



Title: UK corporate governance effects on investor behaviour and firm performance before and during crisis

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**UK CORPORATE GOVERNANCE EFFECTS ON
INVESTOR BEHAVIOUR AND FIRM PERFORMANCE
BEFORE AND DURING CRISIS**

Amira Mohamed Refaat Mohamed Hawas

A thesis submitted to the University of Bedfordshire in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Finance

**University of Bedfordshire Business School
University of Bedfordshire**

2014

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In the Name of Allāh, the Most Gracious, the Most Merciful

Declaration

I hereby declare that this thesis is my own unaided work. It is being submitted for the degree of doctor of philosophy in finance at the University of Bedfordshire. It has not been submitted before for any degree or examination in any other University.

Amira Hawas
May 2014

Abstract

The recent financial crisis has raised serious questions about the effectiveness of corporate governance (CG) in monitoring management and protecting investors' interests. There is concern that 'poor' CG was, to a certain extent, a major cause of the current financial crisis. This thesis, therefore, investigates the crucial policy question of whether the quality of CG has any effect on financial performance, information asymmetry and on block shareholders' investment decisions. This is achieved and presented in the form of three essays on CG practices in UK with a particular focus on the periods before and during the 2007/2008 financial crisis.

The first essay aims to investigate the impact of firm-level CG on block shareholders' investment decisions for a large sample of UK non-financial firms over the period 2005 to 2009. Using a panel data analysis, the results revealed the importance of CG for block shareholders' investment decisions. Furthermore, the study results indicated that only institutional block shareholders consider CG to be important criteria for their investment decisions. Moreover, when the effect of CG on block shareholdings in both periods before and during crisis was examined, a significant difference in results appeared: an insignificant positive relationship in the pre-crisis period turned out to be significant during crisis. The result thus indicates that block shareholders viewed CG as particularly important during the crisis period.

The second essay aims to examine the effect of CG on firm performance before and during the financial crisis. It also investigates the mediating effect of agency costs on the association between CG and firm performance. The results revealed that CG affects firm performance only in the period before the crisis, but no significant effect was found during the crisis period. Moreover, agency cost was proved to fully mediate the relationship between CG and performance in the pre-crisis period. The results point to an important issue, which is the need to re-evaluate CG not only in stable periods but also during turbulent times, and to evaluate its ability to perform effectively in such different conditions.

The third essay investigates the effect of both CG and block ownership on information asymmetry. Further, the effects of CG in lessening the positive association between block ownership and information asymmetry is considered. The results revealed that CG affects information asymmetry only in the pre-crisis. In addition, block ownership was shown to have a significant and positive effect on information asymmetry during crisis periods suggesting that block shareholders benefit from their information advantage during crisis period which in turn worsens the information asymmetry problem. This suggests that block shareholders engage more in their private benefits rather than in efficient monitoring. The results also proved that CG is insignificant during turbulent period in lessening the negative effect of block ownership.

Keywords: Corporate Governance, block shareholders, agency cost, firm performance, information asymmetry, 2007/2008 financial crisis, UK.

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Related Publications

Some of the material in this thesis had been presented in the following publications.

Refereed Journals /Conferences/ Workshops Papers

- Hawas, A., and Tse, C. (2014) How Corporate Governance Affects Investment Decisions of Block Shareholders in UK Listed Companies: Has the Recent Credit Crunch Changed the Game? (Forthcoming- *Journal of Accounting, Auditing and Finance* 3*)
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- Hawas, A. (2011) Corporate governance impact on block shareholders' investment decisions in UK listed companies. *British Accounting and Finance Association, Annual Doctoral Colloquium*, April 11-12, Aston Business School.

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List of Abbreviations

AII	Accountability and Audit Index
BCII	Board Composition and Independence Index
BM	Book to Market ratio
BPPI	Board Practice and Process Index
CG	Corporate Governance
CG_SCORE	Corporate Governance Score
CGI	Corporate Governance Index
CMBE	Consistently Meet or Beat Earnings
CSLA	Credit Lyonnais Securities Asia
FCF	Free Cash Flow
GMI	Governance Metrics International
ISS	Institutional Shareholder Services
LEV	Leverage
LSE	London Stock Exchange
OECD	Organisation for Economic Co-operation and Development
PIN	Probability of Informed Trading
PRICE	the annual stock price
ROA	Return On Assets
ROE	Return On Equity
S&P	Standard and Poor's
SG&A	Selling, General and Administrative Expenses to Sales Ratio
TCL	The Corporate Library
T&D	Transparency and Disclosure
TQ	Tobin's Q
VIF	Variance inflation factors

Chapter One:
Introduction and Background to the Thesis

Chapter One: Introduction and Background to the Thesis

1.1 Introduction

The 2007/2008 global financial crisis has led to a further growing awareness and need for effective Corporate Governance (CG) especially in the wake of the fact that a failure in CG has been identified and indeed blamed as one of the main factors that directly led to the global financial crisis (Aebi et al., 2012; Iwasaki, 2014; Kirkpatrick, 2009; Tarraf, 2011). In the same vein, the Organisation for Economic Co-operation and Development (OECD) report (2009) pointed out that deficiencies in CG structure and processes played a significant role in triggering the global financial crisis. It is argued that the current CG was unsuccessful to protect against unnecessary risk taking and it also failed to offer the appropriate control needed by companies to ensure good business practices (Kirkpatrick, 2009). In the UK specifically, there were major falls in the stock market, and there were major concerns regarding the stability of at least some of its banks. A run on Northern Rock for example led to the bank being nationalised (Mallin, 2013). In response to these events, a range of CG reforms have been undertaken by regulators, international organisations, governments, and academics. These reforms aimed mainly to develop new CG standards and principles to restore investors' assurance in both capital markets and listed firms (Essen et al., 2013). Thus, the global financial crisis raised serious questions about the effectiveness of CG to actively monitor management and protect the shareholders' benefits. However, there is a notable lack of empirical evidence on the role of CG in

protecting the shareholders' interests in the period leading to and during the financial crisis of 2007/2008.

Therefore, the principal aim of this thesis is to explore the effects of CG in reducing information asymmetry, improving firm performance and attracting block shareholders in the UK with particular focus on the periods before and during the 2007/2008 global financial crisis. This is achieved and presented in the form of three essays on CG practices (Chapters 3, 4 and 5), each essay focuses on exact research questions, and, hence, it contributes to further understanding of CG in UK and allows the researcher to uniquely shed vital and timely empirical insights on CG in the periods before and during the crisis. The three essays mentioned above examined a sample of UK FTSE 350 non-financial firms in the period that covers the periods before and during the global financial crisis from 2005 to 2009. These three essays are linked; as firms, in their efforts to attract block shareholders, try to improve their CG structure which will reduce information asymmetry and agency cost and hence improve their performance (see Figure 1.1).

1.2 Research Focus and Motivation

Although the origin of the financial crisis was in the United States, it became worldwide; it spilled over to both developing and developed countries; it affects almost all economies of the world (Dullien et al., 2010). This financial crisis results in the largest and sharpest drop in global economy. Although this crisis started mainly in the financial sector, the disastrous collapse in the financial sector had affected other sectors (Beltratti and Stulz , 2010).

During a severe financial crisis a bank might have to reduce its credit exposure; therefore affecting its ability to lend. Therefore, other non-financial companies might be affected; non-financial companies might be unable to borrow to pay its obligations. As a result, these companies might search for other sources of finance (Bernanke, 1983). Therefore, the focus of this thesis will be on the non-financial companies; it will examine how these companies survive the financial crisis. It examines the effect of CG in attracting more block shareholders and hence increase firm's shareholders base. Moreover, it examines the role of CG in reducing both agency cost and information asymmetry and finally its role in improving firm performance both in pre and during crisis period.

This thesis investigates the influence of CG on block shareholders' investment decisions, firm performance and information asymmetry, using a sample of 139 UK FTSE-350 non-financial companies for the periods before and during the 2007/2008 global financial crisis. This is achieved and presented in the form of three essays. The first essay, presented in chapter 3 of the thesis, investigates an important policy question of whether firm-level CG affects investment decisions of block shareholders with particular focus on the periods before and during the financial crisis of 2007/2008. Good CG plays a very important function in reinforcing the reliability and effectiveness of financial markets. Therefore, well governed firms will normally perform better than others and hence will have the ability to catch the attention of investors, and this in turn will help to provide finance needed for further expansion (See for example; McCahery et al., 2010; Starks, 2009). In the same vein, Investor Opinion Survey by McKinsey (2000)

indicated that most of investors preferred to invest in a company with good CG. But with the global financial crisis and corporate scandals that have done much to undermine the investors' confidence in business and the financial markets, do investors still consider CG in their investment decisions? There is a notable and growing concern and, indeed criticism, regarding the insufficient empirical evidence on the effects of CG on attracting block shareholders in the period leading to and during crisis. Moreover, most prior studies have examined the effects of CG in attracting shareholders specifically institutional shareholders with little attention to other different categories of block shareholders (Chung and Zhang, 2011; Ferreira and Matos, 2008; Khurshed et al., 2011). Cronqvist and Fahlenbrach (2009) also argued that block shareholders have heterogeneous beliefs, skills, and preferences. Therefore, the scope of first essay, Chapter 3, is extended to analyse different types of block shareholders, rather than just the institutional investors.

The second essay, which is chapter 4 of the thesis, aims to study the effect of CG on firm performance in the periods before and during the financial crisis as well as to empirically explore the mediating role of agency cost as there is a paucity of research that examines this relationship. Although the relationship between CG and firm performance is extensively examined, past studies have focused mainly on non-crisis periods (Black et al., 2006; Veprauskaite and Adams, 2013; Wang et al., 2012) and on financial companies during crisis periods and thereby limiting our understanding of CG (Cornett et al., 2010; Fahlenbrach and Stulz, 2009; Minton et al., 2010). This is the gap in the literature which provided the

motivation for the researcher to consider the association between CG and firm performance in both periods before and during the crisis on a sample of UK non-financial firms. In addition, prior studies argued that good CG reduces agency cost and hence improves firm performance. However, there was no study that empirically investigated the mediating role of agency cost on the relationship between CG and firm performance. Consequently, by examining the mediating effect of agency cost, this essay, Chapter 4, offers greater insight into an important channel through which CG affects performance.

The third essay, which is chapter 5 of the thesis, aims to examine the influence of CG and block ownership on information asymmetry before and during the financial crisis of 2007/2008. In addition, it examines the influence of various categories of block ownership on information asymmetry. Crucially, it also examines CG role in alleviating the expected positive association between block ownership and information asymmetry. Whilst a number of prior studies have documented the negative relationship between CG and on information asymmetry (Anglin et al., 2011; Cerbioni and Parbonetti, 2007; Donnelly and Mulcahy, 2008; Lang and Lundholm 2000; Lei et al., 2013; Prommin et al., 2014), there was no previous study that examined the role of CG in mitigating information asymmetry during crisis periods in general and in UK in particular. Therefore, the current essay will also address this gap in the literature.

Previous studies also revealed that ownership concentration might affect information asymmetry (Su, 2004 and Hope et al., 2009). However, examining the

association between block ownership and information asymmetry during crisis period is missing in the literature. It is expected especially during crisis period that block ownership may take advantage of their position and worsen the information asymmetry problem. For example, block shareholders may affect management to hide information to protect their interests which in turn increases information asymmetry (Choi et al., 2010; Jiang et al., 2011; Prommin et al., 2014). Thus, block shareholders, rather than simply monitoring management, can in fact influence management to take actions in their interest, thereby increasing the level of information asymmetry (Heflin and Shaw, 2000). Therefore, in this essay the effect of block ownership on information asymmetry is examined in the periods before and during the crisis period.

Finally, prior studies that examined the effect of CG in alleviating the positive relationship between block ownership and information asymmetry are generally scarce and particularly focused on developing countries during stable periods (Byunet al., 2011; Prommin et al., 2014). This significantly limits our understanding of the role of CG mechanisms in mitigating the information asymmetry problem. In UK as a developed country, CG is therefore expected to play an important role in reducing information asymmetry in the presence of block ownership. The third essay, chapter 5, therefore, provides new empirical evidence on block ownership, their impact on information asymmetry, and the mitigating role of CG.

In general, this thesis tries to bridge the gap in CG literature by examining firm-level CG effects on investment decisions of block shareholders and by

investigating the effects of CG on reducing information asymmetry and improving firm performance with particular focus on the period preceding, and during the financial crisis of 2007/2008. The following Figure 1.1 presents the structural relationship of the three essays.

