiarity with the Ghanaian Code	1.71	1.87	0.327
Familiarity with the Ghanaian Code provisions	1.75	1.93	0.299
The Ghanaian Code is a benchmark for good corporate governance	4.18	4.33	0.435
The standard of corporate governance has improved since the Intro. of the Ghanaian code	3.57	3.40	0.617
Directors are prepared to complied with further corporate governance provisions	4.07	3.73	0.338
Regulatory and institutional bodies are supportive for the implementation of the Ghanaian Code	3.21	3.53	0.296
There is a need to review the Ghanaian Code by independent committee	4.29	4.13	0.564
Separating the roles of the CEO and the Chairman is beneficial to firm performance	4.61	4.47	0.613
To have a total number of board members ranging from 8 to 16 is beneficial to firm performance	2.57	2.33	0.375
A balance of executive and non-executive directors on the board is beneficial to firm performance	4.54	4.27	0.346
An establishment of audit committee is beneficial to firm performance	4.68	4.67	0.959
An establishment of a remuneration committee is beneficial to firm performance	4.61	4.47	0.572
The full adoption of the Ghanaian Code is beneficial to firm performance than the specific provisions	4.00	3.73	0.327
Respondents	28	15	

Notes: Data drawn from Questions 1 to 6

The results as indicated in column 4 of Table 10-1 above show that of all questions answered, the early respondents did not significantly differ from the same group in the late respondents because all values are not statistically significant[46]. Therefore, the non-response bias could be considered immaterial which suggests that the responses in this thesis can be considered as a representative of the whole selected sample.

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[46]The insignificant difference is also confirmed by Mann-Whitney U Test where the null hypothesis of no difference between early and late respondents is supported.

10.3 PRELIMINARY RESULTS AND THE DIFFERENCES IN MEAN RESPONSES

This section reports the preliminary results and the differences in mean responses from the directors of the Ghanaian listed firms. The responses to the questionnaire are presented in tables of which the respondents were asked to indicate their level of agreement with several statements on a scale of 1 to 5, where [1] represented strongly disagree, [2] disagree, [3] neutral, [4] agree and [5] strongly agree. Specifically, subsection 10.3.1 presents the preliminary results, while subsection 10.3.2 reports the differences in mean of the CEOs and Chairmen responses.

10.3.1   Preliminary results

Table 10-2 presents the respondents' role in Ghanaian listed firms. As shown in Table 10-2 below, the CEOs response rate (56%) is higher than the Chairman of the board (44%) by 12%. This is not surprising because executive directors and in this case the CEOs are permanently based in the listed firms head office to supervise the operational activities relative to the Chairman who by convention visit the office based on the frequency of board meetings and hence the differences in the response rate.

Table 10-2: Respondents role in the Ghanaian listed firms		
	Response Total	**Percentage Response**
Chairman	19	44.2%
CEO	24	55.8%
Total Respondents	43	100.0%

Note: Data drawn from Question 1

However, and as can be seen from Table 10-3 below, most of the respondents (65%) have been in their roles for less than 5 years with 26% and 9% being in their roles from 5 to 10 years and 11 years or more respectively. This suggests that only 9% of the directors who responded to

the survey questionnaire have been in their respective roles since the introduction of the Ghanaian Code in 2003 and therefore investigating the differences in responses based on the role of each director will provide better understanding of how the executive and non-executive directors perceived the implementation of the Ghanaian Code and its benefit to firm performance.

Table 10-3: Respondents experience in their roles		
	Response Total	**Percentage Response**
Less than 5 years	28	65.1%
5 - 10 years	11	25.6%
11 years or more	4	9.3%
Total Respondents	43	100.0%

Note: Data drawn from Question 2

Table 10-4 contains the respondents' familiarity with the existence of the Ghanaian Code and as indicated below, a majority of the respondents are aware of the existence of the Ghanaian Code. In particular, a little over 25% noted that they are very familiar with 72% of the respondents familiar with the existence of the Ghanaian Code. Interestingly, only one respondent representing 2% indicated not familiar with the existence of the Ghanaian Code. This evidence is particularly important since the respondents' familiarity with the existence of the Ghanaian Code may influence the level of their opinions on the implementation of the Ghanaian Code provisions and its benefit to firm performance.

Table 10-4: Respondents familiarity with the existence of the Ghanaian Code		
	Response Total	**Percentage Response**
Very Familiar	11	25.6%
Familiar	31	72.1%
Not Familiar	1	2.3%
Total	43	100%

Note: Data drawn from Question 3

As a follow-up question to test the respondents' familiarity with the specific Ghanaian Code provisions, and similar to the response rate to the earlier question, a little over 25% of the respondents in Table 10-5 confirmed that they are very familiar with the Ghanaian Code specific provisions. However, those familiar with the specific Ghanaian Code provisions dropped to a little over 67% relative to 72% who noted their familiarity with the existence of the Ghanaian Code. Interestingly, those not familiar with the specific Ghanaian provisions rather increased to 7% relative to the 2% reported earlier regarding the existence of the Ghanaian Code. This suggests that, although 5% of the respondents indicated their familiarity with the existence of the Ghanaian Code, they are not familiar with the specific provisions contained in the Ghanaian Code.

Table 10-5: Respondents familiarity with Ghanaian Code specific provisions		
	Response Total	**Percentage Response**
Very Familiar	11	25.6%
Familiar	29	67.4%
Not Familiar	3	7.0%
Total	43	100.0%

Note: Data drawn from Question 4

Table 10-6 reports the directors' opinions on corporate governance implementation issues in Ghana. In this respect, a majority of the

respondents noted that the Ghanaian Code is a benchmark for good corporate governance practices for Ghanaian listed firms. Specifically, and as can be seen from row 2 of Table 10-6, over 90% agreed or strongly agreed that the Ghanaian Code is a benchmark with only 9.3% who did not have an opinion. This is not surprising because the Ghanaian Code is meant to be adopted by all listed firms regulated by the GSE. However, and as shown in row 3 of Table 10-6, the respondents are divided on whether the standard of corporate governance has improved in their companies since the introduction of the Ghanaian Code. Whereas, a little over 51% agreed or strongly agreed that the standard of corporate governance has improved in their firms, 21% of the respondents' disagreed and 28% having no opinion. Although 90% of the respondents noted that the Ghanaian Code is a benchmark, it may be stated that some of the firms had good corporate governance structures in place before the introduction of the Ghanaian Code and therefore it did not make any difference.

Table 10-6: Directors opinions on corporate governance implementation issues

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses
The Ghanaian Code is a benchmark for good corporate governance	0 0.0%	0 0.0%	4 9.3%	25 58.1%	14 32.6%	43 100%
The standard of corporate governance has improved since the intro. of the Ghanaian Code	0 0.0%	9 20.9%	12 27.9%	13 30.2%	9 20.9%	43 100%
Directors are prepared to complied with further corporate governance provisions	1 2.3%	5 11.6%	5 11.6%	16 37.2%	16 37.2%	43 100%
The regulatory and institutional bodies are supportive for the implementation of the Ghanaian Code	0 0.0%	9 20.9%	16 37.2%	13 30.2%	5 11.6%	43 100%
There is a need to review the Ghanaian Code by independent committee	0 0.0%	1 2.3%	7 16.3%	16 37.2%	19 44.2%	43 100%

Note: Data drawn from Question 5a-e

As can be seen from row 4 of Table 10-6, many of the respondents are prepared to comply with further corporate governance requirements such as

the establishment of a formal nomination committee if they have not done so. In this respect, over 74% of the respondents agreed or strongly agreed while 14% disagreed or strongly disagreed with that statement. Interestingly, 12% of the respondents did not have an opinion regarding their preparedness to comply with further corporate governance provisions. Clearly, the failure of the Ghanaian Code to provide for the establishment of a nomination committee comparable to international best practices is confirmed by the respondents in their preparedness to comply with such provision.

That notwithstanding, and as indicated in row 5 of Table 10-6, the respondents are divided on whether the regulatory and institutional bodies are supportive for the implementation of the Ghanaian Code provisions. In particular, and for the first time, less than half of the respondents (42%) agreed or strongly agreed that the current regulatory and institutional bodies are supportive of the implementation of the Ghanaian Code relative to 58% of the respondents who did not have an opinion or disagreed with that statement. This suggests that the Ghanaian listed firms appear not to be receiving adequate support from those responsible for the introduction, enforcement and implementation of good corporate governance. As expected, over 81% strongly agreed or agreed that there is a need to review the Ghanaian Code by an independent committee, the findings supported by what is practised in the UK and South Africa. However, and as can be seen from row 6 of Table 10-6, a little over 16% did not have an opinion while 2% of the respondents disagreed with that statement. Arguably, the introduction of the Ghanaian Code has provided a consistent framework to which the Ghanaian firms are governed but the code needs to be reviewed in order to fully meet international best practices.

Table 10-7 presents the directors opinion on corporate governance and firm performance based on the specific governance mechanisms and the overall adoption of the Ghanaian Code. As row 2 of Table 10-7 shows, over 90% of

the respondents strongly agreed or agreed that the separation of the roles of CEO and the Chairman is beneficial to their firm's performance. As expected, a little over 2% and 7% respectively, did not have an opinion and disagreed with that statement. Fundamentally, and as indicated in chapter three, the Ghanaian corporate governance framework regards duality as detrimental because it could create power concentration in one person over board decisions. The insignificant responses of duality benefiting firm performance reported earlier suggest that combining the two roles is harmful to firm performance.

Interestingly, to have a total number of board members ranging from a minimum of eight to a maximum of sixteen members as provided by the Ghanaian Code is not supported by the respondents as beneficial to their firm performance. In particular, and as row 3 of Table 10-7 shows, approximately 70% of the respondents disagreed that the recommended board size is beneficial to firm performance with only 16% agreeing or strongly agreeing to that statement. Interestingly, 14% of the respondents did not have an opinion on that statement. Arguably, a minimum of eight and a maximum of sixteen board size recommended by the Ghanaian Code may be criticized because the two are all even numbers. If the listed firms complied with the board size of either eight or sixteen, and in the course of the board decision making the votes tied, it would be very difficult for the board to arrive at a decision. Fundamentally, and as reported earlier, there is a need to revise the Ghanaian code by an independent committee to include a provision on the establishment of a nomination committee which may help to recruit quality board members to strengthen the board decision making rather than focusing on numbers that may affect voting during board meetings.

As in row 4 of Table 10-7, the respondents also noted that to have a balance of executive and non-executive directors on the board with at least one-third to be independent non-executive directors as recommended by the Ghanaian Code is beneficial to their firm's performance. In particular, a little over 83%

of the respondents strongly agreed or agreed that having a balanced board is beneficial to their firm's performance. However, approximately 12% and 5% of the respondents did not have any opinion and disagreed with the statement. This indicates the importance of checks and balances as well as different expertise that non-executive directors provide in board decisions among the Ghanaian listed firms. In terms of board committees, and as indicated in Table 10-7 below, the respondents noted that the establishment of audit and remuneration committees as recommended by the Ghanaian Code is beneficial to firm performance. Specifically, and as one can see from row 5 of Table 10-7, over 90% respondents either strongly agreed or agreed that the establishment of an audit committee as recommended by the Ghanaian Code is beneficial to their firm performance relative to 7% and 2% who did not have an opinion and disagreed with that statement.

Table 10-7: Directors opinions on corporate governance and firm performance

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses
The separation of the roles of the CEO and the Chairman is beneficial to firm performance	0 0.0%	3 7.0%	1 2.3%	8 18.6%	31 72.1%	43 100%
To have a total number of board members ranging from 8 to 16 is beneficial to firm performance	0 0.0%	30 69.8%	6 14.0%	6 14.0%	1 2.3%	43 100%
To have a balance of executive and non-executive directors on the board is beneficial to firm performance	0 0.0%	2 4.7%	5 11.6%	8 18.6%	28 65.1%	43 100%
The establishment of an audit committee is beneficial to firm performance	0 0.0%	1 2.3%	3 7.0%	5 11.6%	34 79.1%	43 100%
The establishment of a remuneration committee is beneficial to firm performance	0 0.0%	1 2.3%	4 9.3%	8 18.6%	30 69.8%	43 100%
The full adoption of the Ghanaian Code is beneficial to firm performance than the specific provisions	0 0.0%	1 2.3%	14 32.6%	16 37.2%	12 27.9%	43 100%

Note: Data drawn from Question 6a-f

Similarly, and as noted in row 6 of Table 10-7, over 88% responded that they strongly agreed or agreed that the establishment of a remuneration committee as recommended by the Ghanaian Code is beneficial to their firm's performance compared to a little over 9% and 2% who did not have an opinion and disagreed with that statement. This evidence suggests that the introduction of the Ghanaian Code has increased the awareness of the important role played by board committees. Arguably, and as indicated earlier, an independent committee should be constituted by the regulatory authorities to strengthen the Ghanaian Code in order to bring it in line with the international best practices. For example, the recommendation for the establishment of a nomination committee is important to include in the Ghanaian Code provisions for firms to adopt which could enable them to recruit quality directors to serve on the boards of the Ghanaian listed firms.

The statement that the Ghanaian Code is only beneficial to firm performance if only fully adopted instead of its specific provisions is supported but not at the same rate as the specific governance provisions. Whereas 65% of the respondents strongly agreed or agreed that the full adoption of the Ghanaian Code is beneficial to their firm performance as shown in row 7 of Table 10-7, the specific governance provisions benefit to firm performance, except board size (16%), and as explained earlier, are rated much higher as in the case of CEO/Chairman role separation (90%), balance of executive and non-executives directors (83%), the presence of audit (90%) and remuneration (83%) committees. Surprisingly, approximately 37% did not have an opinion on the full adoption of the Ghanaian Code provisions benefit to firm performance and a little over 2% disagreed with that statement. These responses are interpreted as clear indication that not all corporate governance provisions contained in the Ghanaian code are equally important to company directors as beneficial to their firm's performance. As in Jenkins-Ferrett (2001), many directors supported the full adoption of the Ghanaian Code provisions as beneficial to their firm performance. This evidence also provides further support for the views shared by Metrick and Ishii (2002) and

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Klapper and Love (2004) that corporate governance matters more in countries with weak legal systems relative to countries with strong legal systems. This is particularly important because the evidence in this thesis does not lend empirical support to prior directors' opinions studies in the UK (CBI/Touch Ross, 1995; Moxey *et al*, 2004). For example, CBI/Touch Ross reported that the Cadbury recommendations have had no positive impact on their firm's performance, evidence not consistent with the African developing countries where legal systems are weak.

Although, the respondents in most cases either strongly disagreed, disagreed, neutral, agreed or strongly agreed with the statements regarding corporate governance implementation issues and its influence on firm performance, the preliminary results do not show the directors opinions at an aggregate level using the full 5-point scale of the responses indicated earlier to help make a definite conclusion of the directors opinions. However, and given the different roles of the respondents of being executive and non-executive directors, the next subsection reports the differences in mean of responses to establish whether the CEOs responses differ significantly from the Chairmen to determine whether it warrants separate analysis for the two respondents in section 10.4 or not.

10.3.2   Differences in mean of the CEOs and Chairmen responses

Table 10-8 presents the differences in mean of responses from the CEOs and Chairmen of the Ghanaian listed firms on corporate governance implementation issues. As indicated earlier, and on a scale of 1 to 5, the null hypothesis of no differences in mean of the CEOs and Chairmen responses is supported[47]. This suggests that the responses from both respondents can be combined for further analysis in supporting or otherwise of the hypotheses tested in chapter six. However, it can be observed from columns 2 and 3 of

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[47] The Mann-Whitney U Test was also used to confirm the significant levels of the differences in mean of the CEOs and the Chairmen responses.

Table 10-8 that the mean CEOs responses to all the five statements are consistently lower relative to the Chairmen responses except the support they receive from the current regulatory and institutional bodies for the implementation of the Ghanaian Code in row 5 where the CEOs recorded a mean of 3.46 higher than the 3.16 of the Chairmen responses. That notwithstanding, and given that there are no statistically significant differences in mean responses regarding corporate governance implementation issues, the responses from the CEOs and Chairmen of the Ghanaian listed firms will be aggregated into means and standard deviations in section 10.4 to support or otherwise of the hypotheses tested in chapter six.

Table 10-8: Differences in mean of corporate governance implementation issues

	Mean CEOs Responses	Mean Chairmen Responses	Statistically Significant
The Ghanaian Code is a benchmark for good corporate governance	4.21	4.26	0.774
The standard of corporate governance has improved since the intro. of the Ghanaian Code	3.42	3.63	0.514
Directors are prepared to complied with further corporate governance provisions	3.88	4.05	0.602
The regulatory and institutional bodies are supportive for the implementation of the Ghanaian Code	3.46	3.16	0.306
There is a need to review the Ghanaian Code by independent committee	4.17	4.32	0.556

Notes: The test statistics is based on the independent sample t-test with no statistically significant level at 5%. The Mann-Whitney U test was also used to confirm the significant level.

Table 10-9 reports the differences in mean of responses from the CEOs and Chairmen of the Ghanaian listed firms on corporate governance and firm performance. As indicated earlier, and based on the full scale of 1 to 5, the null hypothesis of no differences in mean of the CEOs and Chairmen of the Ghanaian listed firms' responses is supported for five statements except the board size influence on firm performance in row 3 of Table 10-9 where there

are statistically significant differences in mean at 5% level[48]. This suggests that, and based on the CEOs and Chairmen of the Ghanaian listed firms' responses, to have a total number of board members ranging from eight to sixteen has resulted in different opinions from the respondents. However, and given that the means of both respondents based on the full scale of 1 to 5 (i.e. CEOs mean = 2.71 and Chairmen mean = 2.21) suggest board size having no benefit to firm performance, this thesis in the next section will aggregate the responses from both respondents on corporate governance and firm performance for further analysis in section 10.4.

Table 10-9: Differences in mean of corporate governance and firm performance

	Mean CEOs Responses	Mean Chairmen Responses	Statistically Significant**
The separation of the roles of the CEO and the Chairman is beneficial to firm performance	4.50	4.63	0.622
To have a total number of board members ranging from 8 to 16 is beneficial to firm performance	2.71	2.21	0.049**
To have a balance of executive and non-executive directors on the board is beneficial to firm performance	4.46	4.42	0.892
The establishment of an audit committee is beneficial to firm performance	4.50	4.89	0.171
The establishment of a remuneration committee is beneficial to firm performance	4.46	4.68	0.343
The full adoption of the Ghanaian Code is beneficial to firm performance than the specific provisions	4.13	3.63	0.156

Notes: ** denotes 5% significant level base on independent sample t-test. The Mann-Whitney U test was also used to confirm the significant level.

As can be seen from columns 2 and 3 of Table 10-9 above, and unlike the differences in mean responses of corporate governance implementation issues discussed earlier where a majority of the CEOs responses means were lower than the Chairmen responses, the differences in mean of corporate

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[48] As in the case of corporate governance implementation issues, the differences in mean of the CEOs and Chairmen responses regarding corporate governance and firm performance are confirmed by the Mann-Whitney U Test with similar results.

governance and firm performance for all the six statements is divided into two. Whereas CEOs responses means are lower in three statements such as the separation of the roles of the CEO and the Chairman, establishment of audit committee and a remuneration committee, the Chairmen responses means are lower in the balance of executive and non-executive directors, to have a total number of board members ranging from eight to sixteen and the full adoption of the Ghanaian Code provisions benefit to firm performance. That notwithstanding, and as in the case of corporate governance implementation issues discussed earlier, the responses from both CEOs and the Chairmen of the Ghanaian listed firms will be combined for further analysis in section 10.4. Given that there is no statistically significant difference between the CEOs and Chairmen responses on a majority of the statements regarding corporate governance implementation issues and its benefit to firm performance, the next section provides major results to support or otherwise the conclusions reported in chapters six and eight.

10.4 MAJOR RESULTS OF THE DIRECTORS' OPINIONS ON CORPORATE GOVERNANCE AND FIRM PERFORMANCE

Following the preliminary results and the differences in mean responses, this section provides major results to support or otherwise the hypotheses tested in chapters six and eight. A five-point scale (1 = strongly disagree and 5 = strongly agree) was used in evaluating the responses for all the eleven statements in questions 5 and 6. The means and standard deviations reported in each table are calculated on the full 5-point scale of the responses. In addition, a one-sample test[49] with a test value of 3 representing no opinion on the 5-point scale was used to distinguish between the mean scores below and above 3 to help make a definite conclusion for each statement. If a mean scores below or above 3 is found to be statistically significant, then one can conclude that the majority of the respondents do

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[49] It is important to note here that non-parametric one-sample test was also performed where the results is similar to the statistically significant levels that are reported in Tables 10-10 and 10-11.

not support or do support a particular statement. In this respect, subsection 10.4.1 presents the directors' opinions on corporate governance implementation issues, while subsection 10.4.2 provides the directors' opinions on corporate governance and firm performance. In all cases, and unlike the preliminary results, the mean scores for all the statements based on the full scale of 1 to 5 will be used as a representative opinion for all the respondents to support or otherwise the hypotheses tested in chapters six and eight. For the purpose of clarity, the six hypotheses tested in chapters six and eight are reproduced here as follows:

Ho_1: *There is significant improvement in the degree of compliance with corporate governance practices by listed firms during pre 2003 and post 2003 introduction of the Ghanaian Code.*

H_{O2} *The separation of the roles of CEO and the Chairman should lead to higher firm performance.*

H_{O3} *The smaller the board size should lead to higher firm performance.*

H_{O4} *The higher the proportion of non-executive directors, the lower the firm performance.*

H_{O5} *The presence of an audit committee and a remuneration committee should lead to better firm performance.*

H_{O6} *There is a significant positive association between the Ghanaian corporate governance index (GCGI) and firm performance.*

The analysis and discussion of the major results in respect of the above hypotheses are presented in the subsequent subsections 10.4.1 and 10.4.2 respectively.

10.4.1 Directors opinions on corporate governance implementation issues

Table 10-10 presents the mean scores and the standard deviations of the directors' opinions on corporate governance implementation issues in Ghana. As indicated earlier, a five point scale (1 = strongly disagree and 5 =

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strongly agree) was used in evaluating the responses for all the five statements in question 5. Respondents strongly believe that the Ghanaian Code is a benchmark for good corporate governance practices for Ghanaian listed firms (mean scores = 4.23, minimum = 3, maximum = 5); and that the standard of corporate governance has improved in their firms since the introduction of the Ghanaian Code (mean scores = 3.51, minimum = 2, maximum = 5). This suggests that hypothesis one is supported and further provides consistent support to the earlier conclusion reported in chapter six that the sample firms were more compliant after the introduction of the Ghanaian Code. Empirically, this evidence also reinforces previous findings reported by Ocran (2001) that the concept of corporate governance has gained grounds in Ghana. However, and unlike the analysis of the degree of compliance with the Ghanaian Code based on the annual report data in chapter six where the issue of additional compliance could not be addressed, the respondents strongly believe that their firms are prepared to comply with further corporate governance requirements such as the establishment of a nomination committee if not complied with presently (mean scores = 3.95, minimum = 1, maximum = 5). This is particularly important, and as indicated earlier, including a requirement for the establishment of a nomination committee could help to bring the Ghanaian Code in line with international best practices such as what is practised in the UK and South Africa.

While the respondents believe that the current regulatory and institutional bodies are supportive enough to help implement the Ghanaian Code provisions (mean scores = 3.33, minimum= 2, maximum = 5), the mean score is at a lower level relative to other statements regarding corporate governance implementation issues. It would appear that the respondents see the regulatory and institutional bodies as policing the Ghanaian Code rather than educating them regarding the importance of corporate governance to their operations. As indicated in chapter six, and consistent with the respondents' weak support for the regulatory and institutional bodies, the

Ghanaian Code specific provisions that are not backed by the Companies Code, SECG regulation and the GSE Listing Rules experienced low compliance level, suggesting that the Ghanaian listed firms follow the box ticking exercise only to please their regulatory and institutional bodies. Given the respondents strong preparedness to comply with further corporate governance requirements noted earlier, and as expected, they strongly believe that there is a need to review the Ghanaian Code by an independent committee (mean scores = 4.23, minimum = 2, maximum = 5). Essentially, and as indicated in chapter three, the Ghanaian Code has not been reviewed since its introduction and reviewing it may help to bring it in line with what is practised around the world.

As can be seen from column 6 of Table 10-10 below, there is normal variation in the directors' opinions on corporate governance implementation issues. In particular, the standard deviations are relatively small with few of them around one-fifth the range, suggesting that the mean scores which are used for the analysis can indeed stand for the opinions of a majority of the respondents to the five statements. That notwithstanding, the responses to the statements in rows 3 and 4 of Table 10-10 are the ones to indicate greater variations among all the five statements but were not particularly large, either. In other words, most of the directors who responded provided clear support to all the five statements regarding corporate governance implementation issues in Ghana.

Table 10-10: Descriptive statistics of corporate governance implementation issues

	N	Minimum	Maximum	Mean	Std. Dev
The Ghanaian Code is a benchmark for good corporate governance	43	3	5	4.23***	.611
The standard of corporate governance has improved since the intro. of the Ghanaian Code	43	2	5	3.51***	1.055
Directors are prepared to complied with further corporate governance provisions	43	1	5	3.95***	1.090
The regulatory and institutional bodies are supportive for the implementation of the Ghanaian Code	43	2	5	3.33**	.944
There is a need to review the Ghanaian Code by independent committee	43	2	5	4.23***	.812

Note: A five-point scale (1 = strongly disagree and 5 = strongly agree). Data drawn from Question 5. *** and ** indicate statistically significant level at 1% and 5% based on one-sample test value of 3. The non-parametric one-sample test was also used to confirm the significant levels.

10.4.2   Directors opinions on corporate governance and firm performance

Table 10-11 reports the mean scores of the directors' opinions on corporate governance and firm performance in Ghana. As indicated earlier, a five point scale (1 = strongly disagree and 5 = strongly agree) was used in measuring the responses for all the five statements in question 6. Respondents believe strongly that the separation of the roles of the CEO and the Chairman is beneficial to their firm performance (mean scores = 4.56, minimum = 2, maximum = 5), suggesting that hypothesis two is supported. Empirically, this finding also provides clear support to the Ghanaian Code recommendation of the roles separation between the CEO and the Chairman. However, the result is not consistent with the conclusion reported in chapter eight regarding the roles separation and firm performance. In particular and based on the regression results from the annual report data, there is no evidence to suggest that roles separation is beneficial to any of the firm performance measures used (ROA, ROE and Q-ratio).

Fundamentally, the differences in findings between the directors' opinions on roles separation and the regression analysis from the annual report data in chapter eight may suggest that the directors see the implementation of roles separation as beneficial to their firm performance, but in practice, it appears that separating the two roles among Ghanaian listed firms does not have any positive impact on their profitability or market value. Arguably, separating the two roles alone may not necessarily guarantee firm performance unless other specific governance provisions are adopted simultaneously. For example, a firm may have its two roles separated but if they do not have the right board size who are not politically chosen in place for decision making may not have any positive impact on firm performance. This is because, and as one may argue, the strength of the board may depend on the strength of the individual members but not the size that matters for important decision making. That notwithstanding, there is clear indication that the directors who are responsible for the implementation of good corporate governance in their various firms appear to value roles separation in Ghana. In particular, and as can be seen from row 2 of Table 10-9, both executive (CEOs) and non-executive (Chairmen) directors equally have strong support for the separation of the two roles among Ghanaian listed firms.

As indicated in row 3 of Table 10-11, the respondents offered no support to have a total number of board members ranging from eight to sixteen as beneficial to their firm performance (mean scores = 2.49, minimum = 2, maximum = 5), suggesting that hypothesis three is not supported. This evidence is also consistent with the regression results from the annual report data when ROA is used as a firm performance measure. However, this evidence contradicts a majority of the regression results from the annual report data reported in chapter eight. Specifically, the average board size of 8.52 reported in section 6.5 of chapter six was found to have a statistically significant and positive impact on firm performance measures of ROE and Q-ratio. Arguably, the directors of the Ghanaian listed firms who are responsible for the implementation of the Ghanaian Code provisions do not

share the same view as the Ghanaian Code recommendation of having a board size of between eight and sixteen. In this respect, there may be something fundamentally wrong with the content of the Ghanaian Code, and as indicated earlier, it should be subjected to a review by an independent committee to take a remedial action.

As shown in row 4 of Table 10-11, the respondents believe strongly that to have a balance of executive and non-executive directors on the board with at least one-third to be independent non-executive directors is beneficial to their firm's performance (mean scores = 4.4, minimum = 2, maximum = 5). This evidence is not consistent with hypothesis four but lends empirical support to the Ghanaian Code recommendations of having a balance of executive and non-executive directors on the board. However, this evidence contrasts sharply with the conclusion reported in chapter eight regarding the PNEDs-performance relationship based on the regression results from the annual report data. Whereas the regression results from the annual report data reported in chapter eight (see Tables 8-1, 8-2 and 8-3) show a negative and statistically significant impact on all the firm performance measures (ROA, ROE and Q-ratio), the directors strongly perceived the balance of executive and non-executive directors as beneficial to their firm's performance. As indicated in section 6.7 of chapter six, and based on critical observation during the reading of the Ghanaian listed firms annual reports, a majority of the firms have only the CEO as an executive director to sit on the board, suggesting that the Ghanaian Code recommendation of having a balance of executive and non-executive directors on the board is defeated.

Table 10-11: Descriptive statistics of corporate governance and firm performance

	N	Minimum	Maximum	Mean	Std. Dev
The separation of the roles of the CEO and the Chairman is beneficial to firm performance	43	2	5	4.56***	.854
To have a total number of board members ranging from 8 to 16 is beneficial to firm performance	43	2	5	2.49***	.827
To have a balance of executive and non-executive directors on the board is beneficial to firm performance	43	2	5	4.44***	.881
The establishment of an audit committee is beneficial to firm performance	43	2	5	4.67***	.715
The establishment of a remuneration committee is beneficial to firm performance	43	2	5	4.56***	.765
The full adoption of the Ghanaian Code is beneficial to firm performance than the specific provisions	43	2	5	3.91***	.840

Note: A five-point scale (1 = strongly disagree and 5 = strongly agree). Data drawn from Question 6. *** indicates statistically significant level at 1% based on one-sample test value of 3. The non-parametric one-sample test was also used to confirm the significant levels.

As reported in section 6.5 of chapter six, and given that the Ghanaian listed firms' non-executive directors (76%) outweigh the executive directors (24%), it is not surprising that the regression results from the annual report data do not support the expectation of the Ghanaian Code of having a balance of executive and non-executive directors on the board. In this respect, one possible explanation for the differences in findings between the directors' opinions and the regression results may be that the directors view a balanced board as beneficial to firm performance, while in practice, the annual report data does show high PNEDs. Arguably, and given the recommendation of the Ghanaian Code, the directors' strong support for a balanced board may suggest that they do not practise what they perceive as being beneficial to their firm's performance; hence their boards are dominated by the non-executive directors.

As indicated in row 5 and 6 of Table 10-11 above, there is strong support for the establishment of an audit committee (mean scores= 4.67, minimum = 2, maximum = 5), as well as a remuneration committee (mean scores = 4.56,

minimum = 2, maximum = 5) as beneficial to firm performance, indicating that hypothesis five is supported. However, this evidence contradicts the earlier conclusion reported in chapter eight based on the regression results from the annual report data that audit and remuneration committees have no positive impact on firm performance measures of ROA, ROE and Q-ratio. In this case, the directors support the establishment of audit and remuneration committees as beneficial to their firm's performance, whereas in practice, these committees do not matter to firm's performance based on the regression results from the annual report data during the whole period. That notwithstanding, and as reported in chapter eight, those firms that had a remuneration committee in place before (pre 2003) the introduction of the Ghanaian Code experienced positive impact on their firm performance measured by ROA and ROE. Overall, and more importantly, the regression results from the annual report data remain unchanged after addressing the endogeneity problems in chapter nine.

In general, the degree of compliance based on the annual report data does not appear to benefit firm performance other than the period when the Ghanaian Code was not in place relative to the directors opinions where there is strong support for the establishment of these committees. This suggests that and as reported in chapter eight, having these committees in place alone in practice may not guarantee firm performance until the composition requirements of such committees are met. This is particularly important because the existence of these board committees without the right composition to perform the delegated functions of the board may not have any impact on firm performance. However, and given the directors strong support for the establishment of both audit and remuneration committees as beneficial to firm performance, the level of compliance based on the annual report data reported in chapter six may be seen more as a box ticking exercise to satisfy regulators and institutional bodies. For example, the Ghanaian Code audit committee provision supported by other regulators such as the SECG regulation and the GSE Listing Rules is highly complied with by

70% of the sampled firms, whereas a remuneration committee provision that is not backed by any of these regulators is least complied with at the rate of 28% of the same firms. This may have caused the differences in findings between the directors' opinions and the regression results from the annual report data reported in chapter eight because they appear not to put into practice what they think is important for their firm's performance as confirmed by the establishment of a remuneration committee low compliance level reported in chapter six.

According to row 7 of Table 10-11 above, the respondents have a strong belief that the full adoption of the Ghanaian Code is beneficial to their firm's performance rather than its specific provisions, suggesting that hypothesis six is supported (mean scores = 3.91, minimum = 2, maximum = 5). Given that the statement of the full adoption of the Ghanaian Code is equivalent to the Ghanaian corporate governance index (*GCGI*) developed in chapter six, this evidence contradicts the initial regression results from the annual report data reported in Tables 8-4, 8-6 and 8-8 of chapter eight using all the firm performance measures (ROA, ROE and Q-ratio) during the whole period. However, and after grouping the annual report data into sub-periods[50], the directors' opinions are consistent with the regressions results of the accounting-based firm performance measures (ROA and ROE) during the period (pre 2003) where there was no formal introduction of the Ghanaian Code. That notwithstanding, and after addressing the endogeneity problems in chapter nine, the directors view on the full adoption of the Ghanaian Code as beneficial to firm performance appears to be more consistent with the regression results of the accounting-based firm performance measured by ROA and ROE.

Fundamentally, there is some agreement between the directors' opinions on the full adoption of the Ghanaian Code and the regression results from the

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[50] As has been noted in previous chapters, the sub-periods are the pre 2003 and post 2003 publication of the Ghanaian Code provisions.

annual report data based on the *GCGI* that corporate governance does matter as a whole to the Ghanaian listed firms' profitability but not its specific governance provisions. This suggests that the earlier conclusion reported in chapter nine that corporate governance does matter to firm performance holistically instead of its specific governance provisions is supported by the directors opinions on corporate governance and firm performance. Although, a majority of the directors' opinions on the specific governance provisions benefit to firm performance are supported, they are not in line with the regression results from the annual report data reported in chapter eight, and the subsequent endogeneity and robustness checks in chapter nine. Generally, and as indicated in column 6 of Table 10-11 above, there is normal variation in the directors' opinions on corporate governance and firm performance because the standard deviations are relatively small for all the six statements. This suggests that the mean scores which are used for the analysis can indeed represent the opinions of a majority of the directors regarding the adoption of corporate governance provisions and firm performance in Ghana.

10.5 SUMMARY OF RESULTS AND DISCUSSION

The results drawn from the analysis of the questionnaire data, and presented in this chapter, highlight the opinions of executive and non-executive directors of the Ghanaian listed firms on corporate governance and firm performance. Several key findings were examined in this chapter. First, the participation of the executive (56%) and non-executive directors (44%) is expected to have been a positive factor in the adoption of corporate governance provisions by the Ghanaian listed firms. Also, the level of experience of the respondents suggests that a majority (65%) of them have been in their positions for less than 5 years but they are familiar with the existence of the Ghanaian Code (97%) and its specific provisions (92%).

Second, and regarding the corporate governance implementation issues, the respondents believe strongly that the Ghanaian Code is a benchmark for good corporate governance; and that the standard of corporate governance has improved in their firms since the introduction of the Ghanaian Code. The view held by the respondents to the effect of their preparedness to comply with further corporate governance requirements such as a nomination committee is likely to have been a positive influence on corporate governance regulators in Ghana to consider reviewing the Ghanaian Code to meet the standard of international best practices. The respondents felt that the regulatory and institutional bodies are supportive to help implement the Ghanaian Code provisions, but they strongly argued for the revision of the Ghanaian Code by an independent committee, since this has not been done after its introduction.

Finally, the respondents indicated that the separation of the roles of the CEO and Chairman is beneficial to firm performance. However, they offered no support to have a total number of board members ranging from eight to sixteen as beneficial to their firm's performance. That notwithstanding, the respondents clearly held the view that to have a balance of executive and non-executive directors on the board is beneficial to firm performance, as well as the establishment of audit and remuneration committees. There is also strong support, although at a lower level than the specific governance provisions, for the full adoption of the Ghanaian Code provisions as beneficial to firm performance. It would appear that a majority of the specific governance provisions are seen more as highly supported than the full adoption of the Ghanaian Code provisions by the respondents.

In comparison with the regression results from the annual report data, the results from the directors' opinions that the standard of corporate governance has improved in their firms since the introduction of the Ghanaian Code is consistent with the degree of compliance by the sampled firms from the annual report data reported in chapter six. However, the

directors' opinions on a majority of the specific governance provisions as beneficial to firm performance are not consistent with the regression results from the annual report data reported in chapter eight, and the subsequent endogeneity and robustness checks in chapter nine. Interestingly, the directors' opinions on the full adoption of the Ghanaian Code provisions (i.e. equivalent to the *GCGI*) as beneficial to firm performance initially failed to support the regression results from the annual report data reported in chapter eight, but after addressing the endogeneity problems in chapter nine, the two results became consistent. As indicated earlier, and given that the directors opinions on the full adoption of the Ghanaian Code is consistent with the regression results from the annual report data, it is encouraging for the development of a code of best practice on corporate governance to regulate the Ghanaian firms instead of the selective adoption of the specific governance provisions where there is disagreement between the directors opinions and the regression results from the annual report data.

10.6 CHAPTER SUMMARY

This chapter has discussed the findings from the directors' opinions on corporate governance and firm performance. The key objective has been to investigate the perceptions of the directors of the Ghanaian listed firms regarding the adoption of the Ghanaian Code provisions and its benefit to firm performance. In this respect, the respondents have noted that the Ghanaian Code is a benchmark for good corporate governance, and that the standard of corporate governance has improved since its introduction. The evidence of improvement of the standard of good corporate governance supported previous annual report data on the degree of compliance with corporate governance reported among the sampled firms in chapter six. While there is no consensus between the directors' opinions on the specific governance provisions benefit to firm performance and the regression results from the annual report data, there is consensus when it comes to the full

adoption of the Ghanaian Code provisions between the two. It is therefore important to note in this thesis that corporate governance regulators in Ghana should be encouraged in the development of a code of best practice instead of allowing the Ghanaian firms to implement selective adoption of specific governance provisions. The final chapter discusses the conclusions of the thesis.

CHAPTER ELEVEN
CONCLUSIONS

11.1 INTRODUCTION

This thesis has investigated the relationship between the degree of compliance with corporate governance and firm performance in Ghana. This chapter discusses the conclusions of the thesis. First, it presents an overview of the objectives of the thesis. Second, it summarises the key results with particular focus on the degree of compliance with the Ghanaian Code and whether its adoption is beneficial to firm performance. Third, the chapter highlights the contributions of the thesis. Fourth, it discusses the limitations of the thesis. Finally, the chapter provides suggestions for future research. The remainder of the chapter is structured as follows. Section 11.2 provides an overview of the objectives of this thesis. Section 11.3 presents the summary of the key results of the thesis. Section 11.4 highlights the contributions of the thesis. Section 11.5 discusses the limitations of the thesis. Section 11.6 provides suggestions for future research, while section 11.7 summarises the chapter.