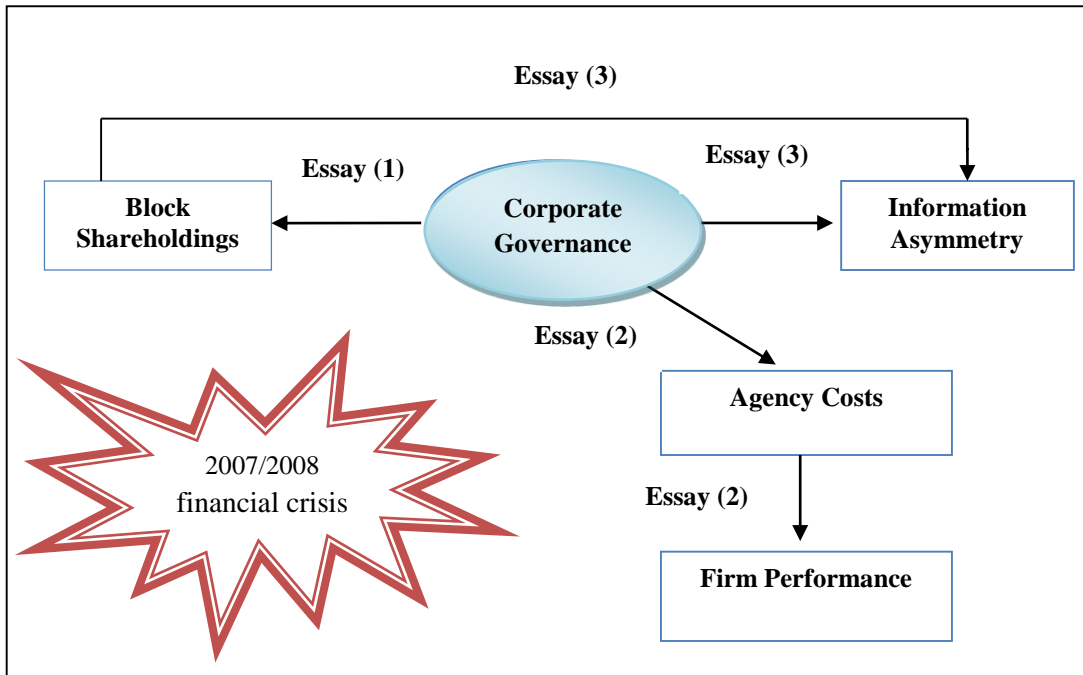


Figure (1.1) Research Framework

1.3 Research Objectives and Questions

Motivated by the issues identified in Section 1.2, the principal aim of this thesis is to explore the effects of CG in reducing information asymmetry, improving firm performance and attracting block shareholders in the UK with particular focus on the periods before and during the 2007/2008 global financial crisis. This is achieved and presented in the form of three essays on CG practices (Chapters 3, 4 and 5), each essay focuses on exact research questions, and, hence, it contributes to further understanding of CG in UK and allows the researcher to uniquely shed

vital and timely empirical insights on CG in the periods before and during the crisis. The following Table 1.1 presents the main research questions for each essay.

Table 1.1: Research questions for each essay	
Paper/ Chapter	Research questions
Essay One (Chapter 3)	<ol style="list-style-type: none"> 1. Does CG affect overall block shareholders' investment decisions? 2. Which particular aspects of CG are more important in affecting their investment decisions? 3. Do different types of block shareholders react differently to CG level? 4. Have the recent financial crises changed the relationship between CG and block shareholders' investment decisions?
Essay Two (Chapter 4)	<ol style="list-style-type: none"> 1. Does CG act as an effective mechanism in improving firm performance? If so; 2. Does agency cost mediate the relationship among CG and firm performance?
Essay Three (Chapter 5)	<ol style="list-style-type: none"> 1. Does CG affect information asymmetry before and during the financial crisis? 2. Does block ownership positively associated with information asymmetry? And, if so 3. Does CG help lessen the positive relationship between block ownership and information asymmetry?

1.4 Key Findings of the Research

This section summarises the three threads of the empirical analysis as discussed in chapters 3, 4 and 5 to answer the research questions and provide a general understanding of the role of CG in the UK. In essay one, chapter 3, the results reveal a positive association between CG and block shareholdings for the whole period of study from 2005 to 2009. These results give an indication of the

importance of CG in the investment decision taken by block shareholders. However, the results show a change in this relationship from period before the crisis to during crisis period; the insignificant relationship in the pre-crisis period turns to be significant during crisis, suggesting that block shareholders view CG as particularly important during the crisis period. Moreover, the results indicate that board composition and independence (BCII) is the only CG sub index that affects total block shareholders' investment decisions; implying that firms with better board composition and independence index attract more block shareholders. With regard to different types of block shareholders, the results of essay one reveal that only institutional block shareholders pay more attention to CG as an important part of their investment decisions. Moreover, the results point out that those different categories of block shareholders have heterogenous preferences for different CG provisions. Two main conclusions are drawn from the findings. First, not all CG mechanisms are considered important for block shareholders especially during a crisis period; a significant relationship is only found between BCII and block shareholdings. These findings highlight the important role of the composition and independence of the board especially during crisis periods in attracting block shareholders. Second, during crisis periods investors change their investment behaviour and become more conservative.

In essay two, chapter 4, a positive association among CG and firm performance is found the period prior to the financial crisis. However, during the crisis period it shows a non-significant relationship. These results also indicate that the accountability and audit index is the only CG-sub index that affects firm

performance in the pre-crisis period. The results further support the mediating role of agency cost, which is consistent with the agency theory. This mediating role is proved only in the pre-crisis period and holds only for one of the CG-sub indices, which is Accountability and Audit Index (AAI). This study, therefore, provides the evidence that agency cost completely mediates the relationship between CG and firm performance. Moreover, this study provides the evidence that there is no relationship between CG and firm performance during crisis period which implies that CG mechanisms' effects differ from the crisis to the non-crisis period. Therefore, the efficacy of good CG mechanisms, such as board independence and board practices, that are believed to have common relevance are questionable especially during crisis periods.

The third essay, chapter 5, provides insights into the role of CG mechanisms in mitigating information asymmetry. The results reveal that CG is effective in mitigating information asymmetry only in the pre-crisis period while no evidence is found for the period of the crisis itself. More specifically both Board Practice and Process Index (BPPI) and AAI are the only CG sub-indices that affect information asymmetry in the pre-crisis period. With regard to the effect of block ownership, the results indicate a non-significant association between block ownership and information asymmetry in the pre-crisis period. However, a positive statistical association is found between block ownership and information asymmetry in the crisis period. Moreover, both institutional block shareholdings and other block shareholdings were found to positively and significantly affect information asymmetry. Finally, the results showed that CG did not have any

effect in lessening the positive relationship between block ownership and information asymmetry during crisis period. These results have implications for regulatory bodies. In particular, there is a need for a continual review of CG mechanisms and legal system, especially during crisis periods. This suggests that a new set of CG mechanisms is required during crisis periods. More importantly, it is vital to search for ways to convince block shareholders to participate and be more involved in monitoring management.

1.5 Significance of the Research

This thesis extends existing CG literature and contributes to it in a number of ways. First, it provides new evidence and important empirical insights on the effects of CG in protecting the shareholders' interests in both stable and turbulent periods; before and during the 2007/2008 global financial crisis for a sample of non-financial companies in UK. This adds to the previous literature which focused mainly on financial companies during financial crisis.

Second, it extends CG literature by focusing on the UK as a less regulated environment compared to a more regulated environment such as the US. In general, CG standards and guidelines vary widely between countries with some operating as voluntary best practice and mandatory in others. This research focuses on the UK as a less regulated environment, where regulations emphasise encouraging CG rather than imposing extensive mandatory requirements.

Third, distinct from most of the existing studies in which CG mechanisms have been tested in isolation, the current thesis develops a new composite measure of

26 CG dimensions that can capture the quality of CG. It has been developed based mainly on the requirements of the UK Combined Code of 2003. Hence, the crafted CG index provides a robust and validated measuring tool that allows us to shed important empirical insights on the impact of CG mechanisms on attracting shareholders, mitigating agency cost and information asymmetry and improving firm performance.

Fourth, the first essay makes important empirical contributions to existing studies by distinguishing between the different categories of block shareholder, which in turn gives more insights regarding their preferences in terms of CG. This is the first study to examine the impact of CG mechanisms on the investment decisions made by block shareholders not only institutional investors. This consideration of the preferences of both total block shareholders and different types of block shareholders will provide significant insights to the existing literature that studied the effect of block ownership on firm value and its policies.

Fifth, the second essay contributes to the CG theories by providing a new insight into the mediating role of agency cost on the relationship between CG and performance. Moreover, this thesis is the first study to examine the impact of CG on agency cost in the UK context for both periods before and during the financial crisis.

Finally, the third essay extends the information asymmetry literature by investigating the impact of both CG and block ownership on information

asymmetry during crisis period which had not examined before. Moreover, drawing on previous literature regarding the different alternative mechanisms that could help to supply the information to investors and, hence, reduce information asymmetry (Byun et al., 2011), this essay contributes to this issue by examining CG's role in alleviating the expected positive relationship between block ownership and information asymmetry.

1.6 Structure of the Thesis

This chapter has presented the overall focus and objectives of the three essays of this thesis. The background and rational of this thesis has been discussed which highlights the motivation and specific research questions for each essay. This is followed by the discussion of the main results of this essay and finally presenting the significance and contribution of this research. The remaining of the thesis is organised as follows. Chapter 2 presents a review of the CG developments in UK starting from the Cadbury Report (1992) to the UK Corporate Governance Code (2012). In addition, this chapter also discusses the developed CG index and sub-indices that are used throughout this thesis. Chapters 3, 4 and 5 present the three essays mentioned above which namely cover the following topics: how corporate governance affects investment decisions of block shareholders in UK listed companies: has the recent financial crisis changed the game? (Chapter 3 – Essay1); the impact of corporate governance on firm performance in the periods before and during the financial crisis: UK FTSE 350 companies (Chapter 4 – Essay 2); and, finally, the roles of corporate governance and block ownership in reducing information asymmetry (Chapter 5 – Essay 3). Each essay includes an

introduction, hypothesis development, methodology, analysis of results, and summary and conclusion sections. Chapter 6 is the final chapter and provides a summary of the key findings of the three essays and concluding remarks.

Chapter Two:
Corporate Governance in the United Kingdom

Chapter Two: Corporate Governance in the United Kingdom

2.1 Introduction

This chapter makes an attempt to discuss the development of UK corporate governance (CG). In UK, there have been noticeable corporate scandals such as the fall down of listed corporations, such as Barings, BCCI and Maxwell Corporation (Mallin, 2013). These corporate scandals resulted in the undermining of investors' confidence in the capital markets and the need to reform CG. In the same vein, the increased ownership by institutional investors in UK was another reason for the urgent need to develop a good CG where these investors are searching for a way to protect their investment; therefore, the role of CG is important to create an attractive investment environment (Dignam, 2007; Mallin et al., 2005). Accordingly, in the wake of these scandals, a sequence of CG developments began in UK starting from the Cadbury Committee Report in 1992 until UK CG Code (2012). Recently, the 2007/2008 global financial crisis has reignited the debate regarding the need for effective CG. In this context, the UK government asked Sir David Walker to review corporate governance in UK banks and other financial institutions. The Walker Review was published in November 2009 and made some recommendations. The Walker Report (2009) provided a complete review of CG in the banking sector; however, it was applied to all institutions, not only banks (Adams, 2012). Incorporating the findings of the Walker Report, the new version of the UK CG code (previously known as the Combined Code) was published in 2010. The changes aim to reinforce the quality of the board and help the board to become more effective and accountable to

shareholders. The new code emphasised on the leadership of the chairman; therefore, one main area in the code is about the chairman responsibility in leading the board. In addition, there is more focus on evaluating board performance and a composition of the board; there is a need to have a balance of knowledge, skills, and independence. Moreover, it calls for the necessities of directors to have enough time to discharge their responsibilities effectively, and it also stressed the role of non-executives in developing strategies. This chapter, therefore, aims to provide a full account of the UK corporate governance framework. The remainder of the chapter is structured as follows. The next section provides a review of the development of CG code of best practice in the UK. Section three reviews the main approaches of developing CG indices that have been employed in the literature. Section four describes the process of constructing CG index used in this thesis followed by the chapter summary.

2.2 Corporate Governance Developments in the UK

Several definitions of CG had been identified in the literature. Therefore, it is difficult to make an acknowledgment of only one definition. Shleifer and Vishny (1997: 737), for example, defined CG as what “*deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment*”. The Cadbury Report also defined CG as “*the system by which companies are directed and controlled*” (Cadbury, 1992: para. 2.5). In the same vein, Dahya et al. (1996: 71) defined it as “*the manner in which companies are controlled and in which those responsible for the direction of companies are accountable to the stakeholders of these companies*”. Therefore, it can be said that

CG is all about the control of corporations (OECD, 1999); CG presents the structure through which the company's objectives are put, the ways of achieving these objectives, and the monitoring of performance. Moreover, it is important to view CG as a system of internal and external mechanisms vital to ensuring investors' return. Both of these mechanisms are shaped by the overall legal and institutional structures of each country. Therefore, in a wide scope, CG includes all the mechanisms that are needed to make sure that the company is managed effectively and that is why CG is considered important to businesses.