11.2 OVERVIEW OF THE OBJECTIVES OF THE THESIS

This thesis has four main objectives. The first objective has been to measure the degree of compliance with the Ghanaian Code provisions among Ghanaian listed firms. Prior researchers in Ghana usually seek to investigate the impact of the specific corporate governance mechanisms on firm performance without measuring these variables against the existing code of best practice. This thesis, however, assessed the degree of compliance with the Ghanaian Code provisions and the subsequent development of the Ghanaian corporate governance index (*GCGI*) and its sub-indices before and

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after its introduction. This suggests a need to assess the extent to which the degree of compliance is in line with the recommendations of the Ghanaian Code during pre 2003 (2000-2002) and post 2003 (2004-2009) adoption periods. The second objective of the thesis is to empirically investigate the relationship between the degree of compliance with the Ghanaian Code provisions and firm performance. For example, prior researchers repeatedly suggest that corporate governance does matter to firm performance holistically instead of the selective adoption of its specific provisions. Fundamentally, it is evident that the corporate governance index based on a particular country's code of best practice has provided more consistent results in European, other developed and developing countries relative to the North American countries where there are mixed results. An interesting question therefore, is whether the adoption of the Ghanaian Code specific governance provisions is more important to firm performance or the developed *GCGI*.

The third objective of the thesis is to empirically evaluate the perceptions of the directors of the Ghanaian listed firms on the adoption of the Ghanaian Code provisions and its benefit to their firm's performance. Arguably, it is perceived that the directors who are responsible for the implementation of good corporate governance are likely to support the implementation of the Ghanaian Code provisions as beneficial to their firm's performance. In particular, this thesis observes the directors' opinions to confirm and complement the relationship between the specific governance provisions or the *GCGI* and firm performance, as well as to identify additional issues not addressed by the annual report data. The final objective of the thesis is to critically examine whether the use of multiple governance data has the potential to affect the results of the relationship between corporate governance and firm performance. An interesting issue here therefore, is whether the regression results from the annual report data and the questionnaire data based on the directors' opinions are consistent or there are differences in the results.

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The opportunity to achieve the stated objectives is provided by the Ghanaian listed firms where annual report data and questionnaire data were collected. From the annual report data perspective, the specific governance mechanisms, the *GCGI*, firm performance and control variables were collected for the period 2000 to 2009, while the executive and non-executive directors' responses to questionnaires represent the questionnaire data. Of particular importance therefore, is whether the regression results from the annual report data and the questionnaire responses demonstrate differences in findings and if so, what is the implication of this to governance-performance relationship studies? In the next section, a summary of the key results of the thesis are presented.

11.3 SUMMARY OF THE KEY RESULTS

The main focus of this thesis has been the investigation of the relationship between the adoption of corporate governance related provisions of the Ghanaian Code and firm performance. As has been noted in chapter three, and until the introduction of the Ghanaian Code in 2003, there were some inconsistencies and weaknesses in the regulation of firms in Ghana (Adda and Consulting, 2006). However, the introduction of the Ghanaian Code has provided a consistent approach by which the Ghanaian firms are governed. In particular, it has documented a range of corporate governance provisions which the Ghanaian listed firms are expected to adopt. But, does the adoption of these corporate governance provisions really matter to firm financial performance? Given that there is no direct evidence regarding the adoption of the Ghanaian Code and its impact on firm performance, the findings of this thesis discussed in chapters six, seven, eight, nine and ten are summarised in this section. In particular, subsection 11.3.1 summarises the key results based on the degree of compliance with the Ghanaian Code provisions that have been discussed in chapter six. Subsections 11.3.2 and 11.3.3 provide a summary of the key results based on the specific

governance mechanisms and the *GCGI* reported in chapter eight, and the subsequent robustness checks in chapter nine. Subsection 11.3.4 summarises the key results of the directors' opinions on corporate governance and firm performance reported in chapter ten, while subsection 11.3.5 compares the key regression results and the questionnaire responses.

11.3.1   Results based on the degree of compliance with the Ghanaian Code provisions

This subsection summarises the key results based on the degree of compliance with the Ghanaian Code provisions. Using 283 total firm-year observations from 2000 to 2009, the degree of compliance with the Ghanaian Code containing 36 corporate governance provisions is measured by the *GCGI* during pre 2003 and post 2003 of its introduction. In general, and consistent with prior studies, the findings that have been presented in chapter six suggest some variations in the degree of compliance among the sample firms during the whole, pre 2003 and post 2003 periods. In particular, and as reported in chapter six, the pattern in the distribution of the *GCGI* over the ten years has the lowest *GCGI* (53%) in the year 2000, and has progressively improved over the next nine years to 73% in 2009, suggesting that firms were becoming more compliant over this period. A positive relationship between the degree of compliance and time findings in Ghana is further supported by prior studies in the UK, Australia and South Africa (Shabbir and Padgett, 2008; Henry, 2008, Cui *et al*, 2008; Ntim, 2009) where a considerable improvement in the degree of compliance was recorded over time among listed firms. This positive increase is driven by the introduction of the Ghanaian Code provisions which show substantial improvement from 2003 to 2004, suggesting that firms might have adopted the provisions in response to the pressure they felt from being listed on the Ghana Stock Exchange (GSE).

Arguably, and as reported in chapter six, the full sampled firms aggregate *GCGI* of 69% during the whole ten-year period is consistent with the comparable prior index studies (Abdo and Fisher, 2007; Aggarwal *et al*, 2007). Whereas Abdo and Fisher (2007) found a G-Score of 61% in South Africa, Aggarwal *et al* (2007) in their cross-country study reported GOV_{44} of 69%, 61%, 57% and 56% for Canada, US, Finland and the UK respectively. These findings suggest that the Ghanaian listed firms' degree of compliance with corporate governance provisions is above average relative to the compliance levels in the other parts of the world. However, the pre 2003 and post 2003 *GCGI* show some notable differences between the subsamples. As reported in chapter six, the pre 2003 recorded an aggregate compliance level of 57%, whereas post 2003 recorded 73%. This shows a 28 percentage change (i.e. from 57 pre 2003 to 73% post 2003); the change not consistent with prior comparable index studies (Cui *et al*, 2008). In particular, Cui *et al* (2008) reported a general change from 66% in 2001 to 71% in 2004 representing an 8 percentage change of their CGS. Given the differences in the study periods, the extent of change among Ghanaian listed firms is significantly higher than the change experienced by the Australian listed firms. As explained in chapter six, Cui *et al* (2008) assessed compliance level of the Australian listed firms' for only one year before and one year after the introduction of their country code, whereas this thesis covered three years before and six years after the introduction of the Ghanaian Code.

The main hypothesis tested (i.e. hypothesis one) for the degree of compliance with the Ghanaian Code provisions is that there is a significant improvement in the degree of compliance with corporate governance practices by listed firms from pre 2003 to post 2003 introduction of the Ghanaian Code. After grouping the *GCGI* into sub-periods, and as reported in chapter six, the findings based on pre 2003 and post 2003 introduction of the Ghanaian Code suggest that there is a statistically significant improvement of the degree of compliance with the Ghanaian Code provisions measured by the *GCGI*, and therefore hypothesis one cannot be rejected. This suggests

that the sample firms were more compliant after the introduction of the Ghanaian Code than when it was not in place. This improvement, one can suggest, would have added to providing a consistent approach in which the Ghanaian listed firms are governed with a clearer definition of the board of directors' responsibilities, board committees' function, shareholder rights, financial affairs and auditing and disclosure practices to enhance the effective implementation of good corporate governance in Ghana. If the improvement of the degree of compliance with the Ghanaian Code provisions is then reflected in the Ghanaian listed firms' financial performance, then one can conclude that the overall objective of implementing good corporate governance in anticipation of enhancing firm performance is achieved.

Overall, the evidence presented in this subsection suggests that the degree of compliance with the Ghanaian Code provisions from the Ghanaian listed firms' annual reports has significantly improved from pre 2003 to post 2003. In particular, the Ghanaian listed firms were more compliant with corporate governance after the introduction of the Ghanaian Code in 2003 than before 2003 when the code was not in place. This is consistent with expectations because the Ghanaian listed firms were expected to comply with the Ghanaian Code provisions or provide explanation for non-compliance as a result of being listed on the Ghana Stock Exchange (GSE). Furthermore, the greater compliance with the Ghanaian Code indicates the Ghanaian listed firms' desire to improve their internal governance mechanisms in areas where the potential conflict of interest between managers and shareholders are high. This is particularly important because the evidence of greater presence of non-executive directors in Ghanaian listed firms, for example, is more likely to provide greater board independence as a measure to help reduce the agency problems resulted from the separation of ownership and control.

11.3.2　Results based on the specific governance mechanisms and firm performance

As has been indicated in chapters four and eight, four key hypotheses were tested in this thesis for the specific governance mechanisms and firm performance. The associated hypotheses include CEO duality, board size, the PNEDs and the presence of board committees (i.e. audit and remuneration committees). The second hypothesis tested in this thesis is that the separation of the roles of the CEO and the Chairman should lead to higher firm performance measured by ROA, ROE and Q-ratio. The CEO duality is found to be positive but statistically insignificant under ROA, the finding not consistent with the recommendations of the Ghanaian Code that encourages role separation. This finding also does not provide empirical support to some of the Ghanaian (Keyereboah-Coleman and Osei, 2008) and international (Bozec, 2005; Haniffa and Hudaib, 2006) studies which reported negative relationship between CEO duality and ROA.

Contrary to ROA, CEO duality is found to be negative but statistically insignificant under ROE. This finding is consistent with prior international studies (Rechner and Dalton, 1991; Kajola, 2008; Sanda *et al*, 2010) who reported the roles separation to have a positive impact on ROE. However, it does not lend empirical support to hypothesis two that the separation of the roles of the CEO and Chairman should lead to higher firm performance. The insignificant coefficient also does not lend support to the recommendations of the Ghanaian Code regarding roles separation. As in the case of ROA, the CEO duality is found to be statistically insignificant but positively related to Q-ratio, suggesting that hypothesis two is not supported. This evidence also does not only lend support to the recommendations of the Ghanaian Code, it contradicts past Ghanaian (Kyereboah-Coleman and Biekpe, 2006a) and international (Kiel and Nicholson, 2003; Jackling and Johl, 2009; Sanda *et al*, 2010) studies which reported a negative and statistically significant association between CEO duality and Q-ratio. As reported in chapter eight, the differences in findings between this thesis and Kyereboah-Coleman and

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Biekpe (2006a) may be explained by different governance data and the estimation methods used by each study.

As reported in chapter eight, and grouping the annual report data into pre 2003 and post 2003 introduction of the Ghanaian Code, the findings based on the sub-periods are not significantly different from the whole period regarding the relationship between the CEO duality and all the firm performance measures (i.e. ROA, ROE and Q-ratio). However, the pre 2003 experienced insignificant negative relationship between CEO duality and the firm performance measures of ROA and Q-ratio but with sign reversal during post 2003 to a positive association between the two. By contrast, the CEO duality is found to be statistically insignificant but negatively related to ROE during pre 2003 and post 2003 periods, evidence consistent with the whole period results. Empirically, the evidence of sign reversals under ROA is not consistent with Bhagat and Bolton (2009) who found CEO duality to be statistically significant and positively related to ROA before (pre 2002) and after (post 2002) the SOX Act 2002. As explained earlier in chapter eight, the differences in findings between these two studies might have been contributed to by the differences in the estimation methods used, thus, fixed effects regression used in this thesis versus OLS and 2SLS estimation methods used by Bhagat and Bolton (2009). That notwithstanding, and after subjected the results to a robustness check in chapter nine, the findings based on the whole, pre 2003 and post 2003 periods remained unchanged, suggesting that CEO duality has no impact on firm performance in Ghana.

The third hypothesis investigated in this thesis is that the smaller the board size should lead to higher firm performance measured by ROA, ROE and Q-ratio. As reported in chapter eight, the board size is found to be positive but statistically insignificant under ROA, suggesting that hypothesis three is not supported. By contrast, the board size is found to be statistically significant and positively related to both ROE and Q-ratio. This suggests that hypothesis three is supported and also lends empirical support to the recommendations

of the Ghanaian Code on board size ranging from 8 to 16. The statistically significant and positive association between board size and ROE lends empirical support to the findings of Kajola (2008). Also, the statistically significant and positive relationship between board size and Q-ratio provides empirical support to the Ghanaian (Kyereboah-Coleman and Biekpe, 2006a) and other international (Adam and Mehran, 2005; Coles *et al*, 2008; Henry, 2008; Jackling and Johl, 2009; Sanda *et al*, 2010) studies. However, this finding is not in line with past studies (Yermack, 1996; Cheng, 2008; Guest, 2009) who reported negative and statistically significant association between board size and Q-ratio. Arguably, the average board size of 8.52 which falls between the range of eight and sixteen of the Ghanaian Code recommendations indicates that the smaller board size appears to be more effective for the operations of the Ghanaian listed firms than the larger board size as reflected in the accounting-based firm performance measure of ROE. In the same way, and as reported in chapter eight, smaller board size in Ghana is also perceived by the market as more effective than larger board size as reflected in the findings of this thesis and that of Kyereboah-Coleman and Biekpe (2006a).

Grouping the annual report data into sub-periods, and as reported in chapter eight, the board size is found to be statistically insignificant but positively related to ROA and Q-ratio during pre 2003 and post 2003 sub-periods. However, and whereas pre 2003 and post 2003 findings under ROA is consistent with the whole period results, the positive and statistically insignificant under Q-ratio during pre 2003 and post 2003 sub-periods is not consistent with the whole period results where the relationship is statistically significant between the two. Although, the pre 2003 positive and statistically insignificant association between board size and ROE is similar to the results of ROA and Q-ratio, the post 2003 period experienced a positive and statistically significant relationship between the two. As reported in chapter eight, the slight reduction of the average board size of the Ghanaian listed firms from 9.03 during pre 2003 to 8.17 during post 2003 might have

affected ROE more significantly than ROA and Q-ratio during the post 2003 period.

That notwithstanding, and as reported in chapter nine, the pre 2003 and post 2003 findings are more sensitive after the robustness checks under ROA and ROE than those for the whole period. Whereas the board size experienced sign reversal to have insignificant negative impact on ROA during post 2003, the board size during the pre 2003 period became statistically significant and positively related to ROE. Given that the results are robust during the whole period, it can be argued that the reduction of the number in observations after lagging the board size might have caused the differences in findings during the pre 2003 and post 2003 periods. Essentially, board size does matter more in Ghana under ROE and Q-ratio during the whole period than ROA, whereas the pre 2003 and post 2003 periods provide mixed results under ROA and ROE after addressing the problems of endogeneity caused by a time-lag. This suggests that the board size results during the whole period can be considered as robust, while the results during pre 2003 and post 2003 sub-periods are sensitive to the problems of endogeneity caused by a time-lag, and therefore the differences in findings between the two estimations.

The fourth hypothesis observed in this thesis is that the higher the proportion of non-executive directors should lead to lower firm performance measured by ROA, ROE and Q-ratio. As reported in chapter eight, the proportion of non-executive directors (PNEDs) on the board (76%) is consistently found to be statistically significant and negatively related to ROA, ROE and Q-ratio, suggesting that hypothesis four is supported. However, this evidence does not lend empirical support to the recommendations of the Ghanaian Code to have a balance of executive and non-executive directors on the board because the Ghanaian boards are not balanced (i.e. executive 24% and non-executive directors 76%). That notwithstanding, the statistically significant and negative association between the PNEDs and ROA is consistent with prior studies in Ghana (Kyereboah-Coleman and Biekpe, 2006a; 2006b) and other international studies (Bozec, 2005; Guest, 2009). This is not the case for the

statistically significant relationship between PNEDs and ROE where it does not lend empirical support to past studies (Pearce and Zahra, 1992; Daily and Dalton, 1993) who reported a statistically significant and positive association between the two. The statistically significant and negative association between PNEDs and Q-ratio offers empirical support to past Ghanaian (Kyereboah-Coleman and Biekpe, 2006a) and international (Agrawal and Knoeber, 1996; Kiel and Nicolson, 2003) studies. Notably, the poor performance based on the PNEDs can be explained by the unbalanced nature of the Ghanaian boards relative to the recommendations of the Ghanaian Code to have a balance of executive and non-executive directors.

As indicted in chapter eight, and grouping the annual report data into sub-periods, the PNEDs is only found to be statistically significant and negatively related to ROA during the pre 2003 period, whereas pre 2003 and post 2003 under ROE and Q-ratio remained negative but not statistically significant. The pre 2003 evidence under ROA lends empirical support to the work of Bhagat and Bolton (2009) who found a negative and statistically significant association between board independence and ROA during the pre 2002 SOX period. However, the statistically insignificant and negative association between the two post 2003 is not consistent with Bhagat and Bolton (2009) who experienced sign reversal to a positive and statistically significant relationship between board independence and ROA. As explained in chapter eight, and given the differences in findings during post periods under ROA of the two studies, the US boards became more independent post 2002 adoption of SOX than the Ghanaian counterparts where the PNEDs did not change significantly (i.e. from 75.20% during pre 2003 to 75.99% post 2003). In addition, the differences in the estimation methods used (i.e. fixed effects regression versus OLS and 2SLS) might have caused the differences in findings during post periods.

That notwithstanding, and after subjected the initial results into a robustness check in chapter nine, the statistically significant and negative relationship

between the PNEDs and the accounting-based firm performance measures (i.e. ROA and ROE) remains unchanged during the whole period, suggesting that the unbalanced nature of the Ghanaian boards is affecting firm performance poorly in the country. However, the results experienced some sensitivity during pre 2003 and post 2003 periods where a negative and statistically significant impact is recorded under ROA and ROE during post 2003 after addressing the problems of endogeneity caused by a time-lag. This suggests that the Ghanaian listed firms with high proportion of non-executive directors on their board performed poorly after the introduction of the Ghanaian Code because they did not comply with the code recommendations of having a balance of executive and non-executive directors on the board for effective decision making.

The fifth hypothesis examined in this thesis is that the presence of an audit committee and a remuneration committee should lead to better firm performance. As reported in chapter eight, the presence of audit and remuneration committees are found to be statistically insignificant but positively related to the accounting-based firm performance measures of ROA and ROE, whereas the relationship between these committees and Q-ratio is negative and positive but statistically insignificant for audit and remuneration committees, respectively. This suggests that hypothesis five is not supported. Empirically, this evidence does not lend support to the recommendations of the Ghanaian Code which encourages the establishment of these committees. However, the positive and statistically insignificant relationship between audit and remuneration committees and ROA is consistent with prior Ghanaian (Kyereboah-Coleman and Amidu, 2008) and international (Weir and Laing, 1999) studies. This is not the case of the relationship between audit committee and ROE where it does not lend empirical support to Kajola (2008) who reported a negative association between the two. The negative and statistically insignificant association between audit committee and Q-ratio offers empirical support to the

evidence reported in the UK by Weir *et al* (2002) who reported a negative relationship between the two.