In UK, there have been noticeable corporate scandals such as the fall down of listed corporations, such as Barings, BCCI, Maxwell Corporation, Polly Peck and others (Mallin, 2013). These corporate scandals resulted in the undermining of investors' confidence in the capital markets. Moreover, the increased ownership by institutional investors in UK was another reason for the urgent need to develop a good CG where these investors are searching for a way to protect their investment; therefore, the role of CG is important to create an attractive investment environment (Dignam, 2007; Mallin et al., 2005). Consequently, in the wake of these scandals, a sequence of CG developments began in UK starting from the late 1980s and the early 1990s. Moreover, there are some factors that generally believed to affect the improvement of CG codes in UK; these include for example, the London Stock Exchange Code, Companies Act concerning transactions by directors and share dealing, the establishment of the Financial Services Authority, which is accountable for the requirements of CG in the UK,

the issuance of Company Law and the financial reporting council, as regulators of financial reporting (Solomon and Solomon, 2004).

In recent years, there has been a considerable growth in developing CG codes and principles as a result of corporate failures. The UK was one of the main leaders in this area. A first attempt to reform CG in UK was initiated by Cadbury in 1992. The Cadbury committee Report in 1992 is well thought-out as the base for all the subsequent reports that were published after that in many countries, and particularly in the UK (Aguilera and Cuervo-Cazurra, 2009; Brennan and Solomon, 2008). The Cadbury report was initiated by the Financial Reporting Council, the accounting bodies and the London Stock Exchange (LSE), and it further contributed to CG in Europe (Dignam, 2007). This report suggested a number of recommendations which are as follows: first, it emphasises the need for companies to establish various functional boards committees; these are the nomination committee, the remuneration committee and the audit committee. Second, the roles of chairman and CEO should be separated. Third, it also suggested that a satisfactory number of outside directors should be in the board. These recommendations were implemented by LSE, if a company did not comply with these recommendations it had to explain the reason for non-compliance (Dignam, 2007 and Mallin et al., 2005). However, Cadbury report missed explaining some main issues. First, it did not define the meaning of independence. Second, it did not state that non-executive directors should be the majority on the board (Dignam, 2007).

The Greenbury Report (1995) was mainly published following the concerns of both public and shareholders about executive remuneration as there was a public outcry of the large increase of directors' pay. Therefore, the Greenbury committee was set to look at this issue; consequently, some recommendations were suggested: first, the remuneration committee should consist of at least three non-executive directors in order for the committee to be without any personal or financial interests. Second, the replacement of share options by long term performance related criteria. Third, there should be a high level of disclosure of salaries in the annual reports. Forth, it is better to have a one year rolling contract for the directors to cut down the amount paid off for long term contracts. However, these recommendations did not prevent the committee to go for heavy criticism from the national press and from the government; this criticism was for not restricting excessive payouts to directors (Rodgers and Hotten, 1995).

Later in January 1998, the Hampel Report (1998) was issued as a review of the companies' implementation of both the Cadbury and Greenbury Reports' recommendations (Rayton, and Cheng, 2009). The Hampel report (1998) reaffirmed the recommendations of the previous two reports; in addition, it mainly focused on the role of institutional investors in CG. This increased focus on institutional investors was due to these investors; in particular pension funds were blamed of being focused on short term profitability instead of long term performance. Furthermore, the Hampel committee provided a set of principles of CG that are classified into four sections: the directors, the shareholders, accountability and audit, and directors' remuneration. Also, the Hampel Report

called for the need for the board to have a good internal control system in order to protect shareholders' interests.

An important sequence of the Hampel Report was the publication of the Combined Code (1998) which was based on the recommendation of the Cadbury, Greenbury, and Hampel reports, and it was published by the London Stock Exchange, so this combined code could sit together with the listing rules. This code is recognised as an international benchmark for good CG practice. This combined code consists of 17 principles and 48 provisions that covered five sections: directors, directors' remunerations, relations with shareholders, accountability and audit, and institutional investors. The code used the "comply or explain" approach; by this approach the listed companies have to explain in the annual report whether or not they had complied with the code. In section D2 of this code, it states that "the board should maintain a sound system of internal control to safeguard shareholders' investment and the company's assets". However, the code did not provide any details that defined what a sound internal control system is. Therefore, this gap was addressed further by the Turnbull reports.

The Turnbull reports (1999) provided guidelines regarding the internal control and reporting system; hence, it provided recommendations for directors regarding controlling firms and the financial reporting quality. These recommendations will help companies to put into practice the combined code requirements that are related to the internal control system. This in turn will help in setting up a sound

internal control system that enables the directors to manage risks that facing companies.

After a series of corporate failures in late 2001 in US such as Enron, Tyco and World Com, there were calls for CG reforms. In UK the response was the establishment of both the Smith and Higgs committees in 2002. Both Smith and Higgs committees published their reports on 2003. The main focus of the Higgs report was on both the board of directors and the role and effectiveness of non-executive directors, it provided recommendations concerning their appointment, resignation, remuneration, responsibilities and their relationship with shareholders (Higgs, 2003). The Smith report (2003) on the other hand focused on the audit committee role and also on the relationship between external auditors and firms. According to the recommendations of the audit committee, listed firms should have an audit committee that consists of three independent non-executive directors; moreover, one member at least should have recent and appropriate financial knowledge. In addition, there should be at least three meetings during the year for this committee. Regarding the external auditors, the report stressed the importance to ensure their independence.

In 2003, based on the recommendations of both the Higgs report (2003) and Smith report (2003), the Financial Services Authority replaced the Combined Code of 1998 by a new version of it. Both Higgs and Smith reports (2003) suggested that the main fundamentals of UK CG system are good and they only want to revise the old version of the combined code for further strength. Therefore, in the new

version of the combined code (2003), the main principles of the combined code (1998) remain untouched in the new one. The new code calls for the following:

1. The chairman and CEO roles should be separated, and the chairman should be independent on appointment.
2. The independent non-executive directors should be at least half the board.
3. Candidates for the board of directors should be considered from a broad variety of backgrounds.
4. There should be an accurate and formal evaluation of board performance.
5. The audit committee should have one member at least with recent and appropriate financial experience.

However, the combined code (2003) relaxed some of the recommendations of the Higgs report, for example, small companies can have two independent non-executive directors instead of having a minimum of half of the board at least (Keasey et al., 2005). This combined code provides major principles firms are expected to comply and report appropriately (Pop et al., 2009). The aim of this code is to improve the flow of information to investors about corporate operations. With compliance with the code, companies are sending a powerful indication to different stakeholders about their willingness to meet the recent standards related to CG (Chang et al., 2006; Sheridan et al., 2006).

The Financial Reporting Council continues to regularly publish updated versions of the Combined Code as a result of the change in the global CG guidelines and also with the development in the corporate environment in the context of the UK.

It issued an updated version in June 2006, then in June 2008, 2010, and the new edition of the Code was published in September 2012. The changes from the version of 2003 to 2006 were related to the chairman and shareholders; for the chairman, if he was independent on appointment he was allowed to sit on the remuneration committee. With regard to changes related to shareholders, they can vote by proxy but having the option of withholding their vote. However, the main difference between the 2006 and 2008 edition is the removal of the restriction regarding the Chair of more than one FTSE 100 company. Moreover, for companies outside FTSE 350, if the chairman was independent on appointment time, he is allowed to sit on the audit committee (The Combined Code, 2008).

Following the 2007/2008 global financial crisis, the UK government asked Sir David Walker to review corporate governance in UK banks and other financial institutions. The Walker Review was published in November 2009 and made some recommendations. The Walker Report (2009) provided a complete review of CG in the banking sector; however, it was applied to all institutions, not only banks (Adams, 2012). Incorporating the findings of the Walker Report, the new version of the UK CG code (previously known as the Combined Code) was published in 2010. The changes aim to reinforce the quality of the board and help the board to become more effective and accountable to shareholders. The new code emphasised on the leadership of the chairman; therefore, one main area in the code is about the chairman responsibility in leading the board. In addition, there is more focus on evaluating board performance and a composition of the board; there is a need to have a balance of knowledge, skills, and independence.

Moreover, it calls for the necessities of directors to have enough time to discharge their responsibilities effectively, and it also stressed the role of non-executives in developing strategies. Finally, the new edition of the Code was published in September 2012; the new UK CG Code (2012) included limited changes to the previous code; these changes are related to audit committee and boardroom diversity. This new edition will continue to be applied on “comply or explain” base.

In sum, it can be argued based on the above review that the development of CG policy in UK has undergone an essential, and relatively long, process of adjustment and development from the time when the Cadbury Report was published in 1992 to create the recent series of codes. Moreover, it is a self-regulatory system which means that there is a lack of enforcement in the CG system in UK.

2.3 Approaches towards Developing CG Indices

In general, CG indices have been used in the extant literature to assess the quality of CG which are developed either by rating agents (e.g. Standard & Poor, Credit Lyonnais Securities Asia, Governance Metrics International, etc.) or researchers (see for example, Black et al., 2012; Bozec and Bozec, 2012; Drobetz et al., 2004; Van den Berghe and Levrau, 2003). Accordingly, the next sub-sections review CG indices developed by rating agents and academics in order to construct an index reflecting the UK CG environment.

2.3.1 Rating agencies-constructed CG indices

A number of rating agencies and professional bodies have developed indices to evaluate CG quality such as Standard and Poor's (S&P), Institutional Shareholder Services (ISS), Credit Lyonnais Securities Asia (CLSA), The Corporate Library (TCL), and Governance Metrics International (GMI) (Bozec and Bozec, 2012; Epps and Cereola, 2008). There are many similarities between rating agencies-constructed CG indices. First, they are usually constructed based on international best practices such as OCED principles, national CG recommendations, disclosure requirements in company acts, and accounting standards (Florou and Galarniotis, 2007). Second, the majority of these rating systems focused on certain dimensions to evaluate CG quality namely: board of directors, shareholders' rights, disclosure and transparency (Bozec and Bozec, 2012; Florou and Galarniotis, 2007). Third, in relation to data collection, annual reports, archival analysis, websites and press releases are the primary sources to collect CG information (Van den Berghe and Levrau, 2003). However, some rating systems (e.g. Standard & poor, 2003) used an interactive system such as interviews with the key players (i. e. CEO, company secretary, directors and key shareholders), or company surveys (e.g. ISS ratings) (Danies et al, 2010; Florou and Galarniotis, 2007).

On the other hand, there are substantial variations between rating agencies-constructed CG indices in terms of CG indicators selection, weighting strategy, and sample coverage. Regarding CG indicators selection, the ISS is composite of 225 variables which based on 61 rating criteria and it includes 8 categories which mainly focused on board of directors, auditing, directors' compensation and

ownership. Moreover, the GMI measure uses more than 600 items variables based on 7 categories, including for example board accountability, financial disclosure and internal controls, shareholders' rights, and socially responsible investing issues. While the S&P ratings focus on 4 sets: stakeholders' rights, ownership structure, disclosure and transparency and, board structure and process (Florou and Galarniotis, 2007 and Van den Berghe and Levrau, 2003). With regard to weighting strategy, most rating agencies such as GMI and S&P assign different weights to CG indicators based on analysts' subjective views. In this context, Balling et al. (2006) argued that assigning different weightings to governance indicators may be confusing because the relative importance of each indicator differs from time to time, industry to industry, and country to country. In terms of sample coverage, the ISS rates over 5200 US companies and 2300 international companies while the TCL provides rates for over 2000 US companies and the GMI rates about 3400 US and international companies. These ratings also cover a wide range of countries, for example, the CLSA ratings cover 25 emerging markets, Deminor Rating covers 17 European countries and the ISS governance scores cover developed countries (Epps and Cereola, 2008). Moreover, they are typically limited to the largest public companies (Bozec and Bozec, 2012).

To sum up, although these CG scores give useful information on the quality of governance in rated companies to investors and put pressures on companies to comply (Mallin, 2001), the subjectivity of the CG rating agencies may account for bias (Zheka, 2006) as well as companies may interfere with the rating system (Daily and Dalton, 2004).

2.3.2 Researcher-constructed CG indices

The second approach to measure the quality of CG is academic-constructed indices where researchers manually construct their CG index based on publicly available information, mainly firm's annual reports (e.g. Bassen et al, 2008; Black et al. 2012; Ponu and Ramthandin, 2008; Florou and Galarniotis, 2007, Price et al, 2011; Samaha et al., 2012) or based on questionnaire-based surveys (e.g. Balasubramanian et al., 2008; Black et al., 2006; Toudas and Karathansis, 2007; Tsipouri and Xanthakis, 2004). These indices were usually developed based on fewer CG items and focused on certain dimensions such as board of directors, disclosure and transparency, and shareholder rights (Bozec and Bozec, 2012). In addition, most prior studies employed un-weighted dichotomous index and used the binary system (1 or 0) to objectively measure the CG quality. However, this approach has been criticised in that the researcher is vulnerable to judgemental errors and bias (i.e. judgemental and selection bias) (Florou and Galarniotis, 2007).

In conclusion, this thesis follows a researcher-constructed CG index approach for three reasons. First, there is a clear lack of consistency between ready-made indices, for example, scoring methodologies sometimes are treated as "confidential property" (Balling et al., 2006); missing or unavailable CG data is a common occurrence, and companies may get involved in with these rating agencies and request an "upgrade" (Daily and Dalton, 2004). Second, the relative importance of CG dimensions would be different across different industries, companies, periods and countries (Donker and Zahir, 2008). Contrary to the "one size fits all" approach to CG, the researcher believes that each country is unique in

its legal framework, corporate ownership structure, and the financial system which determine its CG system (Balling et al., 2006; Davies and Schlitzer, 2008). Third, subjectivity of the CG rating agencies may account for bias (Zheka, 2006). Therefore, a corporate governance index (CGI) is constructed in order to assess the quality of CG practices of listed UK firms; this index reflects the requirements and recommendations of the UK Combined Code (2003). The next section presents the process of developing CG index that is used in this thesis.

2.4 Crafting the UK Corporate Governance Index

Unlike subjective analysts' rankings, which are based on their perceptions of CG quality, this thesis develops a CG index based on actual disclosures in the firms' annual reports. The annual reports are well thought-out to be a common communication means by which companies disclose their CG information (Healy and Palepu, 2001). Therefore, the annual reports are considered a vital source of information to large shareholders when making their investment decisions. Although there are various channels of communication, such as company website and press releases, the use of company annual reports is widely accepted to measure CG (see for example; Black et al. 2012; Hellman, 2005). In this context, prior studies indicated that written company information, including the annual reports, is the highest-ranked communication channel that institutional investors used (Hellman, 2005). In the same spirit, this thesis has also constructed its own CG index to assess the quality of CG among listed UK firms based mainly on the information provided about CG in companies' annual reports. The crafted CG index is constructed based on the recommendations of the UK Combined Code

(2003) as an international benchmark. The process to construct the CG index was carried out in two stages. The first stage involved choosing the initial CG items, categorising these items and then modifying the index in accordance with the recommendations of the UK Combined Code (2003). The second stage was designed to score and weight CG items and then calculates the composite CG index. The rigorous process of developing the CG index is explained in the next sub-sections.

2.4.1 Selection of CG items

The key step in constructing the CG index is determining the governance attributes which form the basis to measure CG quality. During this stage, a careful review of the recommendations of the UK Combined Code (2003) and previous literature discussed in Section 2.3 enables the selection of CG items and then designing a preliminary CG composite index. In general, CG indexes have some common categories including board responsibilities, board structure and independence (e.g. Black et al. 2012; Black et al., 2003, Florou and Galarniotis, 2007, Klapper and Love, 2002, and Cornelius, 2005), accountability (e.g. Black et al. 2012; Klapper and Love, 2002; Price et al, 2011), and shareholders rights (Ananchotikul 2008, Gompers et al., 2003; Price et al, 2011). These CG provisions are considered to be very important for the proper functioning of a firm. Therefore, for the construction of CG index used in this thesis, the researcher tries to consider most of these attribute that are at the same time consistent with the UK Combined Code (2003).

Pre-testing a research instrument (i.e. CG index) is a significant step in ensuring its reliability and validity (Easterby-Smith et al., 2012; Hussey and Hessey 1997). To check the appropriateness of the CG index for measuring CG, the initial index was sent to five academics having a PhD to refine the index and identify any gaps or inconsistencies. This checking process helped to modify the CG items in the index. Another strategy for giving constructive criticism and suggestions were provided at several academic conferences and workshops which significantly improved content validity of the CG index (Churchill and Iacobucci, 2009). After several adjustments, the revised index was suitable to act as a benchmark for the UK listed companies. The product of this stage is the final CG composite index which consists of 26 items distributed across the following three sub-indices in the following order:

Board composition and independence index (BCII) (5 items). This sub-index covers items related to board structure and independence. Board independence is considered a core element of CG (Dahya et al., 2008); therefore, this sub-index covers the issue of the independence of the board and the separation of the roles of CEO and Chairman (In the UK, these roles should be split). This separation gives a good indicator that there is a division of the powers in the board, and, consequently, it indicates more independence. In addition, it considers board size as the board should be of satisfactory; it is argued that larger boards can be less effective than small boards (Hermalin and Weisbach, 2003). Also, Lasfer (2006), among others, suggested that larger UK boards cannot monitor or control the agency problem as well as smaller boards.

Board practice and process index (BPPI) (13 items). This sub-index focuses on board practices and process. We assess whether the board meets regularly. Frequent board meetings allow for better communication between management and directors; therefore, it is preferred to have frequent board meetings. A previous study by Brick and Chidambaram (2007) found a positive association between board meetings and firm value, implying that an increase in board meeting gives an indicator to the rise in the level of monitoring by the board. This is consistent with the argument of Vafeas (1999) that board meetings' frequency can be used as a proxy for strategic control. The UK combined code states that *"The board should meet sufficiently regularly to discharge its duties effectively"* (provision A.1.1). In addition, in this sub-index, we assess whether the company has two key committees: the nomination and remuneration committees. According to the combined code *"There should be a nomination committee which should lead the process for board appointments and make recommendations to the board"* (provision A.4.1). The code also indicates that the *"The board should establish a remuneration committee of at least three, or in the case of smaller companies two, members who should all be independent non-executive directors"*(provision B.2.1). Moreover, this sub-index assesses other practices related to the formal induction process and the election of directors.

Accountability and audit index (AAI) (8 items). As the board is accountable to shareholders, this sub-index covers the accountability and audit issue. Having an audit committee is one of the requirements of the UK combined code *"The board should establish an audit committee of at least three, or in the case of smaller*

companies, two members, who should all be independent non-executive directors” (provision C.3.1). Therefore, we assess the presence of audit committee and the independence of its members; the UK combined code (2003) also promotes audit committee members’ independence. Furthermore, this sub-index considers other issues related to the financial experience of the audit committee members, the review of the internal control system and others. Appendix (1) provides more detailed information about the UK CG index and its component sub-indices which has been designed to measure the composite CG score. After selecting the CG items, the next stage is scoring these items.

2.4.2 Scoring CG index

There are two widely used approaches to scoring the CG items: weighted and un-weighted approach. The weighted index tends to apply weighted score to each item based on its importance. In this context, Balling et al. (2006) argued that using a weighted score has been criticised because it may introduce a bias towards a particular user orientation although the items may refer to more than one user. Due to the criticisms of the weighted approach, many prior studies use the un-weighted approach in which all CG items in the index are considered to be of equal weight (see for example; Black et al. 2014; Black et al. 2012; Price et al, 2011). According to this approach, each of the CG items is scored using binary system in which each item is scored as “1” for the presence of the measured criteria in the firm, and “0” otherwise. This thesis adopted the equally weighted index in order to avoid the subjective judgement of assigning weights to the CG items. This approach may not reflect accurately the relative importance of

governance elements; but it has the advantage of being transparent and at the same time it is quite objective (Florou and Galarniotis, 2007).

2.4.3 Measuring CG index

Each CG sub-index was computed by adding all actual scores obtained and then dividing this sum by the maximum possible scores for each company. Hence, each CG sub-index can range in value from 0 to 1. Moreover, the total corporate governance scores (CG_SCORE) for each company is defined as a sum of all sub-indices scores divided by 3 (the number of sub-indices). Since each sub-index effectively runs from 0 to 1, this produces equal weights for the sub-indices. After measuring the CG indices, all CG scores had been tested both manually and statistically to guarantee their reliability and validity, this issue will be discussed in the next sub-section.

2.4.4 Assessment of Validity and Reliability of CG Index

This thesis constructs a CG index to measure the quality of CG. Therefore, it is critical to ensure that the CG index does indeed measure what it is aiming to measure (i.e. validity) and it will do this in a consistent manner (i.e. reliability) (Sekaran and Bougie, 2010). In the same vein, Hair et al. (2007) mentioned that validity is related to accuracy, while reliability is related to consistency. Therefore, it is vital to assess the validity of the index, especially when using a newly constructed measuring instrument (i.e. CG index). Validity is defined as “*whether an instrument actually measures what it sets out to measure*” (Field, 2009: 11). In this context, Saunders et al., (2012) suggested three methods for

assessing validity: (1) face validity, (2) content validity and (3) construct validity. First, face validity aims to ensure that the measure appears, on the face of it, to measure the concept which is intended to measure (Saunders et al., 2012). Face validity can be achieved by asking a colleague or an expert to confirm that the index measures what the researcher intends to measure. The face validity of the CG index is supported through the pre-testing as discussed earlier in this chapter (see Section 2.4.1). Second, content validity aims to “ensure that the measure includes an adequate and representative set of items that tap the concept” (Sekaran and Bougie, 2010: 206). In addition, Saunders et al. (2012) referred to content validity as the sufficient items being included in the measurement tool. Content validity of the CG index can be achieved by the careful definition of the research phenomena through literature review of CG and also by using a panel of professional judges to judge which items are to be included in the measurement (Vaus, 2002). In the current study, the initial CG index was pre-tested with five academics to check whether the CG items in the index adequately measure the level of CG (content validity). The results of pre-test method showed that the CG index captures adequate and representative set of dimensions to assess good CG. Finally, construct validity “ensures that the results obtained from the use of a measure are consistent with the theories in which the test is designed” (Sekaran and Bougie, 2010: 207). The assessment of construct validity requires the examination of the correlation between the total CG index and its component sub-indices (see for example; Black et al. 2012; Hassan, 2012; Samaha et al., 2012). In the current study, Table (2.1) shows Pearson correlation coefficients between total CG index and its sub-indices. The Pearson correlation between CG_SCORE and

its sub-indices (BCII, BPPI, and AAI) is positively significant, with correlation coefficients from 0.6741 to 0.5844., at the 0.0001 level. Moreover, the inter-sub-indices correlation is positively significant but relatively low which means that co-linearity between sub-indices is limited.

Table (2.1): Pearson’s Correlations between CG Index and its sub-indices

Variables	CG_SCORE	BCII	BPPI	AAI
CG_SCORE	1.0000			
BCII	0.6741***	1.0000		
BPPI	0.5621***	0.1885***	1.0000	
AAI	0.5844***	0.1650***	0.2055***	1.0000

Notes: CG_SCORE: Corporate Governance Index; BCII: Board Composition and Independence Index; BPPI: Board Practices and Process Index; AAI: Accountability and Audit Index. ***, **, * indicate a significance level of 1, 5 and 10%, respectively.

After checking the validity of the research instrument, it is important also to assess its reliability. According to Field (2009: 268) reliability is defined as “whether an instrument can be interpreted consistently across different situations”. In the same vein, Sekaran and Bougie (2010:203) described reliability as a signal of both the stability (i.e. the ability of the measure to remain the same over time) and consistency (i.e. the homogeneity of the index items as one set in measuring a concept) of measuring the concept by the research instrument. Reliability can be achieved through different methods such as test-retest reliability and the internal consistency method (Hussey and Hussey, 1997; Sekaran and Bougie, 2010). In the current study, test-retest reliability method was applied to determine the reliability of a measurement by repeating the scoring process and comparing the results. In this study, I calculated CG score for all annual reports at one time and after a short period of time, samples of these reports are scored

again. The resulting scores yielded from the second time phase match exactly with those arrived at the first time round. To improve the reliability of CG scores, the scoring process for 10 randomly selected companies from the sample was done by three academics and it reproduced the same results suggesting that CG index is reliable (Saunders et al., 2012).

Moreover, the internal consistency method measures the reliability of a test in terms of its internal consistency either across all items or across subgroups of items from the index. Litwin (1995: 21) defined the internal consistency method as *“an indicator of how well the different items measure the same issue. This is important because a group of items that purports to measure one variable should indeed be clearly focused on that variable”*. Cronbach's alpha is widely used to assess internal consistency reliability (Easterby-Smith et al., 2012). Alpha coefficient ranges in value from 0 to 1. The higher the correlation coefficient (0.70 or over) is, the more reliable the research instrument (Easterby-Smith et al., 2012). In the current study, the Cronbach's alpha for CG_SCORE and its sub-indices (BCII, BPPI, and AAI) are 0.733, 0.815 and 0.786, respectively indicating that internal consistency between the three CG sub-indices is high. We conclude that the crafted CG index is reliable.

2.5 Summary

This chapter highlighted the development of UK corporate governance where the empirical work took place. The chapter also describes the process of constructing CG index used in this thesis. In addition, this thesis measures the quality of CG

based upon a self-constructed index. An equally weighted CG index and dichotomous approach are used in addition to the reliability and validity tests, to try to minimise the subjective view of the current study. The next chapter presents the first essay of this thesis.

Appendices

Appendix (1): UK Corporate Governance Index

This table presents the 26 CG items that are classified into the three CG sub-indices used to construct the CG index in this thesis. Each of the CG items is scored using binary system in which each item is scored as “1” for the presence of the measured criteria in the firm, and “0” otherwise

CG sub-indices	CG items	Provisions of the Combined Code (2003)	Decision Rule 1 = YES, 0 = No
Board Composition and Independence Index (BCII)	1. The chairman and chief executive officer roles should be separated.	A.2.1	1/0
	2. The chairman should be independent on appointment.	A.2.2	1/0
	3. At least half the board should consist of independent non-executive directors excluding the chairman.	A.3.2	1/0
	4. There should be an adequate board size ¹ .	supporting principle	1/0
	5. There should be a senior independent director appointed in the board.	A.3.3	1/0
Board Practices and Processes Index (BPPI)	6. There should be regular board meetings ² .	A.1.1	1/0
	7. The chairman should meet with the non-executive directors without the presence of the executives.	A.1.3	1/0
	8. The company should have a nomination committee.	A.4.1	1/0
	9. The independent non-executive directors should be the majority in the nomination committee.	A.4.1	1/0
	10. An independent non-executive director or the chairman should chair the nomination committee.	A.4.1	1/0
	11. All directors should have access to the company secretary's services and advice.	A.5.3	1/0
	12. All new directors joining the board should be given a full, official and tailored induction.	A.5.1	1/0

¹ This item will be measured by calculating the average board size of all companies and considering this average as a benchmark. The company will be given a score of 1 if the board size is equal to or less than this average; otherwise, the score will be 0

² This item will be measured by calculating the average number of board meetings for all of the companies and considering this average as a benchmark. The company will be given a score of 1 if the number of board meetings is equal to or more than this average; otherwise, the score will be 0.