As reported in chapter eight, and grouping the annual report data into sub-periods, a remuneration committee is only found to be statistically significant and positively related to ROA and ROE during the pre 2003 period, whereas the audit committee during pre 2003 and post 2003 periods under ROA, ROE and Q-ratio did not experience any significantly different results from the whole period. This suggests that the Ghanaian listed firms which established a remuneration committee before the introduction of the Ghanaian Code perform better than firms which did not have a remuneration committee in place during the same period. After the introduction of the Ghanaian Code, both committees did not have any significant impact on firm performance despite the significant improvement of the adoption of audit committee from 34% during pre 2003 to 85% post 2003. As explained in chapter eight, the establishment of these committees may matter but their impact on firms could not be seen in isolation unless the composition requirements of such committees are met. As in the case of other specific governance mechanisms, the robustness checks in chapter nine based on the board committees did not experience any significant changes during the whole, pre 2003 and post 2003 periods. In this case, it can be concluded that the establishment of both audit and remuneration committees has no significant impact on firm performance after the publication of the Ghanaian Code, evidence consistent with Vafeas and Theodorou (1998) and Weir *et al* (2002) in their UK studies.

The evidence presented in this subsection regarding CEO duality, board size, proportion of non-executive directors, audit and remuneration committees either suggest statistically significant or in most cases no relationship between each of the five specific governance mechanisms and different firm performance measures (ROA, ROE and Q-ratio). Specifically, the results show that board size has a significant positive impact on firm performance

measured by ROE. In the earlier theoretical discussion, it was observed that smaller boards are more effective in monitoring managers than larger boards since larger boards are seen by investors as ineffective and are likely to consume more managerial perquisites. In addition, the larger boards may also affect firm performance negatively because the additional costs associated with slow decision-making is higher than the marginal benefits if the number of directors exceeds ten. In this respect, the board size-performance relationship evidence presented indicates that this may indeed be the case because the Ghanaian boards are less than ten. The proportion of non-executive directors shows a significant negative impact on firm performance measured by ROA, ROE and Q-ratio. This result here support the idea that boards with a higher proportion of non-executive directors hold back managerial initiative through excess monitoring and therefore the benefit of board independence, objectivity and experience expected from the representation of outside directors appears to be ineffective, hence, poor firm performance. Consistent with previous studies, CEO duality, audit and remuneration committees have no impact on firm performance.

11.3.3   Results based on the *GCGI* and firm performance

Given that the specific governance mechanisms-performance relationships above have provided mixed results, the main hypothesis (i.e. hypothesis six) tested in this thesis to establish whether the full adoption of the 36 Ghanaian Code provisions is more beneficial to firm performance than its specific provisions is that there is a significant positive association between the Ghanaian corporate governance index (*GCGI*) and firm performance measures of ROA, ROE and Q-ratio. As reported in chapter eight, the *GCGI* under all firm performance measures is found to have a positive but statistically insignificant association between them, suggesting that hypothesis six is not supported. That notwithstanding, the statistically insignificant and positive association between the *GCGI* and ROA is

consistent with past governance index-performance relationship studies in developed (Clacher *et al*, 2008; Bassen *et al*, 2008; Gupta *et al*, 2009) and other developing (Larcker *et al*, 2007; Price *et al*, 2011) countries.

However, this result differs from prior studies in other developed and developing countries which reported a statistically significant and positive relationship between corporate governance index and firm performance (Gompers *et al*, 2003; Klapper and Love, 2004; Ponnu and Ramthandin, 2008; Bhagat and Bolton, 2008; Ntim, 2009; Gupta *et al*, 2009; Renders *et al*, 2010; Bauer *et al*, 2010). Specifically, and in the context of Africa where this thesis is based, Ntim (2009) found a statistically significant and positive relationship between the South African Corporate Governance Index (*SACGI*) and ROA. Given the differences in the results, and as reported in chapter eight, two possible explanations can be put forward. First, this thesis included periods (i.e. from 2000 to 2009) of both pre and post publication of the Ghanaian Code provisions, whereas Ntim (2009) only focused on the post King II Report to develop the *SACGI* (i.e. from 2002 to 2006) which might have affected the findings when using the whole data. Second, and as reported by Black *et al* (2006a) regarding large differences of the coefficients of OLS and fixed effects regressions and significant levels, including signs reversals in their studies in which they cast doubts on the OLS results, the differences in findings between this thesis and that of Ntim (2009) may be attributed to the fixed effects versus OLS regressions used as estimation methods.

Similarly, the statistically insignificant and positive association between the *GCGI* and ROE lends empirical support to prior studies which reported statistically insignificant but positive association between the Germany Corporate Governance Code (*GCGC*) index and ROE (Bassen *et al*, 2008). This result however does not lend empirical support to other prior studies which reported statistically significant and positive association between their respective index and ROE (Cheung *et al*, 2007; Bauer *et al*, 2010; Renders *et*

al, 2010). As reported in chapter eight, Renders *et al* (2010) found a negative association between their overall index and ROE for the initial analysis but after controlling for the sample selection bias and endogeneity, the negative sign changed to positive and became statistically significant. In addition, the *GCGI*-Q-ratio positive but statistically insignificant relationship lends empirical support to prior studies in the developed (Bauer *et al*, 2003; Gupta *et al*, 2009; Aggarwal *et al*, 2007; Bruno and Claessens, 2010) and developing (Kouwenberg, 2006; Garay and Gonzalez; 2008; Cheung *et al*, 2010) countries. However, the result in this thesis does not lend empirical support to other prior studies in developed (Gompers *et al*, 2003; Drobetz *et al*, 2004; Beiner *et al*, 2006; Brown and Caylor *et al*, 2006; Clacher *et al*, 2008; Ammann *et al*, 2011; Bauer *et al*, 2010) and developing (Klapper and Love, 2004; Leal and Carvalhal-da-Silva, 2005; Black *et al*, 2006a; Javed and Igbal, 2007; Black *et al*, 2010; Balasubramanian *et al*, 2010) countries which reported statistically significant and positive association between their governance indices and firm performance measured by Q-ratio.

Fundamentally, the results based on the relationship between the *GCGI* and both the accounting-based (ROA and ROE) and the market-based (Q-ratio) firm performance measures indicate that corporate governance does not matter to firm performance in Ghana during the whole period. However, the results do not fully reveal the effect of each of the six sub-indices[51] of the *GCGI* on firm performance. In all, and as reported in chapter eight, financial affairs and auditing index is found to drive the *GCGI*-ROA relationship as being statistically significant and negatively related to ROA. Similarly, the board composition index is found to drive the *GCGI*-ROE relationship as being statistically significant and positively related to ROE, evidence not consistent with Cheung *et al* (2007) who reported statistically insignificant but positive association between the two.

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[51] The six sub-indices include board composition index, audit committee index, remuneration committee index, shareholder rights index, financial affairs and auditing index and disclosure index.

As reported in chapter eight, and grouping the annual report data into sub-periods, the *GCGI* is found to be statistically significant and positively related to the accounting-based firm performance measures (i.e. ROA and ROE) during the pre 2003 period, suggesting that hypothesis six is supported. The post 2003 period, however, suggests that the *GCGI* has no impact on all the firm performance measures. These results suggest that the Ghanaian listed firms which voluntarily adopted some of the 36 provisions before the formal introduction of the Ghanaian Code perform better than those firms which did not adopt such provisions. As in the case of the whole period, the pre 2003 period relationship is driven by audit and remuneration committees indices with a statistical significantly and positively related to both ROA and ROE, whereas the post 2003 period *GCGI*-Q-ratio negative relationship is driven by shareholder rights index or financial affairs and auditing index which are statistically significant and positively or negatively related to Q-ratio.

As reported in chapter nine, and after subjecting the above results to endogeneity tests and a series of robustness checks, the relationship between the lagged *GCGI* and performance during the whole period under ROA remains unchanged, whereas the *GCGI*-ROE relationship experienced a positive and statistically significant under ROE. This suggests that there is an improvement in the relationship under ROE after addressing the problems of endogeneity caused by a time-lag. However, the *GCGI*-accounting-based firm performance results do not show the impact of each of the lagged sub-indices on firm performance. In this regard, the positive and statistically significant level of the lagged board composition and shareholder rights indices as well as lagged negative and statistically significant of the financial affairs and auditing and disclosure indices are seen to drive the positive but insignificant lagged *GCGI*-ROA relationship. Similarly, the positive and statistically significant level of remuneration committee and shareholder rights indices affected the statistically significant and positive association between a lagged *GCGI* and ROE. Given that the financial affairs and auditing index is robust under ROA, the board composition, remuneration committee,

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shareholder rights and disclosure indices experienced some sensitivity under both ROA and ROE after addressing the problems of endogeneity caused by a time-lag.

After grouping the annual report data into pre 2003 and post 2003, and as reported in chapter nine, the statistically significant and positive relationship between *GCGI* and the accounting-based firm performance measures (i.e. ROA and ROE) reported during the pre 2003 period changed to positive and statistically insignificant after lagging the *GCGI*. Similarly, a lagged *GCGI* during the post 2003 period has no impact on the accounting-based firm performance measures. These results suggest that a lagged *GCGI* during pre 2003 and post 2003 periods is more sensitive under ROA and ROE, evidence not supported by the earlier conclusion that corporate governance is important to profitability prior to the introduction of the Ghanaian Code provisions. As noted in chapter nine, the differences in findings based on the pre 2003 and post 2003 periods un-lagged and lagged *GCGI* may be explained by the differences in the number of observations between the two estimations as these were reduced from 65 (pre 2003) and 193 (post 2003) to 42 and 154 during the same periods, respectively. With regard to the six sub-indices during pre 2003 and post 2003 periods, only a lagged shareholder rights index under both ROA and ROE experienced some sensitivity during the post 2003 period with a positive and statistically significant impact on the accounting-based firm performance measures, but it could not drive a lagged *GCGI*-performance relationship to a statistically significant level.

To further address the problems of endogeneity, and using panel instrumental variable regressions, the evidence of the relationship between the *GCGI* and firm performance during the whole, pre 2003 and post 2003 period suggests that the adoption of corporate governance provisions as a whole does matter to the Ghanaian listed firms' profitability. As reported in chapter nine, and given that Renders *et al* (2010) governance index

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improved from a negative to a positive and statistically significant impact on firm performance after controlling for endogeneity, it is therefore not surprising to have improved results based on the instrumented *GCGI* relative to the un-instrumented *GCGI* results reported earlier. Essentially, the results in this thesis provide strong empirical support for the main argument that corporate governance does matter to firm performance holistically rather than its specific governance mechanisms after addressing the problems of endogeneity. In particular, the results are encouraging for the development of a code of best practice on corporate governance to regulate the operational environment of firms rather than the selective adoption of its specific governance mechanisms.

In summary, the evidence presented in this subsection suggests that the *GCGI* has a significant positive impact on firm performance measured by ROA and ROE. This finding is consistent with expectations because the Ghanaian listed firms are expected to adopt the Ghanaian Code provisions holistically but not on an individual basis. In the earlier theoretical discussion, it was argued that firm performance is affected holistically by a set of the specific governance mechanisms but not on an individual basis since integrating these mechanisms into a single governance index provides more explanatory power in explaining firm performance than each of the specific governance mechanisms. In addition, the purpose of the specific governance mechanisms in reducing the agency problems may not be achieved if corporate governance provisions are adopted selectively. The evidence presented here suggests that this may be the case since not all the specific governance mechanisms are more effective in affecting firm performance as demonstrated by the specific governance mechanisms-performance relationship presented earlier. Viewed from this point, the Ghanaian firms are encouraged to fully implement the Ghanaian Code provisions rather than the selective adoption of its specific provisions in an attempt to improve their performance.

11.3.4 Results based on the directors' opinions on corporate governance and firm performance

As one of the objectives of this thesis, and given that the directors of the Ghanaian listed firms are responsible for the implementation of good corporate governance, their views were sought regarding the adoption of the Ghanaian Code provisions and its benefit to firm performance to validate and complement the regression results from the annual report data. In this respect, all the six hypotheses tested in chapters six and eight were examined based on the questionnaire responses, as well as additional issues not addressed by the annual report data. In relation to corporate governance implementation issues, the respondents believe strongly that the Ghanaian Code is a benchmark for good corporate governance in Ghana, and that the standard of corporate governance in their firms has improved since the introduction of the Ghanaian Code, suggesting that hypothesis one is supported. Empirically, this evidence also reinforces past results reported by Ocran (2001) that the concept of corporate governance has gained grounds in Ghana.

However, and given that the annual report data could not help to investigate additional issues such as the directors' preparedness to comply with further corporate governance and the need to review the Ghanaian Code by an independent committee, the questionnaire responses have provided some interesting results. In particular, and as reported in chapter ten, the respondents strongly believe that their firms are prepared to comply with further corporate governance requirements such as the establishment of a nomination committee, if not complied with presently. While respondents provided weak support that the current regulatory and institutional bodies are supportive enough to help implement the Ghanaian Code provisions, they strongly believed that there is a need to review the Ghanaian Code by an independent committee. This is particularly important, and as indicated in chapters three and ten, the Ghanaian Code has not been reviewed since its

introduction and reviewing it may help to bring it in line with what is practised around the world.

As reported in chapter ten, and given the directors opinions on the adoption of the specific governance provisions and firm performance, the respondents strongly believed that the separation of the roles of the CEO and the Chairman is beneficial to their firm's performance, suggesting that hypothesis two is supported. Empirically, this result also provides clear support for the Ghanaian Code recommendations of role separation between the CEO and the Chairman. However, the respondents offered no support to have total board members ranging from eight to sixteen as beneficial to their firm performance, suggesting that hypothesis three is not supported. This evidence also does not lend empirical support to the recommendations of the Ghanaian Code for having a board size of between eight and sixteen. As reported in chapter ten, the minimum of eight and the maximum of sixteen board members recommended by the Ghanaian Code may be criticized because the two are all even numbers. If the listed firms complied with the board size of either eight or sixteen, and in the course of the board decision making a vote tied, it would be very difficult for the board to arrive at a decision. This problem further supports the views of the directors to review the Ghanaian Code in order to take remedial action.

In relation to board independence, and as reported in chapter ten, the respondents strongly believe that to have a balance of executive and non-executive directors on the board is beneficial to their firm's performance, suggesting that hypothesis four is not supported. However, this evidence lends empirical support to the recommendations of the Ghanaian Code to have a balance of executive and non-executive directors on the board. Similarly, there is strong support for the establishment of board committees. In particular, the respondents strongly believe that the presence of audit and remuneration committees is beneficial to their firm's performance, suggesting that hypothesis five is supported. Empirically, this result offers

further support to the recommendations of the Ghanaian Code for the establishment of these committees. Arguably, and except for the board members specific governance provision where the respondents do not support its range from eight to sixteen as beneficial to their firm's performance, the respondents strongly felt that separating the roles of the CEO and Chairman, having a balance of executive and non-executive directors, the presence of audit and remuneration committees are all beneficial to their firm's performance in Ghana. This suggests that the directors who are responsible for the implementation of the Ghanaian Code support a majority of its specific provisions selected for investigation in this thesis.

That notwithstanding, and as reported in chapter ten, the respondents also have a strong belief that the full adoption of the Ghanaian Code is beneficial to their firm's performance rather than its specific provisions, suggesting that hypothesis six is supported. Empirically, this evidence is in line with previous directors' opinions study (Jenkins-Ferrett, 2001) in South Africa where the respondents rated corporate governance as *utmost important* to *important* in contributing to their firm's performance. As noted in chapter ten, this evidence also provides further support to the views shared by Metrick and Ishii (2002) and Klapper and Love (2004) that the adoption of corporate governance matters more in countries with weak legal systems relative to countries with strong legal systems. This is particularly important because the result from the directors' opinions on corporate governance and firm performance in this thesis does not lend empirical support to the past directors' opinions studies in the UK (CBI/Touch Ross, 1995; Moxey *et al*, 2004). Specifically, CBI/Touch Ross (1995) in their directors' opinions study reported that the Cadbury recommendations have had no positive impact on their firm's performance, suggesting that the adoption of corporate governance provisions does matter more in countries with weak legal systems.

The evidence presented in this subsection provides more insights on the degree of compliance with the Ghanaian Code and its impact on firm performance from the directors' standpoint. First, the evidence suggests that the Ghanaian Code is a benchmark for good corporate governance, and that the standard of corporate governance has improved since its introduction in 2003. In addition, the directors are prepared to comply with further corporate governance provisions such as the establishment of a nomination committee and support the need to review the Ghanaian Code. They however provided a weak support for the current regulatory and institutional bodies regarding the support they receive from them in their effort to implement good corporate governance. In terms of the adoption of the Ghanaian Code provisions and its impact on firm performance, the directors provide strong support for the specific governance mechanisms regarding the separation of the roles of the CEO and the Chairman, to have a balance of executive and non-executive directors on the board, the establishment of audit and remuneration committees to be beneficial to their firm's performance. They however considered the recommended board members ranging from eight to sixteen by the Ghanaian Code as not beneficial to their firm performance. That notwithstanding, the directors provide support for the full adoption of the Ghanaian Code as beneficial to their firm's performance instead of the selective adoption of its specific provisions.

11.3.5   Comparison of the key regression results and the questionnaire responses

As has been discussed in subsection 1.3 of chapter one, the final objective of this thesis is to investigate whether the use of multiple governance data has the potential to affect the findings of the relationship between corporate governance and firm performance study. Methodologically, the key regression results from the annual report data and the questionnaire responses from the directors of the Ghanaian listed firms are compared to establish the validity or otherwise of the regression results from the annual

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report data. In this respect, the evidence based on the annual report data regarding the significant improvement in the degree of compliance with corporate governance after the introduction of the Ghanaian Code is validated by the questionnaire responses. For the degree of compliance, the directors' responses that the standard of corporate governance has improved in their firms since the introduction of the Ghanaian Code validate the interpretation of the statistically significant improvement from the pre 2003 period to the post 2003 period. This suggests that the degree of compliance with the Ghanaian Code provisions has improved both in practice and from the directors' opinions which may be a good sign for regulators of corporate governance in Ghana.

With regard to the adoption of the Ghanaian Code specific governance provisions and its impact on firm performance, a number of interesting results emerge when comparing the regression results and the questionnaire responses. For role separation, while insignificant results are shown in the regression results, the respondents in this case suggest that the separation of the roles of the CEO and Chairman is beneficial to their firm's performance. As reported in chapter ten, the differences in findings between the regression results and the directors' opinions on the role separation may be explained in that the directors might see the implementation of the role separation as beneficial to their firm's performance, but in practice, that may not be the case as evidenced in the regression results from the annual report data. This suggests that separating the two roles may not necessarily guarantee firm performance unless other specific governance mechanisms are effectively adopted. For example, a firm may have its two roles separated but if they do not have the right board size with members who are not politically chosen in place for decision making, this may not have any positive impact on firm performance. This is because, and as one may argue, the strength of the board may depend on the strength of the individual members, but it is not the size that matters for important decision making. That notwithstanding, there is clear indication that the directors who are

responsible for the implementation of good corporate governance in their various firms appear to value role separation in Ghana.

By contrast, the regression results of board size having a positive and statistically significant impact on firm performance measured by ROE and Q-ratio is in disagreement with the responses from the directors who offered no support to the board members ranging from eight to sixteen as beneficial to their firm's performance. However, the regression results of statistical insignificance based on ROA is in agreement with the respondents' view of board size not being beneficial to their firm's performance. The differences in findings may be explained in that the directors in Ghana focus more on smaller board sizes (i.e. average board size is 8.52) rather than the range recommended by the Ghanaian Code of between eight and sixteen. For the balance of executive and non-executive directors on the board, the regression results show that, and regardless of the firm performance measure used, the PNEDs has a negative and statistically significant impact on firm performance. This result is in disagreement with the responses from the directors that to have a balance of executive and non-executive directors is beneficial to their firm's performance. The differences in findings is not surprising because, and based on critical observation during the reading of the Ghanaian listed firms annual reports, a majority of the firms have only the CEO as an executive director to sit on the board. Similar to the above differences, the board committees also appear to have no positive impact on firm performance based on the regression results, whereas the responses from the directors suggest that the presence of audit and remuneration committees are beneficial to their firm's performance. However, and using the *GCGI* as the equivalent of the full adoption of the 36 Ghanaian Code provisions, the regression results of positive and statistically significant impact on the Ghanaian listed firms profitability is validated by the responses of the directors who noted that the full adoption of the Ghanaian Code is beneficial to their firm's performance.