	13. At the company's expense the non-executive directors should access to an independent professional advice.	A.5.2	1/0
	14. There should be re-election of all directors at regular intervals.	A.7.1	1/0
	15. There should be an insurance cover for legal action against directors.	A.1.5	1/0
	16. The company should have a remuneration committee.	B.2.1	1/0
	17. All the remuneration committee members should be independent non-executive directors.	B.2.1	1/0
	18. There should be no share options included in the remuneration for non-executive directors.	B.1.3	1/0
Accountability and Audit Index (AAI)	19. The company should have an audit committee.	C.3.1	1/0
	20. All the audit committee members should be independent non-executive directors.	C.3.1	1/0
	21. The audit committee should include at least one member with financial expertise.	C.3.1	1/0
	22. A review of the internal control system's efficacy should be done at least annually by the board.	C.2.1	1/0
	23. There should be a board statement on the going-concern status of the firm.	C.1.2	1/0
	24. At the AGM, all directors should attend, and the Chairmen of the nomination, remuneration, and audit committees should be available to answer questions.	D.2.3	1/0
	25. There should be a disclosure in the annual reports regarding the steps taken to make sure that board members have developed an understanding of major shareholders' views.	D.1.2	1/0
	26. Shareholders should receive the AGM notice and other related papers at least 20 working days before the meeting.	D.2.4	1/0

Chapter Three: Essay One

How Corporate Governance Affects Investment Decisions of Block Shareholders in UK Listed Companies: Has the Recent Financial Crisis Changed the Game?

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How Corporate Governance Affects Investment Decisions of Block Shareholders in UK Listed Companies: Has the Recent Financial Crisis Changed the Game?

Abstract

This paper examines the influence of Corporate Governance (CG) on block shareholdings of a sample of UK non-financial listed companies, from 2005 to 2009. It also looks at whether this relationship has changed during the recent financial crisis. The findings from panel data regressions show that, for the whole period, there is a significant positive relationship among CG and total block shareholdings, and it also indicates that board composition and independence is the only CG sub index that affects total block shareholders' investment decisions. Moreover, the results show that institutional investors pay more attention to CG matters as an important part of investment decisions. The results also indicate that there is no significant relation between CG and block shareholdings of management and directors. When testing this relation in the period preceding and during the crisis, the results reveal that the insignificant results of the impacts of CG score in the period prior to crisis became significant during the financial crisis period, thereby indicating that block shareholders view CG as particularly important during the crisis period. The findings suggest that firms need to sustain CG mainly board independence to enlarge its shareholder base and raise new capital.

Keywords: Corporate Governance, block shareholders, investment decisions, 2007/2008 global financial crisis.

3.1 Introduction

“Our investment group would never approve an investment in a company with bad corporate governance” (McKinsey and Company, 2002: 4)

Block shareholders play an important role in Corporate Governance (CG). Under the agency theory, ownership concentration is one of the control mechanisms that are used to solve the agency problems by aligning the interest between managers and shareholders. Theoretically, with the increase in ownership concentration, monitoring is expected to become more effective; block shareholders have the incentive and ability to monitor management and mitigate agency conflict and their large holdings are expected to alleviate the free-rider problem related to dispersed ownership (Shleifer and Vishny, 1986). Through their large stake in the company, it is cost-effective for block shareholders to monitor management; return would be sufficient to cover their monitoring costs (Canyon and Florou, 2002). Therefore, the presence of block shareholders and the size of their holdings is a common explanatory variable in CG research. Cronqvist and Fahlenbrach (2009) found statistically significant effects of block shareholders in investment, financial, and executive compensation policies. In the same vein, prior literature gave more attention to the effect of block shareholders, specifically institutional investors, on firm value and other performance measures (see for example; Nguyen et al., 2013; Thomsen et al., 2006). Institutional investors can influence firms to implement good CG, either by using their voting rights or by voting with their feet (Aggarwal et al., 2010). In the financial markets, institutional investors are very important and are considered key group as buyers, holders and sellers of securities as they can use their power to influence financial markets (Al-Najjar,

2010). Therefore, institutional block shareholders such as mutual and pension funds are well thought-out as an important players in the majority of financial markets, they are holding an increasing number of shares, and they are the largest shareholders of most publicly traded firms in western countries. In the United States and the United Kingdom, institutional investors have grown to be the main ownership group (Monks and Minow, 2004). For example, institutional investors control about 60 per cent of the outstanding shares of common stocks in the United States (Hayashi, 2003). In addition, in UK equity market institutional investors controlled about 80 per cent (Mallin et al., 2005).

In the same vein, many studies have explored the investment preferences of institutional investors. Starks (2009) found that institutional investors are interested, in particular, in firm's CG. In addition, the study by McKinsey and Company (2002), examined the preferences of institutional investors from different countries; the findings from that wide survey, which covered 31 different countries, revealed that institutional investors considered CG to be at the same level of importance as other financial indicators for their investment decisions. A similar survey conducted by McCahery et al. (2010) found CG to be important for investment decisions for institutional investors. Furthermore, Khanna and Zyla (2010), in their study of investors in emerging market, provided clear evidence that CG is also important for their investment decisions. However, there is limited prior research examining the preferences of block shareholders for CG; previous studies gave attention only to block shareholders by institutional investors (Khurshed et al., 2011). Moreover, argument on the need for good CG has

reignited due to the 2007/2008 financial crisis (Francis et al., 2012; Walker Review, 2009). This study, consequently, investigates an important policy question of whether firm-level CG affects investment decisions of block shareholders with particular focus on the period preceding, and during the financial crisis. Specifically, the study uses a unique corporate setting in UK, where the emphasis is on encouraging CG rather than imposing extensive mandatory requirements. These gaps in the literature form part of the motivation for this study. The researcher argues that the current empirical study is a more direct and objective test than asking survey respondents their opinions on the importance of CG. In addition, the scope of the study is extended to different types of block shareholders, rather than just the institutional investors and covers the time period across the recent financial crisis. Since most of the previous empirical studies have looked at the non-crisis period, the findings of this study would provide additional insights.

The main objective of this paper is to study the impacts of CG mechanisms on the investment decisions made by block shareholders. Four specific questions are raised:

- Does CG affect overall block shareholders' investment decisions?
- Which particular aspects of CG are more important in affecting their investment decisions?
- Do different types of block shareholders react differently to CG level?
- Have the recent financial crises changed the relationship between CG and block shareholders' investment decisions?

This paper examines the effect of CG on the investment decisions made by block shareholders; it focused on a sample of UK FTSE-350 non-financial companies. The empirical analysis was conducted for the whole period (2005–2009) for 695 firm-year observations. The results of panel regression indicate a significant positive relationship between overall CG and total block shareholdings. When classifying block shareholdings into different types, it is found that CG affects only institutional block shareholdings. The findings of the relationship between CG-sub categories and block shareholdings provide strong evidence that firms with better Board Composition and Independence Index (BCII) attract more block shareholders. In addition, the results point that those different categories of block shareholders have heterogenous preferences for different CG provisions. Finally, the results show that the financial crisis has significantly changed block shareholders' investment preferences as the relationship between CG and block shareholdings has changed during the financial crisis period. This suggests that improvements to CG, especially in the BCII aspect, attract more block shareholders. Overall, the results support regulatory initiatives aimed at improving CG quality.

This study extends and contributes to previous studies in a number of ways. First, this paper seeks to specifically examine the role of CG in attracting block shareholders not only institutional investors. Unlike the previous studies that have narrowly investigated institutional investors only, this paper provides evidence regarding a wider range of different types of block shareholders. It complements in particular the study by Gompers and Metrick (2001) in the U.S. that examined

the effect of firm characteristics on attracting institutional investment, and also the study by Ferreira and Matos (2008) that revealed that, in low investor protection countries, institutional shareholders prefer to invest in companies with good CG practices. Second, in contrast to most previous studies in which CG variables had been experienced in isolation, this paper examines the impact of CG using a composite measure of twenty-six dimensions and three sub-indices of CG. Third, unlike existing studies, this paper focuses on a less regulated environment of the UK compared with U.S., where UK regulations emphasise on encouraging CG rather than imposing extensive mandatory requirements. Finally, the paper is distinguished from prior literature by examining the preferences of block shareholders for CG for an interesting period (i.e., from 2005 to 2009), and it sheds important empirical insights on CG and preferences of block shareholders in both periods before and during the financial crisis.

The remainder of this chapter is organised as follows. Section 3.2 provides a brief discussion about ownership structure in the UK. This is then followed, in 3.3, by a discussion of the important of block shareholders. Section 3.4 discusses literature review on the relationship between CG and ownership structure and hypotheses development. Section 3.5 deals with the sampling and the empirical model used in this paper. Section 3.6 focuses on data analysis and the empirical results. Finally, section 3.7 covers the summary and conclusions of the study.

3.2 Corporate Ownership Structure in the UK

The UK can be described as having a well-developed market which is characterised with a diverse of shareholders. Mallin (2013) indicated that the legal system affects the ownership structure; in UK, the common law system enforces the protection of minority shareholders, and this results in more companies with diversified shareholders. The UK is generally described as a system of dispersed share ownership; in over 85 per cent of listed firms, it is rare to find shareholders holding more than 25 per cent, or more, of voting rights (Aguilera and Jackson, 2003). However the pattern of ownership in UK had changed in the last few decades; for example, in 1963, the proportion of shares held by individuals was 54 per cent, and it had fallen to 10.7 per cent in 2012. Moreover, there was a growing ownership concentration by institutional investors; the proportion of the UK equity market owned by institutional investors had increased from 42.4% in 1963 to 84.7% in 2004, and then to 70.1 % in 2012 (ONS, 2012); it is held mainly by unit trust 9.6 per cent, insurance companies 6.2 %, pension funds 4.7 % (ONS, 2012). At the same time, an increase in the overseas ownership level has been noticed; it increased from 7 % in 1963 to 53.2 % in 2012; and many of them are US investors and European Union countries (ONS, 2012). Table (3.1) provides an illustration of the main categories of ownership in the UK in different times; 1963 - 2012.

From reviewing the development of corporate ownership in UK, it is clear that there is an increase in the institutionalisation of share ownership (Amour et al., 2003). These institutional investors are more likely to become locked in to the

market and to the individual firms in which they hold stakes. This in turn would result in low turnover of UK institutional investors which would encourage other institutional investors not to sell their shares in firms with poor performance and instead to engage more with portfolio companies to enhance firm performance (Clark and Hebb, 2004).

Table (3.1): Main Categories of Ownership in the UK 1963-2012 (percentage of total equity owned)

Type of investor	1963	2004	2008	2010	2012
Individuals	54.0	14.1	10.2	10.2	10.7
Insurance companies	10.0	17.2	13.4	8.8	6.2
Pensions funds	6.4	15.7	12.8	5.6	4.7
Unit trust	1.3	1.4	1.8	8.8	9.6
Investment trusts	-	2.5	1.9	2.1	1.8
Banks	1.3	2.7	3.5	2.5	1.9
Other financial institutions	11.3	8.2	10.0	12.3	6.6
Charities, churches, etc.	2.1	1.1	0.8	0.8	0.6
Private non-financial companies	5.1	0.6	3.0	2.3	2.3
Public sector	1.5	0.1	1.1	3.1	2.5
Rest of the world	7.0	36.3	41.5	43.4	53.2
Total	100	100	100	100	100

Source: ONS Share Ownership (2012)

More encouragement is provided to institutional investors in order to be more active in the governance of their portfolio companies (Mallin et al., 2005; Myners, 2001). For example, the combined code 2003 section (2) puts forward some principles to institutional investors: “institutional shareholders should enter into a dialogue with companies based on the mutual understanding of objectives (Combined Code 2003, E.1)” and to “consider use of their votes (Combined Code, E.3)”. Furthermore, there is a significant trend in UK on the increasing collaboration between institutional investors aiming at developing CG and CSR standards (Aguilera et al., 2006). To sum up, there is a transformation in UK

ownership structure into ownership concentration; there is an increase in ownership concentration in the hand of small number of large institutions. These block ownerships, through their major position, can monitor management and align the interest between managers and shareholders; therefore, they are seen as important in reducing the agency conflict (Solomon, 2009).

Therefore, the focus of this paper is on how companies can attract these block shareholders investments. This issue is arguably neglected in the literature; how to encourage these institutions and other block shareholders to increase their holding as a means to solve the agency problem, and, to be more specific, does CG play an important role in affecting the allocation of these block shareholders' investment? Therefore, the total block shareholdings would be considered in this paper as well as different types of block shareholdings; with the aim of examining whether CG attracts these block shareholdings investments. Thus, at the centre of this investigation is the issue of whether aggregate block shareholders and different types of block shareholders are attracted by firms with good CG.

3.3 The Role of Block Shareholders in CG

A fundamental problem in CG arises from the trading off the cost and benefit of block shareholders (Shleifer and Vishny, 1997). Therefore, in the discussion of the role of block shareholders, it is important to discuss it from the perspective of both the benefits and the potential costs arising from the presence of block shareholders. First, the benefits of block shareholders in both the theoretical and empirical literature can be explained in terms of the "efficient-monitoring"

hypothesis. According to this hypothesis block shareholders have the potential to reduce the agency problem, and improve corporate performance (Berle and Means, 1932; Fama and Jensen, 1983; Jensen and Meckling, 1976; Shleifer and Vishny, 1986). Block shareholders have strong incentives and power to monitor management at a lower cost. On the other hand, the potential costs arise from the potential difference of interest among both minority shareholders and block shareholders (the expropriation-of-minority-shareholders hypothesis); as ownership concentration may lead to the extraction of the firms resources by block shareholders at the expense of other shareholders (Bebchuk, 1999). If there are different preferences among Block shareholders and minority shareholders, the former can force their preferences at the expense of the latter. Shleifer and Vishny (1997: 758) argued that *“Large investors may represent their own interests, which need not coincide with the interests of other investors in the firm, or with the interests of employees and managers”*. This means that there are two factors that motivate block- shareholders: the shared benefit of control and the private benefit. The literature is divided regarding the question whether block shareholders are rather beneficial or detrimental to the interests of minority shareholders (Becker et al., 2011); therefore, block shareholdings are seen in the literature as a mixed blessing (Gutierrez et al., 2012). The focus of this paper is driven by how to attract block shareholders in order to get the most benefit out of their monitoring roles; on the other hand, the private benefits of block shareholders is beyond the focus of this study. However, the literature identified that this private benefit of block shareholders can be mitigated when there are

strong legal protections and high law enforcement that provides higher protection for minority shareholders (La Porta et al., 1997).

While the literature has gone far in showing the importance of block shareholders and their effect, a much lesser part of the literature has considered the preferences of these shareholders in general (Bushee and Noe, 2000; Coombes and Watson, 2000) and more specifically their preferences for CG (Khurshed et al., 2011). Consequently, this paper contributes to prior studies by directly studying block-shareholders' investment preferences. Furthermore, since Block shareholders have heterogeneous beliefs, skills, and preferences (Cronqvist and Fahlenbrach, 2009), this paper also focuses on identifying the preferences of different types of block shareholders to CG. Gaining a better understanding of block shareholders preferences would help firms increase their shareholding base.

3.4 Hypotheses Development

This section briefly explains the definitions and unique aspects of agency theory that is adopted in order to explain how CG could affect the preferences of block shareholders. It provides justifications for the adoption of agency theory as the theoretical framework that forms the backbone of this paper.

Agency theory is mainly concerned with the various problems between shareholders and management. Shleifer and Vishny (1986) model the role of block shareholders as a partial solution of the agency conflict. Under agency theory, block shareholders serve as a partial solution to the free rider problem and, as such, should reduce agency costs and improve firm value. These block

shareholders aim at maximising the value of their stocks, therefore CG mechanisms have been established to ensure that; therefore, investors prefer companies with good CG as it provides them with evidence of good performance (Chalevas, 2011). Therefore with good CG shareholders' interests can be protected; La Porta et al. (2000) indicated that potential shareholders view CG as a set of mechanisms for the protection of the company. In addition, firms with poor governance structures are more likely to expropriate outside investors (Ferreira and Matos, 2008). Consequently, block shareholders prefer to allocate their investments to firms with better CG for a number of reasons. The first is that firms with better governance show signs of better operating performance and better firm value, and less unproductive corporate investment. The second reason is to avoid costly monitoring activities. Institutional investors as block shareholders often hold large portfolios, which entail high monitoring costs; therefore, investing in firms with better CG and higher quality disclosure (with strong internal monitoring mechanisms) replaces the need for costly monitoring activities (Bushee and Noe, 2000; Bushee et al., 2010). The third reason is that block shareholders prefer to invest in firms with better CG because it is easier to meet fiduciary responsibilities. Del Guercio (1996) showed that institutional investors allocate their portfolios to firms that are more likely to be viewed as prudent investments (with better CG) with a lower probability of negative outcomes resulting from managerial fraud or negligence. On the other hand, if institutional investors put their investments in poorly governed firms, they face a greater risk of not earning fair rates of return (Chung and Zhang, 2011). The fourth reason for investment in firms with good CG is that firms with better

governance would also show signs of higher stock market liquidity and lower trading costs. The final reason, for block institutional investors, political motivation creates incentives for them to give more attention for CG mechanisms (Smith, 1996).

The agency theory does not differentiate between the types of block shareholders. However, many studies have recently acknowledged that the identities of these shareholders have different implications for firms because of their differing objectives (Tihanyi et al., 2003; Tribo et al., 2007). Consequently, in this paper, the aim is not only to focus on the preferences of block shareholders, but also to examine whether these preferences toward CG vary with the different types of block shareholders. Therefore, to address heterogeneity across block shareholders, block shareholders are initially classify into different types as will be explained later.

3.4.1 Block Shareholders' Preferences and Total CG

There are two main streams of research to consider when examining the relationship between CG and ownership structure. The first stream concerns ownership structure effect on CG (the effectiveness of large shareholders in CG); ownership by large shareholders is a major approach to CG throughout most of the world (Hope, 2013). From the perspective of CG, block ownership is very important because, by holding large percentage block, shareholders would be more motivated to monitor (Shleifer and Vishny, 1986). Therefore, an extensive research had been devoted to the important monitoring role of block shareholders

(Cornett et al., 2007). Block shareholders had become active in CG; they had become more eager to force management to achieve shareholders' interests by using their ownership rights (Hartzell and Starks, 2003). For example, the study by Aggarwal et al. (2010) indicated that changes in institutional investment affect subsequent changes in CG. Hartzell and Starks (2003) also indicated that ownership concentration by institutional investors leads to improvements in the compensation practice. Bertrand and Mullainathan (2001) showed that the existence of block shareholders on the board would result in more control of executive compensation. In the same vein, Dong and Ozkan (2008) revealed that dedicated institutional investors control the level of compensation and, at the same time, strengthen the pay-performance link.

The second stream of research addresses shareholders' preferences in terms of CG. There is not, however, much research about this, either on the macro or micro level. Li et al. (2006) conducted a study that involved the macro level; in their study, they made a comparison of the patterns of block shareholders in different countries. Their results revealed that their variations depended on macro CG aspects; these aspects include disclosure requirements, law enforcement, and the level of shareholders protection. Aggarwal et al. (2005) reached similar results; their findings showed that U.S. mutual funds put more investment into countries that have good legal frameworks, higher shareholder rights, and better accounting standards. Kim et al. (2011) looked at a newer issue, examining whether CG in investors' home countries influence their patterns of international investment in emerging markets, such as Korea. Their results indicated that investors from low-

disparity countries do not prefer high-disparity stocks in Korea; investors from high-disparity countries are indifferent.

Other studies have focused on the micro level, for example the study of Chung and Zhang (2011) which showed that the proportion of institutions that hold a firm's shares increases with its governance quality. They also indicated that these institutions are attracted to firms with good CG, in order to meet their fiduciary responsibility as well as to minimise monitoring and exit costs. Bae and Goyal (2010) revealed that firms with better governance attracted more foreign ownership than poorly governed firms. Bokpin and Isshaq (2009) arrived at the same conclusion, indicating that foreign investors consider CG and disclosure practices in making their investment decisions in Ghana. Leuz et al. (2005) examined the preferences of institutional investors from a sample of both emerging and developed countries and showed that investors invest less into firms that are poorly governed. However, the study of Matsumoto and Uchida (2010) focused on Japan as a developed country and their results showed that both small boards and stock option adoptions increased the percentage of ownership by non-Japanese investors. Kim et al. (2010) also showed that improvements on CG attract more foreign investments and that domestic investors tend to care less about CG than their foreign counterparts.

Other studies examined also on the micro level which factors are more attractive to investors. Among these studies is that of Wei and Xiao (2009), which focused on the preferences that large shareholders in China have, concerning cash or stock dividends. Their results revealed that large investors generally prefer cash

dividends over stock dividends by non-publicly tradable shares (NPTS). The study by Al-Najjar (2010) focused on Jordan as an emerging market and showed that institutional investors consider many factors in their investment decisions; these includes, for example, capital structure, liquidity, profitability, growth rates. Cox et al. (2004) conducted a study into the UK as a developed country, showing that long-term investors consider social performance as a criteria in their investment decision making; they may exclude companies with low level of social performance because it might cause them to face more risk which in turn would affect their financial performance in the long run.

Therefore, these above mentioned studies indicate that block shareholders prefer investing in countries with high accounting disclosures and better shareholders rights while, viewed at the level of firms, they prefer mainly large ones that pay dividends and have better CG quality. Most of these studies focus more heavily on institutional investors, paying less attention to other types of block shareholders. Furthermore, most of these studies have been done on emerging economies rather than developed countries, which raise the question about whether CG quality matters in developed countries that have good shareholder protection. The current study, therefore, sheds light on the different types of block shareholders and their preferences in terms of CG, through examining the UK as a developed country with considerable shareholder protections and rights.

Based on the studies by Chung and Zhang (2011) and Ferreira and Matos (2008) that revealed a positive association between the proportion of a firm's shares

institutional investors held and its governance quality, we also hypothesise a positive relationship between the block shareholders and CG. According to agency theory, companies with better CG have lower agency cost, generate higher return, and perform better (Henry, 2010; Klapper and Love, 2004). Therefore, investors have strong incentives to put their investments in good CG companies; hence, the following hypothesis is examined:

H1: There is a positive relationship between CG and the level of block shareholdings.

3.4.2 Block Shareholders' Preferences and CG Sub-Indices

CG provisions do not have the same effect in attracting investors; Chung and Zhang (2011) showed that institutional investors were attracted only to two CG aspects: one is related to strengthening shareholder rights, and the other is related to the composition/operation of the board of directors. This shows that there are differences in the impact of CG provisions; this means that of all CG provisions institutional investors pay more attention to only the above mentioned ones. In the same vein, Khurshed et al. (2011) examined the effect of two internal CG mechanisms on institutional block-holding; they considered both directors' ownership and board composition in a sample of UK firms. Their findings revealed a negative relationship between institutional block-holding and directors' ownership, but on the other hand it showed a positive effect of board composition on institutional block-holding. Based on their results, it is recommended that institutional block-holders view ownership by directors as a substitute control mechanism while board composition is perceived to be complementary mechanism. These findings indicate that there are differences on the effect of CG-

sub indices on the investment decision of shareholders. Therefore, in this paper it is hypothesised that CG Sub-indices will have different effect on block shareholdings. Accordingly, the following hypothesis is examined:

H2: The preferences of block shareholders vary across different dimensions of CG.

3.4.3 Different Types of Block Shareholders' Preferences and CG

Consistent with previous researches which indicate that large shareholders differ from each other along different dimensions, such as their beliefs, skills, or preferences (Cronqvist and Fahlenbrach, 2009), the current study aims to contribute to this literature by studying the preferences different categories of block shareholders have in terms of CG. Studies have indicated that the identity of institutional investors has important implications for firms because they have different objectives and philosophy as for example they may be constrained by fiduciary responsibility or political concern (Bushee, 1998 and Bushee et al., 2010). Therefore, it is significant to distinguish between the different types, not only among institutional investors but among all block shareholders, when examining their differing preferences. Giannetti and Simonov (2006) examined if investors consider the quality of CG in making their stock selection decisions; they differentiated between two types of investors; those who enjoy private benefits and others who enjoy only security benefits. Their results showed that, whether they were domestic or foreign, institutional investors or small individual investors who generally place great value on security benefits are all less likely to invest in companies with poor CG. On the contrary, investors who have relationship connected with company insiders do not mind putting their

investments in companies that have poor CG. Moreover, Kim et al (2010) revealed that there is different stock valuation between different types of investors in terms of CG; these are foreign investors and local investors. They revealed that because foreign investors assign higher monitoring costs they may discount CG more severely than other domestic investors. In the same vein, Ferreira and Matos (2008) differentiated between independent and grey investors, and they showed that independent investors gave more attention to stock in countries that have more enforcement of legal environment, and, also, more attention to liquid stock than other grey investors. But at the same time, their results indicated that they have common preferences to invest in visible firms, large firms, and firms with strong CG indicators. Furthermore, Chung and Zhang (2011) examined whether different institutional investors exhibit different preferences towards CG structure. Their results showed that all different categories of institutional shareholdings had positive association with CG, but they also indicated that the strength of the relationship varies among the various categories of shareholdings.