Overall, the comparison of the regression results and the questionnaire responses based on a majority of the specific governance provisions' benefit to firm performance is extremely mixed, whereas there is consensus between the two based on the full adoption of the Ghanaian Code provisions. These results have important methodological suggestions for future corporate governance research. Specifically, the type of governance data can potentially affect governance-performance relationship research findings. Arguably, and given the consensus between the regression results and the questionnaire responses based on the *GCGI* or the full adoption of the Ghanaian Code provisions, the full adoption of a particular code may be more important to firm performance than its specific provisions. A possible explanation is that the development of a corporate governance index cut across several specific governance provisions to cover actual firms' different governance qualities to constitute the overall index. This is reinforced by the directors who support the idea of the full adoption of a code of best practices instead of the selective adoption of its specific provisions. Fundamentally, the full adoption of a particular code of best practice or the development of a corporate governance index is expected to have a positive impact on firm performance rather than the selective adoption of its provisions.

11.4 CONTRIBUTION TO KNOWLEDGE

Given that there is no evidence regarding the adoption of the Ghanaian Code provisions and its impact on firm performance in Ghana, this thesis makes extensions to the existing corporate governance literature and numerous new contributions to knowledge. First, the Ghanaian Code on corporate governance suggests that the practices embodied in it are not backed by the force of law but no study to date has investigated the degree of compliance among Ghanaian listed firms. This thesis fills this gap in the extant literature by providing for the first time the degree of compliance with the Ghanaian Code provisions during the pre 2003 and post 2003 periods. The evidence

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shows that there is significant improvement in the degree of compliance from pre 2003 to post 2003 introduction of the Ghanaian Code. Although, the degree of compliance with the Ghanaian Code provisions has improved, there are significant differences in governance standards among Ghanaian listed firms which can mainly be explained by the formal adoption of the Ghanaian Code provisions among Ghanaian listed firms.

Second, using corporate governance data directly gathered from annual reports of the Ghanaian listed firms, this thesis investigates the relationship between corporate governance practices and firm performance in the context of pre 2003 and post 2003 introduction of the Ghanaian Code. The findings suggest that the *GCGI* developed from the Ghanaian Code provisions has a positive and statistically significant impact on firm performance. Third, the thesis provides the first direct evidence of the directors' opinions on the adoption of corporate governance and their firm's performance. The findings from the responses of the directors suggest that the adoption of the Ghanaian Code provisions is beneficial to their firm's performance. These responses lead to the enhancement of the theoretical interpretations of the regression results particularly for the full adoption of the Ghanaian Code provisions impact on firm performance. Given the regression results and the directors' responses, the applicability of corporate governance provisions replicated from the worldwide corporate governance reforms underpinned by the agency theory is supported in explaining firm performance in Ghana.

Fourth, the thesis provides a methodological extension to prior governance-performance relationship studies because it incorporates not only the extensively used specific governance mechanisms in the study of governance-performance relationships, but also the *GCGI* and the directors' opinions on corporate governance and firm performance in the same study and context. The comparison of the regression results from the annual report data and the directors' responses helps investigate the consistency or otherwise of the governance-performance relationship testing. In particular,

the directors' opinions on corporate governance and firm performance support the interpretation and understanding of the findings from the *GCGI* and the specific governance mechanisms' impact on firm performance. Furthermore, the analysis of the directors' responses has helped to discover additional issues that are not captured by the regression results from the annual report data. For example, the directors' preparedness to comply with further corporate governance provisions such as the establishment of a nomination committee and their strong support for a review of the Ghanaian Code is clear evidence that might help regulators to take remedial action.

Finally, a number of implications can be drawn from the investigation of the relationship between corporate governance and firm performance in Ghana. In particular, the analyses of the degree of compliance with the Ghanaian Code provisions and the responses from the directors from the Ghanaian listed firms suggest that corporate governance standards have improved since the introduction of the Ghanaian Code. This suggests that attempts by corporate governance regulators and institutional bodies such as the Security and Exchange Commission Ghana (SECG), Institute of Directors Ghana (IoD-Ghana), Ghana Stock exchange (GSE) and the Institute of Chartered Accountants Ghana (ICAG) are gradually beginning to have a positive impact on compliance over time. However, and as discussed in section 6.2 of chapter six, the analyses show the lack of compliance for certain specific governance provisions[52] which suggest that some of them may not be suitable in the Ghanaian context or there is lack of compliance or enforcement on the part of regulators. One other implication of this result is that the Ghanaian Code lacks some recommendations that are comparable to international standards such as the establishment of a nomination committee and the chairmanship of a remuneration committee. Similarly, the

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[52] These include the frequency of board meetings, existence of finance director, members of audit committee with adequate financial knowledge, existence of remuneration committee, composition of remuneration committee, disclosure of remuneration committee membership, NED as the chairman of remuneration committee, board of directors' remuneration in stock and the opportunity for shareholders to vote by mail.

recommendations regarding board size ranging from eight to sixteen and the unclear definition of what constitutes a balance of executive and non-executive directors may require further considerations. It can therefore be argued in this thesis, and as in line with the directors' support for an independent committee to review the Ghanaian Code, that there is a need for regulators to take remedial action. However, any changes should be considered by comparing the cost and benefit that can be derived from the review.

Although the regression results and the responses from the directors on the selective adoption of the specific governance provisions are mixed, the *GCGI* positive and statistically significant impact on firm performance validated by the responses from the directors implies that better governed firms perform better than poorly governed firms in Ghana. These results have some important implications. For the Ghanaian firms, the improvement in their degree of compliance with the Ghanaian code provisions can provide a means of achieving profitability in their respective firms. For regulators, it is encouraging for the development of a code of best practice on corporate governance to regulate the operational environment of firms in Ghana rather than the selective adoption of the specific governance provisions.

11.5 LIMITATIONS

The key findings of this thesis are important but may suffer from data limitations which need to be recognised. First, the sample size used is limited to an average of 28 listed firms over the ten year period. However, the sample size is larger than prior average samples of Ghanaian studies (Kyereboah-Coleman and Biekpe, 2006a; 2006b). For example, Kyereboah-Coleman and Biekpe (2006a) used a sample size of 16 non-financial Ghanaian listed firms to examine the relationship between board size, board composition, CEO duality and firm performance over the period of 1990 to

2001. Also, Kyereboah-Coleman and Biekpe (2006b) in conducting a comparative analysis of listed and non-listed banks in Ghana collected data on 18 firms over the period 1990 to 2001. However, the ten year period covered in this thesis to generate a total of 283 firm-year observations is more or less a representation of the population of firms listed on the GSE.

Second, the compromise between the limitations of manual collection and the need to have adequate data for the panel data analysis makes the data collection an extremely labour-intensive exercise for corporate governance and firm performance variables. In this respect, practical limitations such as finance and time taken to read relevant pages of the 283 annual reports to decide whether a particular provision is complied with or not, and binary coding the number of provisions that are complied by the listed firms for eventual development of the GCGI were expensive and time consuming. However, and given that the development of the GCGI is based on an un-weighted approach, the binary coding may not reflect the relative importance of the different corporate governance provisions. In this respect, future research may assign weights to each of the corporate governance provisions but this may have the disadvantage of making subjective judgements relative to the importance of each corporate governance provision.

Third, one of the underpinnings of agency model is the separation of ownership and control. This indicates that ownership structure affects the extent of agency problems faced by a firm. This thesis did not include ownership data and it is recognised that this is an important limitation of the thesis. However, the methodology employed in the analysis is consistent with a number of recently published papers that have analysed the specific governance mechanisms-performance relationship (Abdullah, 2004; Haniffa and Hudaib, 2006; Kyereboah-Coleman and Biekpe, 2006a; 2006b; Ujunwa, 2012) and governance index-performance relationship (Black *et al* 2006a; Cui *et al*, 2008; Ntim, 2009; Bozec, 2010; Price *et al*, 2011) but did not include ownership data. For example, Price *et al* (2011), in an approach

similar to that employed in this thesis, used compliance data from the Mexican code of best practices to investigate the impact of governance reform on performance and transparency. They did not include ownership as control variable in their empirical analysis. In this respect, future research may include ownership as a control variable in the empirical analysis in order to capture the importance of different ownership structures in an agency theory analysis.

Fourth, the thesis focuses on firms listed on the GSE. It did not cover unlisted firms in Ghana. Similarly, the executive and non-executive directors selected as respondents to the questionnaire are the directors of the firms listed on the GSE. The thesis did not seek the opinions of directors of unlisted firms in Ghana. In this respect, corporate governance data are mainly from firm annual reports and therefore the degree of compliance with the Ghanaian Code provisions in this thesis should be considered as absolute compliance with the Ghanaian Code provisions based on firm annual reports. However, there are other media where a listed firm may disclose its corporate governance practices such as the firm's website and regulatory report to SECG. Essentially, the thesis did not consider corporate governance practices disclosed in other media. Fifth, and given the likely prejudices and personal circumstances, the directors' responses to the questionnaire may have been subjected to their personal biases and possible influences. Also, and given the respondents time constraint, they failed to answer questions in section D of the questionnaire which would have provided other qualitative information which would have been useful for the findings of the thesis.

11.6 SUGGESTIONS FOR FUTURE RESEARCH

This thesis identifies a number of areas for future research. First, and as has already been indicated, it only examines firms that are listed on the GSE; future research could expand this to unlisted Ghanaian firms. This could

create a platform for a comparative analysis between listed and unlisted firms and also provide the opportunity for a larger sample. In relation to the directors' opinions, future research may use interview techniques to examine whether the adoption of corporate governance provisions is beneficial to firm performance in Ghana. This could also be extended by seeking the opinions of the institutional investors and financial analysts to enhance the findings in Ghana. Second, future research might want to refine the development of the *GCGI* by assigning weightings relative to the importance of each of the corporate governance provisions. Third, future research can investigate the determinants of the degree of compliance with the Ghanaian Code provisions, as well as the relationship between the adoption of the Ghanaian Code provisions and agency costs among Ghanaian listed firms. Fourth, the definitions of some of the variables used in this thesis could be improved. For example, the proportion of non-executive directors could be separated into *independent* and *non-independent* directors. Finally, this thesis uses accounting-based (ROA and ROE) and market-based (Q-ratio) firm performance measures because they are proxies frequently used in corporate governance research. A future research into other measures such as return on capital employed (ROCE) and share price may be necessary to investigate the relationship between corporate governance and firm performance in Ghana.

11.7 CHAPTER SUMMARY

This chapter has provided conclusions to the thesis. First, it has presented an overview of the objectives of the thesis. In this regard, four main objectives were highlighted to include the following: (1) to measure the degree of compliance with the Ghanaian Code provisions among Ghanaian listed firms, (2) to empirically investigate the relationship between the degree of compliance of the Ghanaian Code provisions and firm performance, (3) to empirically evaluate the perceptions of the directors of the Ghanaian listed

firms on the adoption of the Ghanaian Code provisions and its benefit to their firm's performance, and (4) to critically examine whether the use of multiple governance data has the potential to affect the results of the relationship between corporate governance and firm performance. These objectives are achieved given the opportunity provided by the data collected from the firm's annual reports and the directors of the Ghanaian listed firms over the study period.

Second, the chapter attempted to summarise the key results of the thesis. In this respect, the results based on the degree of compliance with the Ghanaian Code provisions suggest significant improvement over the period under investigation, evidence supported by the responses from directors. However, the regression results from the annual report data relative to the responses from directors on the selective adoption of the five specific governance provisions benefit to firm performance are generally mixed, and in most cases the regression results indicating a statistically weak impact on firm performance in Ghana. By contrast, the *GCGI* is found to have a statistically significant and positive impact on firm performance, suggesting that better governed firms, on average, tend to perform better than the poorly governed firms in Ghana. Essentially, this evidence is validated by the responses from directors that the full adoption of the Ghanaian Code provisions is beneficial to their firm's performance instead of the selective adoption of its specific governance provisions.

Third, the chapter has highlighted the contributions of the thesis. In this regard, the thesis makes extensions to the existing corporate governance research and a numerous new contributions to knowledge as follows: (1) it fills the gap in the extant literature by providing for the first time the degree of compliance with the Ghanaian Code provisions during pre 2003 and post 2003 periods, (2) it provides the first direct evidence of the relationship between corporate governance practices and firm performance in the context of pre 2003 and post 2003 introduction of the Ghanaian Code, as well as

systematically addressing potential problems of endogeneity, (3) it offers the first direct evidence of the directors opinions on the adoption of corporate governance provisions and their firm's performance, (4) it makes for the first time a comparison of results based on the regression estimates and the responses from the directors on the benefit of the adoption of the Ghanaian Code provisions, (5) it provides for the first time an integration of the extensively used specific governance mechanisms in the study of governance-performance relationship, governance index-performance relationship and the directors opinions on corporate governance and firm performance in the same study and context, and (6) it has shown a number of policy implications from the findings which include the significant improvement in the degree of compliance which is a positive sign for regulators' effort, the need to review the Ghanaian Code by an independent committee and the consensus by the regression results and the responses from directors that better-governed firms, on average, perform better than poorly-governed firms in Ghana.

Fourth, the chapter has discussed the limitations of the thesis. It has highlighted data limitations as the main focus in this thesis. In particular, the sample size used is limited to firms listed on the GSE and the compromise between the limitations of manual collection and the need to have adequate data for the panel data analysis makes it extremely labour-intensive. Also, the development of the *GCGI* based on an un-weighted approach may not reflect the relative importance of each of the different corporate governance provisions. Arguably, and given the likely prejudices and personal circumstances, the responses from the directors may have been subject to their personal biases and influences.

Finally, the chapter has provided suggestions for future research. In this regard, future research may expand the investigation of firms listed on the GSE to include unlisted firms which could create a platform for a comparative analysis between listed and unlisted firms. Future research might also want

to refine the development of the *GCGI* by assigning weights relative to the importance of the corporate governance provisions. In relation to the directors' opinions, future research may use interview techniques which could also be extended to institutional investors and financial analysts to examine whether the adoption of corporate governance provisions is beneficial to firm performance. Essentially, the determinants of the degree of compliance with the Ghanaian Code provisions, as well as the relationship between the adoption of the Ghanaian Code provisions and agency costs among Ghanaian listed firms may require future investigation. Given the firm performance variables used in this thesis, future research may use alternative accounting-based and market-based firm performance variables to investigate the relationship between corporate governance and firm performance in Ghana.

REFERENCES

ABBOTT, L.J., PARKER, S. and PETERS, G.F., 2004. Audit committee characteristics and restatements. *Auditing: A Journal of Practice & Theory,* 23(1), pp. 69-87

ABDO, A. and FISHER, G., 2007. The impact of reported corporate governance disclosure on the financial performance of companies listed on the JSE. *Investment Analysts Journal,* 66, pp. 43-56

ABDULLAH, S.N., 2004. Board composition, CEO duality and performance among Malaysian listed companies. *Corporate Governance,* 4(4), pp. 47-61

ABOAGYE, A.Q. and OTIEKU, J., 2010. Are Ghanaian MFIs' performance associated with corporate governance? *Corporate Governance,* 10(3), pp. 307-320

ABOR, J. and BIEKPE, N., 2007. Corporate governance, ownership structure and performance of SMEs in Ghana: implications for financing opportunities. *Corporate Governance,* 7(3), pp. 288-300

ADAMS, R.B. and MEHRAN, H., 2012. Bank board structure and performance: Evidence for large bank holding companies. *Journal of Financial Intermediation,* 21, pp. 243-267

ADDA, E. and CONSULTING, L., 2006. EXPLORING THE LEGAL FRAMEWORK FOR BUSINESS AND ETHICAL PRACTICES IN GHANA. *Journal of Legal, Ethical and Regulatory Issues,* 9(2), pp. 69-80

AGGARWAL, R., EREL, I., STULZ, R.M. and WILLIAMSON, R., 2007. Do US firms have the best corporate governance? A cross-country examination of the relation between corporate governance and shareholder wealth. *NBER Working Paper.*

AGRAWAL, A. and KNOEBER, C.R., 1996. Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis,* 31(03), pp. 377-397

AGUILERA, R.V. and CUERVO CAZURRA, A., 2009. Codes of good governance. *Corporate Governance: An International Review,* 17(3), pp. 376-387

AMMANN, M., OESCH, D. and SCHMID, M.M., 2011. Corporate governance and firm value: International evidence. *Journal of Empirical Finance,* 18(1), pp. 36-55

ARCOT, S.R. and BRUNO, V., 2007. *One size does not fit all, after all: Evidence from corporate governance.* [Online] Available from: http://old.nhh.no/for/seminars/finance/2007-spring/170107.pdf [Accessed 4th March 2009]

ARMSTRONG, P., SEGAL, N. and DAVIS, B., 2006. Corporate Governance in South Africa', in Mallin, C. A. (Ed.), Handbook on International Corporate Governance.

ASX CORPORATE GOVERNANCE COUNCIL, 2003. *Principles of good corporate governance and best practice recommendations.* Australian Stock Exchange Limited.

BALASUBRAMANIAN, N., BLACK, B.S. and KHANNA, V., 2010. The Relation between Firm-Level Corporate Governance and Market Value: a Study of India. *Emerging Markets Review,* 11, pp. 319-340

BALIGA, B.R., MOYER, R.C. and RAO, R.S., 1996. CEO duality and firm performance: what's the fuss? *Strategic Management Journal,* 17(1), pp. 41-53

BASSEN, A., PRIGGE, S. and ZÖLLNER, C., 2008. *Behind broad corporate governance aggregates: A first look at single provisions of the German corporate governance code.* [Online] Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=965355 [Accessed 12th December 2009]

BAUER, G., GUNSTER, N. and OTTEN, R., 2004. Empirical Evidence on Corporate Governance in Europe: The Effect on Stock Returns, Firm Value and Performance'. *Journal of Asset Management,* 5(2), pp. 91-104

BAUER, R., EICHHOLTZ, P. and KOK, N., 2010. Corporate governance and performance: The REIT effect. *Real Estate Economics,* 38(1), pp. 1-29

BEASLEY, M.S., 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. *Accounting Review*, pp. 443-465

BEASLEY, M.S., CARCELLO, J.V., HERMANSON, D.R. and LAPIDES, P.D., 2000. Fraudulent financial reporting: Consideration of industry traits and corporate governance mechanisms. *Accounting Horizons,* 14(4), pp. 441-454

BEBCHUK, L., COHEN, A. and FERRELL, A., 2009. What matters in corporate governance? *Review of Financial Studies,* 22(2), pp. 783

BEINER, S., DROBETZ, W., SCHMID, M.M. and ZIMMERMANN, H., 2006. An integrated framework of corporate governance and firm valuation. *European Financial Management,* 12(2), pp. 249-283

BENNEDSEN, M., KONGSTED, H.C. and NIELSEN, K.M., 2008. The causal effect of board size in the performance of small and medium-sized firms. *Journal of Banking & Finance,* 32(6), pp. 1098-1109

BENNETT, R. and ROBSON, P., 2004. The role of boards of directors in small and medium-sized firms. *Journal of Small Business and Enterprise Development,* 11(1), pp. 95-113

BENSTON, G.J., 1985. The self-serving management hypothesis: Some evidence. *Journal of Accounting and Economics,* 7(1), pp. 67-84

BERLE, A.A. and MEANS, G.C., 1932. *The modern corporation and private property.* Transaction Pub.