These studies indicated that various categories of investors have different investment preferences in general, and toward CG in particular. But most of these studies were concerned with differentiating between various types of institutional investors; Chung and Zhang (2011) for example, indicated that various categories of institutional investors such as insurance firms, bank trusts, independent advisors...etc. Have different investment preferences due to differences in their fiduciary responsibilities. However, there is limited research that gave attention to other types of block shareholders. The study by Cronqvist and Fahlenbrach (2009)

showed that large shareholders have distinctly different investment and governance styles. Based on the findings of these studies, the following hypothesis is examined:

H3: Different types of block shareholders have different preferences of CG.

3.4.4 Block Shareholders' Preferences and CG Before and During the Financial Crisis

The current global financial crisis, 2008 financial crisis¹, has caused many economies around the world to go into recession (Ivashina and Scharfstein, 2010). There has been much speculation that the 2008 stock market meltdown, at least in part, flowed from CG shortcomings, such as excessive risk taking by managers who were concerned more about short-term bonuses while ignoring the long term value of their companies (Zingales, 2008). Yet, a systematic analysis of how CG affected ownership structure during this turbulent period is lacking. This paper pioneers the effort to address this gap. Therefore, whether this relationship has strengthened during the financial crisis period is tested.

Most studies conducted during the period of crisis examined the impact of CG on the performance of firms. The study by Beltratti and Stulz (2009) indicated that banks with better CG performed better during the credit crisis. Also, Leung and Horwitz (2010) examined the effect of management ownership and other governance variables on the stock performance of Hong Kong firms following the Asian financial crisis of 1997, and their results showed that companies with a

¹ The study considers the effect of the financial crisis had started in 2008; this is why the study classify the time period to pre-crisis (2005 to 2007) and during-crisis (2008 to 2009).

more concentrated management ownership displayed better capital market performance during that period. In addition, Elkinawy (2005), who focused on an emerging country during the financial crisis of the late 1990s, showed that liquidity, trade links, and CG were considered important determinants for mutual fund portfolio choices during the crisis. These results from previous studies indicate that companies with a good CG quality performed better during the time of crisis and also that investors considered CG to be of major concern in their investment decisions. However, this previous study focused on emerging markets, examining the preferences of block shareholders in a developed country like UK during crisis period would add to the previous literature. It is expected that block shareholders consider the effect of CG on wealth and risk of their shareholdings differently in crisis versus non-crisis periods. So, it is hypothesised that the association between CG and block shareholdings is strengthened during financial crisis. Therefore, the following hypothesis is tested:

H4: There was a change in the relationship between CG and block shareholdings during the financial crisis.

3.5 Research Design

3.5.1 Sample

The target population of the three-paper in this thesis is the UK FTSE-350 whose constituents make up around 90 per cent of the entire UK market capitalisation. These companies were chosen because this study aims to test the relationships between CG and block shareholdings on a sample of large UK companies. In the current paper, a panel dataset is used that covers the period from 2005 to 2009 inclusive. An important motivation for selecting this time frame is that it covered

the period preceding and including the 2007/2008 financial crisis and thus selecting this time period enables a comparison of the relationship between CG and block shareholdings in the periods preceding and during crisis. In addition, this time period enables investigating whether CG effect on block shareholdings and its different categories differ over years.

The sample selected is based upon the following criteria. First, companies must be active or survive for the entire period of the study, as the objective is to examine the relation between CG and block shareholdings for firms that survived during the financial crisis and this would facilitate the comparison in the period preceding and during the 2007/2008 financial crisis. Therefore, after excluding the delisted companies, the total number of companies decreased to 221 firms. Second, financial and utility (63) firms are excluded for a number of reasons: (i) the composition of the assets of both types of firms tends to be 'special' rather than 'typical', (ii) utility firms tend to have high leverage in terms of capital structure, and (iii) financial firms in the UK operate under strict government regulations and monitoring (Mehran et al., 2011). Finally, 19 companies without complete financial or CG data were excluded. These criteria reduce the final sample to 139 non-financial companies, for these companies complete data was available for each year of the sampling period. Therefore, the empirical work comprised 139 firms with complete data throughout 2005-2009 Table (3.2 - Panel A). The analysis was carried out on a sample of balanced panel data, covering a period of five years, based on a sample companies drawn from eight main industries, resulting in a total of 695 firm-year observations. Table (3.2 - Panel B)

presents the composition of the final sample by industry. Data about block shareholdings were collected manually from the annual reports of the companies and from FAME (Financial Analysis Made Easy) database. Data about CG were also collected manually from the annual reports of the companies. All financial data has been obtained from DataStream database.

Table (3.2) Sample Selection

Panel (A) Sample Selection		
UK FTSE-350 companies		350
Less		
Companies were delisted during the period		(129)
Companies in the financial and utility sector		(63)
Companies without complete financial data		(19)
Total final sample		139
Panel (B) Composition of the final sample by industry		
Industry	No. of Companies Included	%
Consumer services	39	28
Industrial	45	32
Oil and gas	11	8
Basic material	12	9
Technology	7	5
Consumer goods	17	12
Telecommunications	3	2
Health Care	5	4
Total	139	100

3.5.2 Variables: Measurement and Description

3.5.2.1 Dependent Variables

The dependent variables are Total Block Shareholdings (Total_BLOCK), block shareholdings of insurance companies and pension funds (BLOCK1), other

institutional block holdings such as banks, mutual, nominee/trust/trustee (BLOCK2), block shareholdings of corporations (BLOCK3), insider block shareholdings such managers and directors (BLOCK4), others block shareholdings (BLOCK5).

In academic literature, ownership concentration was measured using the fractional ownership of the largest shareholder (see Shleifer and Vishny, 1986), the number of block shareholders (see La Porta et al., 1998; Bennedsen and Wolfenzon, 2000), or the minimum fractional ownership that is equal to a certain threshold (Faccio and Lang, 2002; Thomsen et al., 2006; Tribo et al., 2007). Consistent with previous studies on ownership concentration, the total block shareholdings (Total_BLOCK) is defined as the percentage of shares held by shareholders with no less than three per cent ownership. Shareholders below this level do not have to be disclosed in the UK. The disclosure threshold¹ is three per cent in the UK (Companies Act 1995, Sections 198 and 199). A further distinction between different categories of block shareholdings was made. This classification was made to address heterogeneity across block shareholders. Block shareholdings is initially classified into the following two types: the first is institutional block shareholdings and the second is other block shareholdings. Then each type is divided into sub-types. The institutional block shareholdings are divided into two sub-types. The first is block shareholdings of insurance companies and pension funds (BLOCK1). The second category includes other institutional block holdings (BLOCK2), such as banks, mutual, nominee/trust/trustee and the like. The other

¹ According to Companies Act 1995, UK companies are required to disclose in their accounts the names of any investor who holds three per cent or more of the issued share capital.

block-shareholdings are divided into three sub-types. The first is block shareholdings of corporations (BLOCK3). The second (BLOCK4) includes insider block shareholdings such managers and directors. The third and final sub-type includes others block shareholdings (BLOCK5). Table (3.3) below provides a detailed overview of block shareholdings classification scheme.

Table (3.3) Block shareholdings classification scheme

Shareholding size	Block shareholdings (TOTAL-BLOCK)	
Investor type	Institutional Investors	Other Block shareholders
Investor Sub-Types	- Pension fund and insurance company (BLOCK1)	- Corporations (BLOCK3)
	- Other institutional investors (BLOCK2)	- Managers and directors (BLOCK4)
		- Others (BLOCK5)

Notes:

(1) TOTAL-BLOCK includes investors who own at least 3 percent of the company's shares. (2) Initially block shareholdings are classified into the two categories; institutional block shareholdings and other –block shareholdings. Institutional Block shareholdings are then further classified into two major categories: 1- shareholdings of pension fund and insurance companies.2- shareholdings of other institutional investors. While the other block shareholdings are classified into three sub-types:1- shareholdings of corporations.2- shareholdings of managers and directors.3- shareholdings of others.

3.5.2.2 Independent and Control Variables

CG_SCORE (CG score) is considered the main independent variable of interest; it is a composite measure of twenty-six dimensions and three sub-indices: Board Composition and Independence Index (BCII), Board Practice and Process Index (BPPI) and Accountability and Audit Index (AII). The twenty-six constructs included in the CG index are based mainly on the guidelines of the UK Combined

Code (2003). This combined code is well thought-out as key guide for international best practices; this is due to the UK was pioneer in showing the way in defining good CG practices starting from the Cadbury Committee in 1992. In this paper, both the aggregate CG-SCORE and the different CG sub-indices are used as independent variables to examine the effect of aggregate and sub-indices on block shareholdings. Detail description of the rigorous processes applied in developing the CG index was provided in (Chapter 2, Section 2.4) of this thesis and, therefore, is not repeated here.

Furthermore, the paper included a wide range of variables to control for potential omitted variable bias (Dahlquist and Robertsson, 2001). These control variables covered firm size (SIZE), leverage (LEV), turnover (TURN), dividend yield (DIVIDEND), stock price (PRICE), Return on Assets (ROA), and firm value (Tobin's Q). A large set of control variables are employed that were recognised before as determinants of shareholders' investment decisions. Following earlier work that acknowledged that investors prefer large companies, the size of firms is included (e.g., Aggarwal et al., 2005; Gompers and Metrick, 2001; Grosfeld and Hashi, 2005). The natural logarithm of total assets is used as a proxy for firm size (SIZE) in this paper. The level of leverage is included as proxy for risk level of a firm (LEV) which is measured by the debt-to-assets ratio (Chung and Zhang, 2011). Elkinawy (2005) mentioned that fund managers prefer firms with low leverage. To control for stock liquidity preferences, turnover (TURN) is also included which is measured by dividing the number of shares traded over the year by the number of shares outstanding (Ferreira and Matos, 2008). Research by

Bennett et al. (2000) found that increased competition among institutional investors resulted in increased institutional preference for liquidity. Also, Huang (2008) and Elkinawy (2005) indicated that fund managers tilt their holdings more heavily toward liquid stocks. Moreover, Jain (2007) revealed that institutional investors prefer to put their investment in stocks with low dividend yield while individual investors prefer stock with high dividend yield; therefore, dividend yield (DIVIDEND) is included. Stock price (PRICE) is measured by the annual stock price. Furthermore, firm's profitability and firm value are measured by return on assets (ROA) and Tobin's Q (TQ) respectively (Chung and Zhang, 2011). Kim et al. (2010) found that investors desire companies with higher Tobin's Q and higher ROA.

3.5.3 The Empirical Models

A series of regression analyses are performed to test our research hypotheses:

Model 1: The relationship between CG score and the total block shareholdings.

$$TOTAL_BLOCK_{it} = \beta_0 + \beta_1 CG_SCORE_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 TURN_{it} + \beta_5 DIVIDEND_{it} + \beta_6 ROA_{it} + \beta_7 TQ_{it} + \beta_8 PRICE_{it} + u_{it} \dots \dots \dots (1)$$

Model 2: The relationship between CG sub-indices and the total block shareholdings.

$$TOTAL_BLOCK_{it} = \beta_0 + \beta_1 BCII_{it} + \beta_2 BPPI_{it} + \beta_3 AAI_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 TURN_{it} + \beta_7 DIVIDEND_{it} + \beta_8 ROA_{it} + \beta_9 TQ_{it} + \beta_{10} PRICE_{it} + u_{it} \dots \dots \dots (2)$$

Moreover, another key issue related to this paper is to examine the association among each of the different types of the block shareholdings and CG score to test whether different types of block shareholders have different preferences of CG.

To test this relationship, the total block shareholdings are replaced in the previous regression models with the ownership from each of the five types of block shareholdings namely, *BOLCK1*; *BOLCK2*; *BOLCK3*; *BOLCK4* and *BOLCK5*. The definitions and operationalization of all variables are presented in Table 3.4.