BHAGAT, S. and BOLTON, B., 2008. Corporate governance and firm performance. *Journal of Corporate Finance,* 14(3), pp. 257-273

BHAGAT, S. and BOLTON, B.J., 2009. *Sarbanes-Oxley, governance and performance.* [Online] Available from: http://leeds.colorado.edu/asset/burridge/sarbanesoxleygovernanceperformance.pdf; [Accessed 3rd October 2010]

BLACK, B.S., JANG, H. and KIM, W., 2006b. Does corporate governance predict firms' market values? Evidence from Korea. *Journal of Law, Economics, and Organization,* 22(2), pp.366-413

BLACK, B. and KIM, W., 2012. The effect of board structure on firm value: A multiple identification strategies approach using Korean data. *Journal of Financial Economics,* 104(1), pp. 203-226

BLACK, B.S., KIM, W., JANG, H. and PARK K.S., 2010. How corporate governance affects firm value: evidence on channels from Korea. [Online] Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1365945 [Accessed 3rd May 2011]

BLACK, B.S., LOVE, I. and RACHINSKY, A., 2006a. Corporate governance indices and firms' market values: Time series evidence from Russia. *Emerging Markets Review,* 7(4), pp. 361-379

BLACK, B., 2001. The corporate governance behavior and market value of Russian firms. *Emerging Markets Review,* 2(2), pp. 89-108

BLAIR, M.M., 1995. *Ownership and control: Rethinking corporate governance for the twenty-first century.* Brookings Institution Press.

BOATRIGHT, J.R., 1999. *Ethics in finance.* Blackwell Pub.

BOKPIN, G.A. and ISSHAQ, Z., 2009. Corporate governance, disclosure and foreign share ownership on the Ghana Stock Exchange. *Managerial Auditing Journal,* 24(7), pp. 688-703

BÖRSCH SUPAN, A. and KÖKE, J., 2002. An applied econometricians' view of empirical corporate governance studies. *German Economic Review,* 3(3), pp. 295-326

BOYD, B.K., 1995. CEO duality and firm performance: A contingency model. *Strategic Management Journal,* 16(4), pp. 301-312

BOYD, B.K., HOWARD, M. and CARROLL, W.O., 1997. CEO duality and firm performance: an international comparison. *Strategy, Structure and Style. Chichester: John Wiley & Sons,* pp. 23–39

BOZEC, R., 2005. Boards of directors, market discipline and firm performance. *Journal of Business Finance & Accounting,* 32(9-10), pp. 1921-1960

BOZEC, R., DIA, M. and BOZEC, Y., 2010. Governance–Performance Relationship: A Re examination Using Technical Efficiency Measures. *British Journal of Management,* 21(3), pp. 684-700

BREUSCH, T.S. and PAGAN, A.R., 1980. The Lagrange multiplier test and its applications to model specification in econometrics. *The Review of Economic Studies,* 47(1), pp. 239-253

BRICKLEY, J.A., COLES, J.L. and JARRELL, G., 1997. Leadership structure: Separating the CEO and Chairman of the Board1. *Journal of Corporate Finance,* 3(3), pp. 189-220

BROWN, L.D. and CAYLOR, M.L., 2006. Corporate governance and firm valuation. *Journal of Accounting and Public Policy,* 25(4), pp. 409-434

BRUNO, V. and CLAESSENS, S., 2010. Corporate Governance and Regulation: can there be too much of a good thing? *Journal of Financial Intermediation,* 19, pp. 461-482

BUCKLAND, R., 2001. UK IPO Board Structures and Post-issue Performance. Working Paper, University of Aberdeen.

CADBURY COMMITTEE, 1992. *Report of the Committee on the Financial Aspects of Corporate Governance, London, Gee Publishing.*

CARCELLO, J.V., HERMANSON, D.R. and NEAL, T.L., 2002. Disclosures in Audit Committee Charters and Reports. *Accounting Horizons,* 16(4), pp. 291-305

CARCELLO, J.V., HERMANSON, D.R. and NEAL, T.L., RILEY Jr, R.D., 2002. Board characteristics and audit fees. *Contemporary Accounting Research,* 19(3), pp. 365-384

CARCELLO, J.V. and NEAL, T.L., 2000. Audit committee composition and auditor reporting. *The Accounting Review,* 75(4), pp. 453-467

CBI/TOUCHE ROSS, 1995. *Survey on corporate governance.* London: Touche Ross.

CHEN, A., KAO, L., TSAO, M. and WU, C., 2007. Building a corporate governance index from the perspectives of ownership and leadership for firms in Taiwan. *Corporate Governance: An International Review,* 15(2), pp. 251-261

CHEN, C.W., LIN, J.B. and YI, B., 2008. CEO duality and firm performance– an endogenous issue. *Corporate Ownership & Control,* 6(1), pp. 58-65

CHEN, K.C.W., CHEN, Z. and WEI, K., 2009. Legal protection of investors, corporate governance, and the cost of equity capital. *Journal of Corporate Finance,* 15(3), pp. 273-289

CHENG, S., 2008. Board size and the variability of corporate performance. *Journal of Financial Economics,* 87(1), pp. 157-176

CHENG, S., EVANS, J.H. and NAGARAJAN, N.J., 2008. Board size and firm performance: the moderating effects of the market for corporate control. *Review of Quantitative Finance and Accounting,* 31(2), pp. 121-145

CHENHALL, R.H. and MOERS, F., 2007. Endogeneity: A reply to two different perspectives. *European accounting review,* 16(1), pp. 217-221

CHEUNG, Y.L, JIANG, P., LIMPAPHAYOM, P. and LU, T., 2010. Corporate governance in China: a step forward. *European Financial Management,* 16(1), pp. 94-123

CHEUNG, Y.L, THOMAS, C.J., LIMPAPHAYOM, P. and ZHOU, L., 2007. Do investors really value corporate governance? Evidence from the Hong Kong market. *Journal of International Financial Management & Accounting,* 18(2), pp. 86-122

CHIDAMBARAN, N.K., PALIA, D. and ZHENG, Y., 2006. Does better corporate governance'cause'better firm performance? *Unpublished working paper*. [Online] Available from: http://www.isb.edu/ISBWEB/ISBCMS/File/DoesBetterCorporateGovernance.pdf [Accessed on 10th January 2011]

CHO, D.S. and KIM, J., 2007. Outside directors, ownership structure and firm profitability in Korea. *Corporate Governance: An International Review,* 15(2), pp. 239-250

CHOI, S.H., FRYE, M.B. and YANG, M., 2008. Shareholder rights and the market reaction to Sarbanes-Oxley. *The Quarterly Review of Economics and Finance,* 48(4), pp. 756-771

CLACHER, I., DORIYE, E.J. and HILLIER, D., 2008. *Does corporate governance matter? New evidence from the United Kingdom.* [Online] Available from: http://69.175.2.130/~finman/Turin/Papers/cdh011208.pdf [Accessed 3rd June 2010]

COCHRAN, P.L. and WOOD, R.A., 1984. Corporate social responsibility and financial performance. *Academy of Management Journal,* 27, pp. 42-56

COLES, J.L., DANIEL, N.D. and NAVEEN, L., 2008. Boards: Does one size fit all. *Journal of Financial Economics,* 87(2), pp. 329-356

COLES, J.W., MCWILLIAMS, V.B. and SEN, N., 2001. An examination of the relationship of governance mechanisms to performance. *Journal of Management,* 27(1), pp. 23-28

COMBINED CODE, 1998. *Corporate Governance, The London Stock Exchange Limited, London: Gee & Co.ltd.*

COMBINED CODE, 2003. The combined code on corporate governance. *London: Financial Reporting Council.*

COMBINED CODE, 2006. *The combined code on corporate governance.* Financial Reporting Council.

COMBINED CODE, 2008. *The combined code on corporate governance.* Financial Reporting Council.

COMMONWEALTH ASSOCIATION FOR CORPORATE GOVERNANCE. 1999. *Principles for Corporate Governance in the Commonwealth: Towards global competitiveness and economic accountability*. Marlborough, New Zealand: Commonwealth Association for Corporate Governance.

CONYON, M.J., 1994. Corporate governance changes in UK companies between 1988 and 1993. *Corporate Governance: An International Review,* 2(2), pp. 87-100

CONYON, M.J. and NICOLITSAS, D., 1998. Does the market for top executives work? CEO pay and turnover in small UK companies. *Small Business Economics,* 11(2), pp. 145-154

CONYON, M.J. and PECK, S.I., 1998a. Board size and corporate performance: evidence from European countries. *The European Journal of Finance,* 4(3), pp. 291-304

CONYON, M.J. and PECK, S.I., 1998b. BOARD CONTROL, REMUNERATION COMMITTEES, AND TOP MANAGEMENT COMPENSATION. *Academy of Management Journal,* 41(2), pp. 146-157

CORE, J.E., 2001. A review of the empirical disclosure literature: discussion. *Journal of Accounting and Economics,* 31(1), pp. 441-456

CORE, J.E., GUAY, W.R. and RUSTICUS, T.O., 2006. Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations. *The Journal of Finance,* 61(2), pp. 655-687

COSH, A., GUEST, P. and HUGHES, A., 2008. 10. UK corporate governance and takeover performance. *The Economics of Corporate Governance and Mergers,* pp. 226-265

COSH, A. and HUGHES, A., 1997a. The Changing Anatomy of Corporate Control and the Market for Executives in the United Kingdom. *Journal of Law and Society*, pp. 104-123

COSH, A. and HUGHES, A., 1997b. Executive remuneration, executive dismissal and institutional shareholdings. *International Journal of Industrial Organization,* 15(4), pp. 469-492

COUGHLAN, A.T. and SCHMIDT, R.M., 1985. Executive compensation, management turnover, and firm performance: An empirical investigation. *Journal of Accounting and Economics,* 7(1), pp. 43-66

CREMERS, K.J. and NAIR, V.B., 2005. Governance mechanisms and equity prices. *The Journal of Finance,* 60(6), pp. 2859-2894

CUI, T.Q., EVANS, E., WRIGHT, S. and CROWE, S., 2008. *Have the objectives of the ASX recommendations on good corporate governance been achieved?* [Online] Working Paper, Macquarie University. Available from: http://www.newcastle.edu.au/Resources/Faculties/Faculty%20of%20Business%20and%20Law/Seminars/Business%20Seminar%20Series%202007/BusSeminarPaper18092007.pdf [Accessed 15th February 2010]

DAHYA, J., LONIE, A.A. and POWER, D.M., 1996. The case for separating the roles of chairman and CEO: an analysis of stock market and accounting data. *Corporate Governance: An International Review,* 4(2), pp. 71-77

DAHYA, J., MCCONNELL, J. and TRAVLOS, N.G., 2002. The Cadbury Committee, Corporate Performance and Management Turnover, *Journal of Finance*, 57(1), pp. 461-483

DAHYA, J. and MCCONNELL, J.J., 2009. Board composition, corporate performance, and the Cadbury Committee recommendation. *Journal of Financial and Quantitative Analysis,* 42(03), pp. 535-564

DAILY, C.M. and DALTON, D.R., 1992. The relationship between governance structure and corporate performance in entrepreneurial firms. *Journal of Business Venturing,* 7(5), pp. 375-386

DAILY, C.M. and DALTON, D.R., 1993. Board of Directors Leadership and Structure: Control and Performance Implications. *Entrepreneurship: Theory and Practice,* 17(3), pp. 65-81

DAINES, R.M., GOW, I.D. and LARCKER, D.F., 2010. Rating the ratings: How good are commercial governance ratings? *Journal of Financial Economics,* 98, pp. 439-461

DALTON, D.R., DAILY, C.M., ELLSTRAND, A.E. and JOHNSON, J.L., 1998. Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal,* 19(3), pp. 269-290

DEDMAN, E., 2002. The Cadbury Committee recommendations on corporate governance–a review of compliance and performance impacts. *International Journal of Management Reviews,* 4(4), pp. 335-352

DEMIRAG, I., SUDARSANAM, S. and WRIGHT, M., 2000. Corporate Governance: An Overview and Research Agenda, *British Accounting Review*... 32, pp. 341-354

DEMIRAG, I. and TYLECOTE, A., 1992. The effects of organizational culture, structure and market expectations on technological innovation: a hypothesis. *British Journal of Management,* 3(1), pp. 7-20

374

DEY, A., ENGEL, E. and LIU, X., 2011. CEO and board chair roles: To split or not to split? *Journal of Corporate Finance,* 17(5), pp. 1595-1618

DIACON, S.R. and O'SULLIVAN, N., 1995. Does corporate governance influence performance? Some evidence from UK insurance companies. *International Review of Law and Economics,* 15(4), pp. 405-424

DONALDSON, L. and DAVIS, J.H., 1991. Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of Management,* 16(1), pp. 49-64

DROBETZ, W., SCHILLHOFER, A. and ZIMMERMANN, H., 2004. Corporate governance and expected stock returns: Evidence from Germany. *European Financial Management,* 10(2), pp. 267-293

DULEWICZ, V. and HERBERT, P., 2004. Does the composition and practice of boards of directors bear any relationship to the performance of their companies? *Corporate Governance: An International Review,* 12(3), pp. 263-280

DURNEV, A. and KIM, E., 2005. To steal or not to steal: Firm attributes, legal environment, and valuation. *The Journal of Finance,* 60(3), pp. 1461-1493

EISENBERG, T., SUNDGREN, S. and WELLS, M.T., 1998. Larger board size and decreasing firm value in small firms1. *Journal of Financial Economics,* 48(1), pp. 35-54

EISENHARDT, K.M., 1989. Agency theory: An assessment and review. *Academy of management review*, pp. 57-74

EL MEHDI, K., 2007. Empirical evidence on corporate governance and corporate performance in Tunisia. *Corporate Governance: An International Review,* 15(6), pp. 1429-1441

ELSAYED, K., 2007. Does CEO duality really affect corporate performance? *Corporate Governance: an international review,* 15(6), pp. 1203-1214

EPPS, R.W. and CEREOLA, S.J., 2008. Do institutional shareholder services (ISS) corporate governance ratings reflect a company's operating performance? *Critical Perspectives on Accounting,* 19(8), pp. 1135-1148

ERTUGRUL, M. and HEGDE, S., 2009. Corporate governance ratings and firm performance. *Financial Management,* 38(1), pp. 139-160

EZZAMEL, M. and WATSON, R., 2002. Pay comparability across and within UK boards: An empirical analysis of the cash pay awards to CEOs and other board members. *Journal of Management Studies,* 39(2), pp. 207-232

FACCIO, M. and LASFER, M.A., 1999. Managerial ownership, board structure and firm value: The UK evidence. *City University working paper*. [Online] Available from: https://webkuliah.unimedia.ac.id/ebook/files/owner-board.pdf [Accessed on 15 October 2009]

FALEYE, O., 2007. Classified boards, firm value, and managerial entrenchment. *Journal of Financial Economics,* 83(2), pp. 501-529

FAMA, E.F., 1980. Agency problems and the theory of the firm. *Journal of Political Economy*. (88), pp. 288-307

FAMA, E.F. and JENSEN, M.C., 1983a. Separation of ownership and control. *Journal of Law and Economics.* 26, pp. 301-325

FAMA, E. AND JENSEN, M., 1983b. Agency Problems and Residual Claims, Journal of Law and Economics. 26, pp. 327-349

FINANCIAL REPORTING COUNCIL, 2005. *FRC Review Endorses Turnbull Guidance.*

FODOR, A. and DIAVATOPOULOS, D., 2010. *Does corporate governance matter for equity returns?* [Online] Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1546645 [Accessed 20th August 2011]

FORKER, J.J., 1992. Corporate governance and disclosure quality. *Accounting and Business Research,* 22(86), pp. 111-124

FOX, C.M. and BOARDLEY, K., 1998. Cost-effectiveness of follow-up strategies in improving the response rate of mail surveys. *Industrial Marketing Management,* 27(2), pp. 127-133

GARAY, U. and GONZÁLEZ, M., 2008. Corporate governance and firm value: The case of Venezuela. *Corporate Governance: An International Review,* 16(3), pp. 194-209

GHANA STOCK EXCHANGE, 1993. *Ghana Stock Exchange handbook.* Marketing Dept. The Stock Exchange Library.

GHANA STOCK EXCHANGE, 2005. *Fact Book: Profiles and Financials of Listed Companies.* The Stock Exchange Library.

GHANA STOCK EXCHANGE, 2010. *Fact Book: Profiles and Financials of Listed Companies.* The Stock Exchange Library.

GHANA STOCK EXCHANGE, 1990. *Guidelines and steps for listing regulation 1990 (LI 1509).*

GHANA STOCK EXCHANAGE, 2006. *Revised listing Rules 2006.*

GHANA STOCK EXCHANAGE, 2011. A list of the Ghanaian listed firms. [Online] Available from: www.gse.co.uk [Accessed 6th January 2011]

GHOSH, S., 2006. Do board characteristics affect corporate performance? Firm-level evidence for India. *Applied Economics Letters,* 13(7), pp. 435-443

GILLAN, S.L., 2006. Recent developments in corporate governance: an overview. *Journal of Corporate Finance,* 12(3), pp. 381-402

GOODSTEIN, J., GAUTAM, K. and BOEKER, W., 2006. The effects of board size and diversity on strategic change. *Strategic Management Journal,* 15(3), pp. 241-250

GOMPERS, P., ISHII, J. and METRICK, A., 2003. Corporate governance and equity prices. *Quarterly Journal of Economics,* 118(1), pp. 107-155

GREENBURY COMMITTEE, 1995. Directors' Remuneration: Report of A Study Group. *London: Gee & Co. Ltd*

GREENE, W.H., 2012. *Econometric analysis.* 7th ed. International Edition: Prentice hall.

GRUSZCZYNSKI, M., 2007. *Corporate governance ratings and the performance of listed companies in Poland.* [Online] IDEAS. Available from: http://ideas.repec.org/p/wse/wpaper/4.html [Accessed 15th August 2009]

GUEST, P.M., 2009. The impact of board size on firm performance: evidence from the UK. *The European Journal of Finance,* 15(4), pp. 385-404

GUJARATI, D., 1995. *Basic Econometrics.* 3rd ed. New York: McGraw-Hill.

GUILLET, B.D., SEO, K., KUCUKUSTA, D. and LEE, S., 2012. CEO duality and firm performance in the US restaurant industry: Moderating role of restaurant type. *International Journal of Hospitality Management, in press*

GUO, Z. and KGA, U.K., 2012. Corporate Governance and Firm Performance of Listed Firms in Sri Lanka. *Procedia-Social and Behavioral Sciences,* 40, pp. 664-667

GUPTA, M. and FIELDS, L.P., 2009. Board independence and corporate governance: evidence from director resignations. *Journal of Business Finance & Accounting,* 36(1 & 2), pp. 161-184

GUPTA, P.P., KENNEDY, D.B. and WEAVER, S.C., 2009. Corporate Governance and Firm Value: Evidence from Canadian Capital Markets. *Corporate Ownership and Control,* 6(3), pp. 293-307

HAMPEL COMMITTEE, 1998. *The Final Report, Committee on Corporate Governance and Gee Professional Publishing, London.*

HANIFFA, R. and HUDAIB, M., 2006. Corporate governance structure and performance of Malaysian listed companies. *Journal of Business Finance & Accounting,* 33(7   8), pp. 1034-1062

HAUSMAN, J.A., 1978. Specification tests in econometrics. *Econometrica: Journal of the Econometric Society*, pp. 1251-1271

HEALY, P.M. and PALEPU, K.G., 2001. Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature, *Journal of Accounting and Economics*. 31(1-3), pp. 405-440

HENRY, D., 2008. Corporate Governance Structure and the Valuation of Australian Firms: Is There Value in Ticking the Boxes? *Journal of Business Finance & Accounting,* 35(7   8), pp. 912-942

HERMALIN, B.E. and WEISBACH, M., 2003. Board of Directors as an Endogenously Determined Institution: A Survey of Economic Literature. *Economic Policy Review* 9, pp. 7-26.

HIGGS COMMITTEE, 2003. *Review of the Role and Effectiveness of Non-Executive Directors, Department of Trade and Industry, London.*

HIMMELBERG, C., 2002. Measuring the real effects of corporate governance: A note for the GCGF research meeting, April 5, 2002, Washington. *Unpublished Working Paper, Columbia University.*

HO, C.A. and WILLIAMS, S.M., 2003. International comparative analysis of the association between board structure and the efficiency of value added by a firm from its physical capital and intellectual capital resources. *The International Journal of Accounting,* 38(4), pp. 465-491

HSIAO, C., 2003. *Analysis of panel data.* Cambridge University Press.

HUSSEY, J. and HUSSEY, R., 1997. *Business Research Methods.* London: MacMillan.

ISKANDER, M.R. and CHAMLOU, N., 2000. Corporate Governance: A Framework for Implementation. World Bank Group, Washington DC, USA.

ISSHAQ, Z., BOKPIN, G.A. and ONUMAH, J.M., 2009. Corporate governance, ownership structure, cash holdings, and firm value on the Ghana Stock Exchange. *Journal of Risk Finance,* 10(5), pp. 488-499

ITTNER, C.D. and LARCKER, D.F., 2003. Coming up short on nonfinancial performance measurement. *Harvard business review,* 81(11), pp. 88-95

JACKLING, B. and JOHL, S., 2009. Board structure and firm performance: Evidence from India's top companies. *Corporate Governance: An International Review,* 17(4), pp. 492-509

JAVED, A.Y. and IQBAL, R., 2007. *Relationship between corporate governance indicators and firm value: A case study of Karachi Stock Exchange.* [Online] Munich Personal RePEc Archive. Available from: http://mpra.ub.uni-muenchen.de/2225/1/MPRA_paper_2225.pdf [Accessed 10th August 2009]

JENKINS-FERRETT, K., 2001. *Corporate governance in South Africa: Perceptions, Practices and Priorities.* KPMG.

JENSEN, M., 1993. "The Modern Industrial Revolution: Exit and the Failure of Internal Control Systems,". *Journal of Finance,* 48(3), pp. 831-880

JENSEN, M.C., 1986. Agency Costs of free Cash Flow, Corporate Finance and Takeovers, *American Economic Review*. 76, pp. 323-329

JENSEN, M.C. and MECKLING, W.H., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics,* 3(4), pp. 305-360

JENSEN, M. and MURPHY, K., 1990. Performance pay and top management incentives. *Journal of Political Economy,* 98(2), pp. 225-264

JENSEN, M.C. and RUBACK, R.S., 1983. The market for corporate control: The scientific evidence. *Journal of Financial Economics,* 11(1), pp. 5-50

JIRAPORN, P., SINGH, M. and LEE, C.I., 2009. Ineffective corporate governance: Director busyness and board committee memberships. *Journal of Banking & Finance,* 33(5), pp. 819-828

JOHN, K. and SENBET, L.W., 1998. Corporate governance and board effectiveness. *Journal of Banking & Finance,* 22(4), pp. 371-403

JOHNSTON, J., 2005. Reward design and CEO succession in the UK. *Applied Economics,* 37(13), pp. 1535-1541

KAJOLA, S.O., 2008. Corporate Governance and Firm Performance: The Case of Nigerian Listed Firms. *European Journal of Economics, Finance and Administrative Sciences,* 14, pp. 16-28

KARAMANOU, I. and VAFEAS, N., 2005. The association between corporate boards, audit committees, and management earnings forecasts: An empirical analysis. *Journal of Accounting Research,* 43(3), pp. 453-486

KIEL, G.C. and NICHOLSON, G.J., 2003. Board composition and corporate performance: How the Australian experience informs contrasting theories of corporate governance. *Corporate Governance: An International Review,* 11(3), pp. 189-205

KING REPORT, 1994. *Report on Corporate Governance for South Africa, Parklands: Institute of Directors.*

KING REPORT, 2002. Revised Report on Corporate Governance for South Africa, Parklands: Institute of Directors.

KING COMMITTEE ON CORPORATE GOVERNANCE, 2009. *King Report on Corporate Governance for South Africa: Executive Summary.* Institute of Directors in Southern Africa.

KLAPPER, L.F. and LOVE, I., 2004. Corporate governance, investor protection, and performance in emerging markets. *Journal of Corporate Finance,* 10(5), pp. 703-728

KLEIN, A., 1998. Firm performance and board committee structure. *Journal of Law and Economics,* 41(1), pp. 275-303

KLEIN, A., 2002. Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics,* 33(3), pp. 375-400

KLEIN, P., SHAPIRO, D. and YOUNG, J., 2005. Corporate governance, family ownership and firm value: the Canadian evidence. *Corporate Governance: An International Review,* 13(6), pp. 769-784

KLEVMARKEN, N.A., 1989. Introduction. *European Economic Review,* 33(2-3), pp. 523-529

KOUWENBERG, R., 2006. *Does voluntary corporate governance code adoption increase firm value in emerging markets? Evidence from Thailand.* [Online] Mahidol University Working Paper Series. Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=958580 [Accessed 10th January 2009]

KRAVCHENKO, N. and YUSUPOVA, A., 2005. *Corporate governance and firms valuations: Case of Russia.* [Online] Social Science Research Network. Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=673182 [Accessed 30th January 2009]

KYEREBOAH-COLEMAN, A. and AMIDU, M., 2008. The Link Between Small Business Governance and Performance: The Case of the Ghanaian SME Sector. *Journal of African Business,* 9(1), pp. 121-143

KYEREBOAH-COLEMAN, A. and BIEKPE, N., 2006a. The relationship between board size, board composition, CEO duality and firm performance: experience from Ghana. *Corporate Ownership and Control,* 4(2), pp. 114-122

KYEREBOAH-COLEMAN, A. and BIEKPE, N., 2006b. DO BOARDS AND CEOs MATTER FOR BANK PERFORMANCE? A comparative analysis of banks in Ghana. *Journal of Corporate Ownership and Control,* 4(1), pp. 119–126

KYEREBOAH-COLEMAN, A. and OSEI, K.A., 2008. Outreach and profitability of microfinance institutions: the role of governance. *Journal of Economic Studies,* 35(3), pp. 236-248

LABELLE, R., 2002. *The statement of corporate governance practices (SCGP), a voluntary disclosure and corporate governance perspective.* [Online] Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=317519 [Accessed 12th July 2010]

LAING, D. and WEIR, C.M., 1999. Governance structures, size and corporate performance in UK firms. *Management Decision,* 37(5), pp. 457-464

LAM, T.Y. and LEE, S.K., 2012. Family ownership, board committees and firm performance: evidence from Hong Kong. *Corporate Governance,* 12(3), pp. 299-316

LARCKER, D.F., 2003. Discussion of "are executive stock options associated with future earnings?". *Journal of Accounting and Economics,* 36(1-3), pp. 91-103

LARCKER, D.F., RICHARDSON, S.A. and TUNA, A.I., 2007. Corporate governance, accounting outcomes, and organizational performance. *Accounting Review,* 82(4), pp. 963-1008

LARCKER, D.F. and RUSTICUS, T.O., 2007. Endogeneity and empirical accounting research. *European Accounting Review,* 16(1), pp. 207-215

LARCKER, D.F. and RUSTICUS, T.O., 2010. On the use of instrumental variables in accounting research. *Journal of Accounting and Economics,* 49(3), pp. 186-205

LASFER, M.A., 2004. On the monitoring role of the board of directors: The case of the adoption of Cadbury recommendations in the UK. *Advances in Financial Economics,* 9, pp. 287-326

LEAL, R. and CARVALHAL DA SILVA, A., 2005. *Corporate governance and value in Brazil (and in Chile).* [Online] Social Science Research Network. Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=726261 [Accessed 2nd February 2009]

LEV, B. and SUNDER, S., 1979. Methodological issues in the use of financial ratios. *Journal of Accounting and Economics,* 1(3), pp. 187-210

LINCK, J.S., NETTER, J.M. and YANG, T., 2009. The effects and unintended consequences of the Sarbanes-Oxley Act on the supply and demand for directors. *Review of Financial Studies,* 22(8), pp. 3287-3328

LIPTON, M. and LORSCH, J.W., 1992. A modest proposal for improved corporate governance. *Business Lawyer,* 48, pp. 59-77

MAIN, B.G. and JOHNSTON, J., 1993. Remuneration committees and corporate governance. *Accounting and Business Research,* 23(91A), pp. 351-362

MAK, Y.T. and KUSNADI, Y., 2005. Size really matters: Further evidence on the negative relationship between board size and firm value. *Pacific-Basin Finance Journal,* 13(3), pp. 301-318

MALHERBE, S. and SEGAL, N., 2003. *South Africa: After Apartheid in Oman, C. P. (Ed.), corporate governance in development: the experiences of Brazil, Chile, India, and South Africa.* OECD.

MALLIN, C.A., 2004. *Corporate Governance, Oxford: Oxford University Press.*

MALLIN, C.A., 2007. *Corporate Governance, Oxford University Press.*

MANGENA, M., TAURINGANA, V. and CHAMISA, E., 2012. Corporate Boards, Ownership Structure and Firm Performance in an Environment of Severe Political and Economic Crisis. *British Journal of Management,* 23, pp. 23-41

MARRIS, R.L., 1964. *The economic theory of managerial capitalism.* Macmillan London.

MASHAYEKHI, B. and BAZAZ, M.S., 2008. Corporate governance and firm performance in Iran. *Journal of Contemporary Accounting & Economics,* 4(2), pp. 156-172

MCKNIGHT, P.J. and WEIR, C., 2009. Agency costs, corporate governance mechanisms and ownership structure in large UK publicly quoted companies: A panel data analysis. *The Quarterly Review of Economics and Finance,* 49(2), pp. 139-158

METRICK, A. AND ISHII, J., 2002. *Firm Level Corporate governance,* Paper presented at Global Corporate Governance Forum Research Network Meeting, Washington, D.C.

MILLS, T., 1999. *The econometric modeling of financial time series.* 2nd ed. Cambridge: Cambridge University Press.

MIYAJIMA, H., 2005. The performance effects and determinants of corporate governance reform in Japan. *Corporate governance in Japan: institutional change and organizational diversity, Masahiko Aoki, Gregory Jackson, Hideaki Miyajima, eds., June 2006.*

MONSEN JR, R.J. and DOWNS, A., 1965. A theory of large managerial firms. *The Journal of Political Economy*, pp. 221-236

MORCK, R., SHLEIFER, A. and VISHNY, R.W., 1988. Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics,* 20, pp. 293-315

MOREY, M., GOTTESMAN, A., BAKER, E. and GODRIDGE, B., 2009. Does better corporate governance result in higher valuations in emerging markets? Another examination using a new data set. *Journal of Banking & Finance,* 33(2), pp. 254-262

MOULTON, B.R., 1986. Random group effects and the precision of regression estimates. *Journal of Econometrics,* 32(3), pp. 385-397

MOULTON, B.R., 1987. Diagnostics for group effects in regression analysis. *Journal of Business & Economic Statistics*, 5, pp. 275-282

MOXEY, P., TRUST, C.A.E. and ASSOCIATION OF CHARTERED CERTIFIED ACCOUNTANTS, 2004. *Corporate governance and wealth creation.* Certified Accountants Educational Trust.

MURPHY, K.J., 1985. Corporate performance and managerial remuneration: An empirical analysis. *Journal of Accounting and Economics,* 7(1), pp. 11-42

NOR, F.M., SAID, R.M. and REDZUAN, H., 1999. Structure of ownership and corporate financial performance: A Malaysian case. *Malaysian Management Review,* (December), pp. 44-48

NTIM, C.G., 2009. *Internal corporate governance structures and firm financial performance: evidence from South African listed firms.* [Online] Doctor of Philosophy thesis, University of Glasgow. Available from: http://theses.gla.ac.uk/1282/01/2009ntimphd.pdf; [Accessed 24th 01/2011]

O'CONNELL, V. and CRAMER, N., 2010. The relationship between firm performance and board characteristics in Ireland. *European Management Journal,* 28(5), pp. 387-399

OCRAN, F., 2001. Current State of Corporate Governance in Ghana. *West Africa Regional Conference on Corporate Governance.* 28-30 January 2001. Accra, Ghana: Institute on Directors-Ghana.

OECD, 1999. *The organisation for economic co-operation principles of corporate governance.* [Online] Available from: http://www.ecgi.org/codes/documents/principles_en.pdf [Accessed 10th June 2008]

OECD., 2004. *The OECD principles of corporate governance.* [Online] Available from: http://www.oecd.org/dataoecd/32/18/31557724.pdf [Accessed 20th October 2008]

OPPENHEIM, A., Questionnaire design, interviewing and attitude measurement. 1992. *Pinter, London.*

O'SULLIVAN, N. and DIACON, S.R., 2003. Board composition and performance in life insurance companies. *British Journal of Management,* 14(2), pp. 115-129

O'SULLIVAN, N. and WONG, P., 1999. Board composition, ownership structure and hostile takeovers: Some UK evidence. *Accounting and Business Research,* 29(2), pp. 139-155

PADGETT, C. and SHABBIR, A., 2008. The UK Code of Corporate Governance: Link Between Compliance and Firm Performance. *Fourth European conference on management, leadership and governance.* Academic Conferences Limited.

PEARCE II, J.A. and ZAHRA, S.A., 1992. Board composition from a strategic contingency perspective. *Journal of Management Studies,* 29(4), pp. 411-438

PENG, M.W., ZHANG, S. and LI, X., 2007. CEO duality and firm performance during china's institutional transitions. *Management and Organization Review,* 3(2), pp. 205-225

PI, L. and TIMME, S.G., 1993. Corporate control and bank efficiency. *Journal of Banking & Finance,* 17(2-3), pp. 515-530

PONNU, C.H. and RAMTHANDIN, S., 2008. Governance and Performance: Publicly Listed Companies in Malaysia. *Journal of Business Systems, Governance and Ethics,* 3(1), pp. 35-53

BUSINESS and FINANCIAL TIMES, Jan 21-27 2002 cited in PREMPEH, H.K., 2002. Reforming Corporate Governance in Ghana-Part 1: The Private Sector. *CDD Briefing Paper.*

PRICE, R., ROMÁN, F.J. and ROUNTREE, B., 2011. The impact of governance reform on performance and transparency. *Journal of Financial Economics,* 99(1), pp. 76-96

RAJAN, R.G. and ZINGALES, L., 1995. What do we know about capital structure? Some evidence from international data. *Journal of Finance,* 5, pp. 1421-1460

RAPPAPORT, A., 1990. The staying power of the public corporation. *Harvard business review,* 68(1), pp. 96-104

RAYTON, B.A. and CHENG, S., 2004. Corporate Governance in the United Kingdom: Changes to the Regulatory Template and Company Practice from 1998-2002. *Code of Good Governance Around the World,* pp. 383-411

RECHNER, P.L. and DALTON, D.R., 1991. CEO duality and organizational performance: A longitudinal analysis, Strategic Management Journal. (2), pp. 155-160

REED, R.O., BUCHMAN, T. and WOBBEKIND, R., 2006. 2002 Sarbanes-Oxley Act: Privately-Held Companies Implementation Issues. *JOURNAL OF APPLIED BUSINESS RESEARCH,* 22(3), pp. 25-32

RENDERS, A., GAEREMYNCK, A. and SERCU, P., 2010. Corporate Governance Ratings and Company Performance: A Cross European Study. *Corporate Governance: An International Review,* 18(2), pp. 87-106

REPUBLIC OF GHANA COMPANIES CODE, 1963. Ghana, Companies Code (Act 179).

ROBERTS, M. and WHITED, T., 2011. *Endogeneity in empirical corporate finance.* [Online] Social Science Research Network. Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1748604 [Accessed 30th December 2011]

ROSS, S.A., 1973. The economic theory of agency: The principal's problem. *The American Economic Review,* 63(2), pp. 134-139

SANDA, A.U., MIKAILU, A.S. and GARBA, T., 2010. Corporate governance mechanisms and firms' financial performance in Nigeria. *Afro-Asian Journal of Finance and Accounting,* 2(1), pp. 22-39

Sarbanes - Oxley Act of 2002 Title III - Corporate Responsibility Self - Assessment 2002.

SAUNDERS, M., LEWIS, P. and THORNHILL, A., 2009. *Research methods for business students.* Prentice Hall.

SAXENA, A., 2009. *Role of corporate governance in corporate performance: A simple correlation analysis.* [Online] Initiative. Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1478870 [Accessed 20th June 2011]

Securities and Exchange Regulations 2003, LI 1728.

Securities Industry (Amendment) Act 2000 (Act 590). .

SECURITY AND EXCHANGE COMMISSION GHANA., 2003. Corporate Governance: Code of Best Practices, Ghana, Accra.

SEKARAN, U., 2006. *Research methods for business: A skill building approach.* Wiley-India.

SHABBIR, A., 2008. *To comply or not to comply: Evidence on changes and factors associated with the changes in compliance with the UK code of corporate governance.* [Online] Cranfield University School of Management. Available from: https://dspace.lib.cranfield.ac.uk/handle/1826/2482 [Accessed 5th January 2010]

SHLEIFER, A. and VISHNY, R.W., 1986. Large shareholders and corporate control. *The Journal of Political Economy*, pp. 461-488

SHI, C., 2005. International Corporate Governance Developments: The Path for China. *Australian Journal of Asian Law,* 71(1), pp. 60-94

SHORT, H. and KEASEY, K., 1999. Managerial ownership and the performance of firms: evidence from the UK. *Journal of Corporate Finance,* 5(1), pp. 79-101

SHORT, H., Keasey, K., Hull, A. and Wright, M., 1998. Corporate Governance, Accountability and Enterprise. *Corporate Governance: An International Review,* 6(3), pp. 151-165

SMITH COMMITTEE, 2003. *Report and Proposed Guidance on Audit Committees, The Financial Reporting Council, London.*

SONNENFELD, J.A., 2002. What makes great boards great? *Harvard business review,* 80(9), pp. 106-113

SPELLMAN, G.K. and WATSON, R., 2009. *Corporate governance ratings and corporate performance: An analysis of governance metrics international (GMI) ratings of US firms, 2003 to 2008.* [Online] Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1392313 [Accessed 5th September 2010]

STERNBERG, E., 1997. The Defects of Stakeholder Theory, Corporate Governance: An International Review. 5(1), pp. 3-10

SUN, J. and CAHAN, S., 2009. The effect of compensation committee quality on the association between CEO cash compensation and accounting performance. *Corporate Governance: An International Review,* 17(2), pp. 193-207

TOUDAS, K. and KARATHANASSIS, G., 2007. *Corporate governance and firm performance: Results from Greek firms.* [Online] Social Science Research Network. Available from: http://mpra.ub.uni-muenchen.de/6414/1/Corporate_Governance_final_20-12-07.pdf [Accessed 20th September 2009]

TSAMENYI, M., ENNINFUL-ADU, E. and ONUMAH, J., 2007. Disclosure and corporate governance in developing countries: evidence from Ghana. *Managerial Auditing Journal,* 22(3), pp. 319-334

TURNBULL COMMITTEE, 1999. *Report on Internal Control Guidance for Directors on the Combined Code, The institute of Chartered Accountants in England & Wales, London.*

UJUNWA, A., 2012. Board Characteristics and the Financial Performance of Nigerian Quoted Firms. *Corporate Governance,* 12(5), pp. 656-674

UK CORPORATE GOVERNANCE CODE, 2010. The UK corporate governance code. *London, Financial Reporting Council.*

VEFEAS, N., 1999a. Board meeting frequency and firm performance. *Journal of Financial Economics,* 53(1), pp. 113-142

VEFEAS, N., 1999b. The nature of board nominating committees and their role in corporate governance. *Journal of Business Finance & Accounting,* 26(1-2), pp. 199-225

VAFEAS, N. and THEODOROU, E., 1998. The relationship between board structure and firm performance in the UK. *The British Accounting Review,* 30(4), pp. 383-407

WALLACE, W.A., 1987. The economic role of the audit in free and regulated markets: A Review. *Research in Accounting Regulation,* 1, pp. 7-34

WALLACE, R.S.O. and MELLOR, C., 1988. Nonresponse bias in mail accounting surveys: a pedagogical note. *The British Accounting Review,* 20(2), pp. 131-139

WATTS, R.L. and ZIMMERMAN, J.L., 1983. Agency problems, auditing, and the theory of the firm: Some evidence. *Journal of Law and Economics,* 26(3), pp. 613-633

WEIR, C. and LAING, D., 2000. The performance-governance relationship: The effects of Cadbury compliance on UK quoted companies. *Journal of Management and Governance,* 4(4), pp. 265-281

WEIR, C., LAING, D. and MCKNIGHT, P.J., 2002. Internal and external governance mechanisms: their impact on the performance of large UK public companies. *Journal of Business Finance & Accounting,* 29(5 6), pp. 579-611

WESTPHAL, J.D. and ZAJAC, E.J., 1995. Who shall govern? CEO/board power, demographic similarity, and new director selection. *Administrative Science Quarterly*, pp. 60-83

WHITTINGTON, G., 1993. Corporate governance and the regulation of financial reporting. *Accounting and Business Research*, pp. 311-311

WILD, J.J., 1994. Managerial accountability to shareholders: Audit committees and the explanatory power of earnings for returns. *The British Accounting Review,* 26(4), pp. 353-374

WILLIAMSON, O.E., 1964. The economics of discretionary behavior: Managerial objectives in a theory of the firm.

WINTOKI, M.B., LINCK, J.S. and NETTER, J.M., 2012. Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics,* 105, pp. 581-606

WOOLDRIDGE, J.M., 2002. *Econometric analysis of cross section and panel data.* The MIT press.

WOOLDRIDGE, J.M., 2003. *Introductory econometrics: A modern approach.* South-Western Pub.

WOOLDRIDGE, J.M., 2006. *Introductory econometrics: A modern approach.* South-Western Pub.

WOOLDRIDGE, J.M., 2009. *Introductory econometrics: A modern approach.* South-Western Pub.

WORLD BANK, 2005. *Report on the Observance of Standards and Codes (ROSC). Corporate Governance Country Assessment: Republic of Ghana. May 2005.*

WORLD BANK, 2009. List of developing countries. [Online] Available from: http://www.compstat2012.org/developingCountries.pdf [Accessed on 10th November 2010]

WORRELL, D.L., NEMEC, C. and DAVIDSON III, W.N., 1997. One hat too many: key executive plurality and shareholder wealth. *Strategic Management Journal,* 18(6), pp. 499-507

YAN-LEUNG, C., JIANG, P., LIMPAPHAYOM, P. and LU, T., 2008. Does corporate governance matter in China? *China Economic Review,* 19(3), pp. 460-479

YERMACK, D., 1996. Higher market valuation of companies with a small board of directors. *Journal of Financial Economics,* 40(2), pp. 185-211

ZHEKA, V., 2006. Corporate Governance and Firm Performance in Ukraine. *Herriot-Watt University Centre for Economic Reform and Transformation Discussion Paper.*

APPENDICES

**Appendix 1: The six dimensions and the operationalisation of the Ghanaian Corporate Governance Index
(*GCGI*)**

No.	Index questions applied in Ghana	Measurement	Verification
	Board composition		
1	Are the Chairman of the board and the CEO post separated?	A *binary* number of *1* if the role of the Chairman and the CEO of the company is separated, *0* otherwise	Verified if the name of the Chairman and the CEO were not the same at the end of each financial year.
2	Does the company board meet at least six times a year?	A *binary* number of *1* if the company board meets at least six times a year, *0* otherwise	Verified the number of board meetings from the company's annual report at the end of each financial year
3	Is the board size between eight and sixteen members as recommended by the Ghanaian Code?	A *binary* number of *1* if the company has the size of the board to be between eight and sixteen, *0* otherwise.	Verified the number from the company's annual report at the end of each financial year
4	Does the proportion of the independent NEDs represent at least one third but not less than two of the total members of the board?	A *binary* number of *1* if the company has on its board at least one third but not less than two as independent NEDs, *0* otherwise	Verified the number of independent NEDs at the end of each financial year from the annual report.
5	Does the company have a Finance Director charged with the responsibility for the finance function?	A *binary* number of *1* if the company has a Finance Director in place, *0* otherwise	Verified the existence of a Finance Director from the annual report at the end of each financial year.
6	Does the company have a Secretary charged with the responsibility for the effective function of the board?	A *binary* number of *1* if the company has in place a company secretary, *0* otherwise	Verified the existence of a company Secretary from the annual report at the end of each financial year.

Continuation: **Appendix 1**

		Audit Committee	
No.	**Index questions applied in Ghana**	**Measurement**	**Verification**
1	Does the company have an audit committee in place?	A *binary* number of *1* if a company has an audit committee in place, *0* otherwise.	Verified the existence of an audit committee from the company's annual report at the end of each financial year
2	Is the audit committee of a company composed of a minimum of three directors of whom majority are independent NEDs?	A *binary* number of *1* if the company has 2/3 of its audit committee members to be independent NEDs, *0* otherwise	Verified the ratio of independent NEDs on the audit committee from the company's annual report at the end of each financial year
3	Do the company audit committee members comprise directors with adequate financial Knowledge?	A *binary* number of *1* if the company has the majority of its directors on the audit committee to be financially literate, *0* otherwise	Verified the company audit committee members background from its annual report at the end of each financial year
4	Is the chairman of the audit committee an independent NED?	A *binary* number of *1* if the chairman of the audit committee is an independent non-executive director, *0* otherwise	Verified the name of the chairman from the company's annual report to confirm his/her status at the end of each financial year
5	Does the company disclose in its annual report the membership of its audit committee for each financial year?	A *binary* number of *1* if the membership of the audit committee is disclosed in the annual report, *0* otherwise	Verified the company's audit committee membership disclosure in its annual report at the end of each financial year
6	Does the company report on the activities of its audit committee in the annual report to shareholders?	A *binary* number of *1* if the company report on the activities of its audit committee, *0* otherwise	Verified the company audit committee activities reported in its annual report at the end of each financial year

Continuation: **Appendix 1**

		Remuneration Committee	
No.	**Index questions applied in Ghana**	**Measurement**	**Verification**
1	Does the company have a remuneration committee in place?	A *binary* number of *1* if the company has a remuneration committee in place, *0* otherwise	Verified the existence of a remuneration committee from the company's annual report at the end of each financial year
2	Is the remuneration committee of a company composed of a majority of independent NEDs?	A *binary* number of *1* if the company has a majority of its remuneration committee members to be independent NEDs, *0* otherwise	Verified the composition of the company's remuneration committee from its annual report at the end of each financial year
3	Is there any disclosure of the company's remuneration committee membership in the annual report?	A *binary* number of *1* if the membership of the remuneration committee is disclosed in the company's annual report, *0* otherwise	Verified the company's remuneration committee membership disclosure in its annual report at the end of each financial year
4	Is the chairman of the remuneration committee an independent non-executive director?	A *binary* number of *1* if the chairman of the remuneration committee is an independent non-executive director, *0* otherwise	Verified the name of the chairman from the company's annual report to confirm his/her status at the end of each financial year
5	Does the company provide information in its annual report on the aggregate amount of compensation paid to its directors?	A *binary* number of *1* if the aggregate amount of compensation paid to directors is disclosed in the company's annual report, *0* otherwise	Verified from the company's annual report the aggregate amount paid as compensation to directors at the end of each financial year
6	Do directors receive part of their remuneration in stock or stock option and disclose in the annual report?	A *binary* number of *1* if the company's directors receive as part of their remuneration stock or stock option, *0* otherwise	Verified from the company's annual report the remuneration paid in the form of stock or stock option at the end of each financial year

Continuation: **Appendix 1**

	Shareholder Rights		
No.	**Index questions applied in Ghana**	**Measurement**	**Verification**
1	Does the company give adequate notice and information to its shareholders prior to its AGM?	A *binary* number of *1* if the company gives notice to its shareholders not less than 21 days prior to the AGM, *0* otherwise	Verified the date notice was sent to the shareholders by a company from its annual report at the end of each financial year
2	Does the company allow shareholders to approve its directors' re-election at the AGM?	A *binary* number of *1* if directors submit themselves for re-election at least every three years, *0* otherwise	Verified from the company's annual report if directors submitted themselves for re-election at the end of each financial year
3	Does the company facilitate voting by proxy to appoint directors at the AGM?	A *binary* number of *1* if the company allows voting by proxy, *0* otherwise	Verified from the company's annual report a letter of invitation to shareholders at the end of each financial year
4	Are there any opportunities given to the company's shareholders to vote by mail?	A *binary* number of *1* if the company allows voting by mail, *0* otherwise	Verified a statement that allows voting by mail from the company's annual report at the end of each financial year
5	Does the company provide information in its annual report related party transactions to its shareholders?	A *binary* number of *1* if the company discloses a related party transactions, *0* otherwise	Verified from the company's annual report for all related party transactions at the end of each financial year
6	Does the company disclose its directors share ownership in its annual report to shareholders?	A *binary* number of *1* if the company discloses its directors share ownership, *0* otherwise	Verified the company directors share ownership from its annual report at the end of each financial year

Continuation: **Appendix 1**

		Financial Affairs and Auditing	
No.	**Index questions applied in Ghana**	**Measurement**	**Verification**
1	Does the company produce its annual report by the legally required date?	A *binary* number of *1* if the company produces its annual report at 31st December each year, *0* otherwise	Verified the publication date of the company's annual report at the end of each financial year
2	Does the company use one of the recognised audit firms by the Institute of Chartered Accountants Ghana?	A *binary* number of *1* if the company has a qualified external auditor in place, *0* otherwise	Verified the auditors report from the company's annual report at the end of each financial year to confirm their status
3	Does the company provide information in its annual report the existence of appropriate systems to monitor risk and financial governance measures?	A *binary* number of *1* if the company has provided information on its systems to manage risk, *0* otherwise	Verified from the company's annual report a statement of the existence of appropriate systems to manage at the end of each financial year
4	Does the company provide a balanced and understandable assessment of its financial and operating results in its annual report?	A *binary* number of *1* if the company has provided a balanced and understandable assessment of its financial and operating results, *0* otherwise	Verified from the company's annual report an assessment made at the end of each financial year
5	Does the company use Ghana National Accounting Standards for the preparation of its financial statements?	A *binary* number of *1* if the company uses Ghana National Accounting Standards to prepare its financial statements, *0* otherwise	Verified from the auditors report of the company in its annual report the Accounting Standards used at the end of each financial year
6	Does the company disclose in its annual report the fees paid to its external auditors for audit and non-audit related work?	A *binary* number of *1* if the company discloses fees paid to external auditors for audit and non-audit related work, *0* otherwise	Verified the fees paid to the external auditors from the company's annual report at the end of each financial year

Continuation: **Appendix 1**

		Disclosure	
No.	**Index questions applied in Ghana**	**Measurement**	**Verification**
1	Does the company annual report include information on its current and future prospects together with foreseeable material risk factors?	A *binary* number of *1* if the company provides information on its current and future prospects in its annual report, *0* otherwise	Verified the company's operation and financial review from its annual report at the end of each financial year
2	Does the company disclose in its annual report a statement of responsibility of the preparation of its financial statements?	A *binary* number of *1* if a statement of directors responsibility of the preparation of the financial statements is disclosed by the company	Verified the statement of responsibility by the directors in the preparation of the financial statement from the company's annual report at the end of each financial year
3	Does the company produce a statement as to the adequacy of internal control in its annual report?	A *binary* number of *1* if a statement of the adequacy of internal control is disclosed by the company, *0* otherwise	Verified the statement of internal control adequacy from the company's annual report at the end of each financial year
4	Does the company disclose in its annual report a statement as to the compliance with the law?	A *binary* number of *1* if a statement of compliance with the law is disclosed by the company, *0* otherwise	Verified the statement of compliance with the law from the company's annual report at the end of each financial year
5	Does the company disclose in its annual report a statement of compliance with corporate governance?	A *binary* number of *1* if a statement of compliance with corporate governance is disclosed by the company, *0* otherwise	Verified the statement of compliance with corporate governance from the company's annual report at the end of each financial year
6	Does the company produce information on the degree of being a going concern in its annual report for each financial year?	A *binary* number of *1* if a statement of going concern is disclosed by the company, *0* otherwise	Verified the statement of being a going concern from the company's annual report at the end of each financial year

Appendix 2: A cover letter and the questionnaire

27th May 2011

The Chairman of the Board of Directors.
Private Mail Bag
Accra-North
Ghana

Dear Chairman

I am conducting a study into corporate governance practices of listed companies on the Ghana Stock Exchange towards a Doctor of Philosophy Degree through the Aberdeen Business School at the Robert Gordon University in the United Kingdom. The research topic being investigated hopes to investigate the relationship between corporate governance and firm performance. The questionnaire is based on the Ghanaian Code of best practices on corporate governance introduced in 2003.

I sent this questionnaire to you because you are a board member of a listed company. If you are involved in the implementation of the Ghanaian Code provisions, you are invited to participate in this research. If you choose to complete the questionnaire you can be assured of anonymity and confidentiality since the results will be used only in aggregated form. The completed questionnaires will be securely kept and only available to the researcher and the supervisory team.

The results will be included in the thesis that will be made available at the Robert Gordon University library and also some aspects will be disseminated in aggregate through possible conference presentations or professional and academic journal articles.

The questionnaire should take approximately 10-15 minutes to complete. Your participation would be much appreciated and I look forward to receiving the completed questionnaire by 30th June 2011. You can send the completed questionnaire in the self-addressed (no stamp required) envelope provided and return to my collection postal address at P.O. Box 43, Jachie-Ashanti, Ghana.

Should you have any other questions regarding the research or the questionnaire, please do not hesitate to contact me on +44 1224 263960 or e-mail: a.owusu@rgu.ac.uk or my **Principal Supervisor, Professor Charlie Weir** on +44 1224 2638 or e-mail: c.weir@rgu.ac.uk.

Thank you very much for your participation

Yours sincerely,

....
Andrews Owusu
PhD Student

QUESTIONNAIRE

CORPORATE GOVERNANCE AND FIRM PERFORMANCE

Prior literature on corporate governance and firm performance in Ghana with regard to the implementation of the Ghanaian Code introduced in 2003 is limited. As a result, please provide your opinion regarding the implementation of the Ghanaian Code in your company and its benefit to your firm performance.

SECTION A: GENERAL INFORMATION

1   What is your role in the company?

      Chairman   ☐

      MD/CEO   ☐

      Other (Please specify)   ☐   _____

2   How long have you been in this role?

      0 - 5 years   ☐

      5 – 10 years   ☐

      11years and over   ☐

3   How familiar are you with the Ghanaian code of best practices on corporate governance published in 2003?

      Very familiar   ☐

      Familiar   ☐

      Not familiar   ☐

4   How familiar are you with the provisions of the Ghanaian Code of best practices on corporate governance?

      Very familiar   ☐

      Familiar   ☐

      Not familiar   ☐

Please state the extent to which you agree or disagree with the following statements on a scale of 1 to 5, where 1 is strongly disagree and, 5 is strongly agree.

SECTION B: CORPORATE GOVERNANCE IMPLEMENTATION ISSUES

1	2	3	4	5
Strongly disagree (SD)	Disagree (D)	Neutral (N)	Agree (A)	Strongly Agree (SA)

5	**Your view on the application of the Ghanaian Code of best practices on corporate governance published in 2003**	SD	D	N	A	SA
a	I believe that the Ghanaian Code is a benchmark for good corporate governance practices for Ghanaian listed companies.	1	2	3	4	5
b	I believe that the standard of corporate governance has improved in my company since the introduction of the Ghanaian Code.	1	2	3	4	5
c	I believe that my company is prepared to comply with further corporate governance requirements such as the establishment of a nomination committee if not complied presently.	1	2	3	4	5
d	I believe that the current regulatory and institutional bodies are supportive enough to help implement the Ghanaian Code provisions	1	2	3	4	5
e	I believe that there is a need to review the Ghanaian Code by an independent committee	1	2	3	4	5

SECTION C: CORPORATE GOVERNANCE AND FIRM PERFORMANCE

1	2	3	4	5
Strongly disagree (SD)	Disagree (D)	Neutral (N)	Agree (A)	Strongly Agree (SA)

6	**In your view, the voluntary adoption of the following Ghanaian Code provisions is beneficial to my firm performance**	SD	D	N	A	SA
a	The separation of the roles of the MD/CEO and the Chairman of the board of directors as recommended by the Ghanaian Code	1	2	3	4	5
b	To have a total number of the board members ranging from eight to sixteen as recommended by the Ghanaian Code	1	2	3	4	5
c	To have a balance of executive and non-executive directors on the board with at least one-third to be independent non-executive directors as recommended by the Ghanaian Code	1	2	3	4	5
d	The establishment of an audit committee as recommended by the Ghanaian Code	1	2	3	4	5
e	The establishment of a remuneration committee as recommended by the Ghanaian Code	1	2	3	4	5
f	I believe that the Ghanaian Code is only beneficial when it is fully adopted instead of its specific provisions	1	2	3	4	5

SECTION D: ADDITIONAL INFORMATION

7   Would you be willing to be contacted for any follow-up questions?

           Yes   ☐

           No   ☐

8   If your answer was yes, please fill in the form below:

Company Name..

Your Name..

Daytime telephone number..

9   If you have any further comments about the implementation of the Ghanaian Code of best practices on corporate governance and its benefit to firm performance in Ghana, please indicate them here:

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THANK YOU VERY MUCH FOR YOU PARTICIPATION

Please send the completed questionnaire in the self-addressed (no stamp required) envelope provided and return to my Ghana address:

Andrews Owusu
P. O. Box 43
Jachie Ashanti
Ghana

Appendix 3: The Wooldridge (2006) edogeneity test

Panel-data fixed-effects lag/forward regressions of the *GCGI* and the accounting-based firm performance of ROA and ROE

	Lag Models		Forward Models	
	ROA	**ROE**	**ROA**	**ROE**
Intercept	39.739	83.645	33.062	86.926
	(4.01)***	(2.49)**	(3.27)***	(2.37)**
GCGI	0.135	0.164	0.096	0.427
	(1.36)	(0.49)	(0.93)	(1.13)
Lag GCGI	0.162	0.660	-	-
	(1.68)*	(2.02)**	-	-
GEAR	-0.065	-0.602	-0.109	-0.720
	(2.04)**	(5.59)***	(3.31)***	(6.01)***
SIZE	0.058	1.251	0.403	2.873
	(0.08)	(0.52)	(0.50)	(0.98)
GROWTH	0.484	4.515	1.248	3.366
	(0.43)	(1.17)	(1.01)	(0.75)
AGE	-1.035	-2.746	-0.949	-2.945
	(3.09)***	(2.42)**	(2.68)***	(2.29)**
Forward GCGI	-	-	0.035	0.008
	-	-	(0.33)	(0.02)
Observations	244	244	244	244
Group[a]	39	39	39	39
R^2	0.12	0.19	0.13	0.20

Notes: The dependent variable is the return on assets (ROA). *GCGI* is the Ghanaian corporate governance index, *GEAR* is the gearing, *SIZE* is the firm size, *GROWTH* is the growth opportunity and *AGE* is the firm age. The model provides *t*-statistics which are in parenthesis. Coefficients are on top of parenthesis.
[a] Unbalanced panel
***Significant at 1% level
**Significant at 5% level
*Significant at 10% level