Table (3.4) Summary of variable definitions and data source

Variable	Definition	Data Source
Panel A: dependent variables		
TOTAL_BLOCK _{it}	Percentage of shares owned by shareholders with at least 3% of the company shares. The total block shareholdings are split into its five components: shareholdings of pension fund and insurance companies (BOLCK 1); shareholdings of other institutional investors (BOLCK2); shareholdings of corporations (BOLCK3); shareholdings of managers and directors (BOLCK4) and other shareholdings (BOLCK5).	Annual Report
Panel B : independent variables		
CG_SCORE _{it}	A CG index containing of 26 items and each item scored 0 or 1. The total CG index is computed by the summing of the sub-indices dividing by three (the number of sub-indices).	Annual Report
BCII _{it}	A sub-CG index containing 5 items to measure board composition and independence.	Annual Report
BPPI _{it}	A sub-CG index containing 13 items to measure board practice and process.	Annual Report
AAI _{it}	A sub-CG index containing 8 items to measure accountability and audit.	Annual Report
Panel C: control variables		
SIZE _{it}	Natural log of the total assets	DataStream
LEV _{it}	Percentage of total debts to total assets	DataStream
TURN _{it}	Annual share volume over the year to shares outstanding	DataStream
DIVIDEND _{it}	Percentage of dividends per share to market price-year end	DataStream
ROA _{it}	Percentage of net income to total assets	DataStream
TQ _{it}	Market value of equity plus total debts to total assets	DataStream
PRICE _{it}	The annual stock price	DataStream

In studies of corporate governance, there is always concern about potential endogeneity (Bhagat and Bolton, 2008). Most previous studies documented at least two potential sources of endogeneity that may derail empirical results: simultaneity and unobservable heterogeneity (Wintoki et al., 2009). The current study employed two approaches to tackle this problem. First, previous studies suggested that the use of lagged values of the main explanatory variable diminishes simultaneity problems (see, for example, Larcker and Rusticus, 2010; Stiebale, 2011). In the same vein, Cornett et al. (2008) argued that the association between institutional investor and accrual policy is potentially subject to a simultaneity problem. To address this issue, they lagged institutional ownership by one year. This lag allows for the effect of any change in institutional ownership to show up in firm behaviour and performance (Cornett et al., 2008). Following the past studies, the lagged value of CG is used to mitigate possible simultaneity problems between CG and block shareholdings. Second, a broad number of control variables are included in this study that help in mitigating the omitted-variable bias and also the possibility that our results are affected by endogeneity. Moreover, we used panel data regressions which help to address issues of endogeneity that might happen from unobserved firm-specific heterogeneities (Black et al., 2005). Panel data regression techniques help to control for the unobserved heterogeneity component that remains fixed over time, thus reducing considerably the omitted variable bias problem. Panel data regression is chosen over simple time-series or cross-sectional data regressions for several reasons. It is the most efficient method for the analysis of data sets that combine cross-sectional and time-series characteristics (Baltagi, 2009). Panel data

is better than time-series or cross-sectional regression for controlling the heterogeneity among observations because it takes into consideration the relationship both within the unit of observation and across all the units (Baltagi, 2009; Adeoye, 2009). Other statistical advantages of panel data, mentioned by Adeoye (2009) and Hsiao (2003), include better degree of freedom, less collinearity between variables, more efficiency and more informative data. To sum up, panel data regression techniques contain more observations and are able to control for firm fixed effects by allowing the researcher to take into consideration the differences across companies. Therefore, it would reduce the risk of obtaining biased results (Baltagi, 2009).

Given the panel nature of the data, we test which model is appropriate: the fixed effect or the random effect model by using the Hausman test (Wooldridge, 2002). If the results reject the null hypothesis, suggesting that the fixed effect model should be used (this test is included in each of the regression tables). Furthermore, in all panel data regression models, a robust standard error is used. For example, Hoechle (2007) indicated that it is common to rely on “robust” standard errors in order to ensure valid statistical inference.

3.6 Empirical Results and Discussion

3.6.1 Descriptive Statistics

Table (3.5) reports the descriptive statistics for the independent (total CG score and all sub-indices), the dependent (block shareholdings), and control variables for each year as well as for the whole period (2005-2009), pre-crisis period

(2005–2007) and during-crisis period (2008–2009), respectively. A number of interesting results can be derived from the descriptive statistics. First, and consistent with the results of Aggarwal et al (2010), there is an increase in block shareholdings over time. More specifically, the average block shareholding increased during the whole period (2005–2009) from 32.32 per cent to 38.19 per cent, and from 32.45 per cent (pre-crisis) to 37.66 per cent (during-crisis). The average value of total block shareholdings for our sample is 35.56 per cent. In addition, among the five different types of block shareholdings, the highest average is obtained in the category of shareholdings of pension fund and insurance companies (BOLCK1) and shareholdings of other institutional investors (BOLCK2), with average of 5.91 per cent and 21.09 per cent respectively. We find also the lowest average of block shareholdings in shareholdings of managers and directors (BOLCK4; mean 1.94 per cent) and other shareholders (BOLCK5; mean 1.39 per cent) respectively. Interestingly, all different types of block shareholdings increase from the period preceding the crisis to the period of the financial crisis.

Second, the average of CG scores was found to increase from 0.7999 (2005) to 0.8436 (2009); it also increased from 0.8105 before the crisis to 0.8391 during the financial crisis. This indicates that there has been a notable improvement in UK CG as there is 3.52 per cent increase in CG score during the crisis period. In the same vein, the CG sub-indices similarly depict overall CG behaviour. The results reveal that the average score for BPPI (board practice and process index) was the highest at 0.9083. The results for AAI (accountability and audit index; average

score of 0.8384) show that, on average, companies perform well in this area. On the other hand, BCII (board composition and independence index) was ranked the lowest with an average score of 0.7190. In the same vein, Table 3.5 provides a closer analysis of the CG sub-indices before and during the financial crisis to gain additional insights. The average scores for the CG sub-indices, namely, BCII, BPPI and AAI have increased from 0.7065 (pre-crisis) to 0.7377 (during crisis), from 0.8978 (pre-crisis) to 0.9240 (during crisis) and from 0.8270 (pre-crisis) to 0.8556 (during crisis) respectively, suggesting a generally increasing trend in CG behaviour over time. This indicates that UK listed companies tend to comply with the recommendations of the CG code during a financial crisis in order to rebuild trust and to protect shareholders' interests. Table 3.5 shows that the average natural logarithm of total assets is 21.41, thus indicating that our sample consists of companies that are relatively large. The average ROA (LEV) is 7.8% (24.63%). In addition, the mean (median) value of TURN ratio, DIVIDEND and PRICE are 2.22(1.66), 2.82(2.54) and 6.611(4.507) respectively. Furthermore, the average Tobin's Q was 1.50 indicating that companies were highly valued in the market. Finally, drawing on the analysis of the descriptive statistics, a main policy implication for policy makers and regulatory authorities is that more consideration needs to be paid to strengthen requirements for board composition and independence and, by the same token, improve the quality of CG.

[Table 3.5 around here]

Table (3.6) reports the Pearson's correlation matrix between independent variables to test for multicollinearity¹. Statistically, the correlations among the independent variables are fairly low; this means that no multicollinearity problem is found. Both the variance inflation factors (VIF) and tolerance, are used as an additional test for multicollinearity; both of them were calculated for each independent variable. VIF statistics that is more than 10 and tolerance lower than 0.2 show a possible multicollinearity problem. The results of this test provide support for the Pearson's correlation coefficients; they are all within acceptable limits. This means that the correlation among these independent variables in this paper does not raise any serious problem that could affect results' validity.

[Table 3.6 around here]

3.6.2 Econometric Analysis

3.6.2.1 Regression Results of CG and Total Block Shareholdings

To test the relationship between total block shareholdings and CG scores, the regression is run using the lagged value of CG, by using (t-1) variable, to minimise the simultaneity problem as mentioned before. Table (3.7- Model 1) reports the results from the regression of block shareholdings (TOTAL_BLOCK) on the firm-level governance index (CG_SCORE) and company-related control variables. Therefore, if block shareholding is for period t , the CG_SCORE is measured at period $t-1$. The results indicate that CG_SCORE coefficient is statistically significant and positively related to TOTAL_BLOCK with R2 value

¹ Multicollinearity consider a problem if the correlation is > 0.80 (Belsley et al., 1980). Therefore, highest correlation coefficient amongst all is 0.6026 which is between TQ and ROA is still within the threshold.

of (0.1064); this result suggests that block shareholders consider CG when taking their investment decisions. The results also indicate that block shareholders prefer companies with high liquidity. These results provide empirical support for H1 and the findings of previous studies which indicate the importance of CG to investors (Ferreira and Matosm, 2008; Giannetti and Simonov, 2006; Khurshed et al., 2011). It also provides additional empirical support for agency theory. One theoretical implication of this is that the investors have strong incentives to put their investments in stocks of companies that have good quality of CG. Hence, companies commit to high levels of CG SCORE are able to alleviate agency conflicts and give investors more confidence in the company and make it more attractive to investors.

[Table 3.7 around here]

In addition, to investigate the relationship between each CG sub-indices and the block shareholdings, we re-ran the previous regression by replacing the CG_SCORE with BCII, BPPI and AAI sub-indices. Table 3.8 (Model 1) presents the findings of the regression of the impact CG sub-indices (BCII, BPPI and AAI) on block shareholdings. Running this regression gives a clear view about which CG provisions are considered by block shareholders in their investment decisions. The coefficient on BCII only is statistically significant and is positively related to TOTAL_BLOCK while, statistically, there are no connections between BPPI, AAI and TOTAL_BLOCK, suggesting that H2 is empirically supported. The results show that the BCII is the only CG sub-index that matters for total block shareholders' investment decisions and these results provide an evidence that

supports the results of prior literature (e.g., Chung and Zhang, 2011; Khurshed et al., 2011; McCahery et al., 2010) that indicated board independence and composition is an important aspect of CG. The positive association between TOTAL_BLOCK and BCII provides empirical support for the findings of Chung and Zhang (2011), which suggested that board composition is one of the most important provisions that attract institutional investors. Khurshed et al. (2011), in their study in UK, revealed a significant positive relationship between institutional block shareholdings and board composition. In addition, the study of McCahery et al. (2010) indicated that among others board independence considered important by institutional investors. Useem et al (1993) also revealed that board composition is a major important to US institutional investors. Overall, the results provided the evidence that board of directors plays an important role in affecting the investment decision of shareholders which will widen the shareholders base of the company. Therefore, board composition and independence can be considered as a point of strength in attracting block shareholders.

[Table 3.8 around here]

3.6.2.2 Regression Results of CG and Different Types of Block Shareholdings

The third hypothesis is to examine if different types of block shareholders have different preferences of CG. The previous regression that examines the association between CG and total block shareholdings is re-estimated by replacing the TOTAL_BLOCK with the BLOCK1, BLOCK2, BLOCK3, BLOCK4 or BLOCK5 in turns, and the results are, respectively, presented in Models 2 to 6 of Table 3.7. The coefficient on CG_SCORE is statistically significant and positively

associated with only two types of block shareholdings namely, BLOCK1 and BLOCK2. The R² in both model 2 and model 3 are 0.1100 and 0.1252 respectively which are higher than R² in models 4, 5 and 6 which have the value of 0.0246, 0.0186 and 0.0167 respectively. The results indicate that CG scores affect the investment decisions of both BLOCK1 (insurance and pension funds) and BLOCK2 (other institutional investors), while it has no effect on the other types of block shareholdings. The results suggest that only institutional block shareholders consider CG quality when they make their investment decision. The positive association between CG and institutional block shareholding offers empirical support for the results of Bushee et al. (2010), Chung and Zhang (2011), Khurshed et al. (2011) and Russell Reynolds Associates survey (2003, 2005) which pointed out the important role that firms' CG mechanisms play as an important criteria for institutional investors investment decisions. In contrast, the coefficient on CG_ SCORE is negatively related to managerial block shareholdings (BLOCK4), but it is not statistically significant; thus it fails to present support to Giannetti and Simonov (2006) empirical results which suggested that managers and directors do not mind to invest in companies with poor CG where strong motivation to extract private benefits by controlling shareholder exists. In the same vein, managers and directors have access to private information and, therefore, in the case of weak CG they will not be affected because by having this information they can monitor easily and can protect their interests. Therefore, these findings highlight the dissimilarity in investment preferences among managerial and institutional block shareholders.

In an unreported additional regression that has been run using the aggregate institutional investors, the coefficients on CG_SCORE remain positive and significantly related to the aggregate institutional investors. This may be explained that institutional shareholders build up large stakes in some companies so they have a keen interest in ensuring that companies run well. In conclusion, it can be seen from Table (3.7- Models 2,3,4,5,and 6) and the previous additional regression that hypothesis H3 is supported; the results show that different block shareholders have different preferences for CG, and provide the evidence that only institutional investors consider CG in their investment decisions.

In respect to other explanatory variables,, the results indicate that (BLOCK1) have preferences for large companies which is consistent with Gompers and Metrick (2001) who revealed that stocks of larger companies are preferred by institutional shareholders. Kang and Stulz (1997) found that insurance and pension fund prefer to invest in large companies. BLOCK1 also has preferences for high liquidity. Huang (2008) indicated that institutional shareholders have preferences for more liquid shares. The findings also show that BLOCK2 and BLOCK 5 prefer small companies and BLOCK3 prefers companies with fewer dividends. The results also indicate that different types of block shareholders have different preferences in their investment decisions with regard to TQ. The results indicate that there is a negative relationship between TQ and all of BLOCK 2, BLOCK3 and BLOCK5 but it is non-significant relationship. Chung and Zhang (2011) reached to a similar result as they revealed a negative relationship between TQ and institutional ownership in a sample of U.S companies. On the other hand, the results revealed a

positive relationship between TQ and both BLOCK1 and BLOCK4. Finally, with regard to block shareholders preferences for ROA the results indicate that there is a non-significant negative relationship between ROA and all the different types of block shareholdings. Khurshed et al. (2011) have reached to similar results where there found non-significant relationship between ROA and institutional block shareholdings in a sample of UK companies.

In addition, in order to highlight which CG sub-indices are more important to each type of block shareholders, Table (3.8- Models 2,3,4,5 and 6) illustrates the regressions results between CG sub-indices and different types of block shareholdings. The results revealed a significant and positive association among BCII and BLOCK2; it is a strong association between BCII and BLOCK 2 where it is significant at the 1% significance level and R2 is 0.1390. These results provide evidence that is consistent with previous studies (Khurshed et al., 2011; Useem et al., 1993) that board composition, members' expertise and the presence of independent members are crucial aspects in the opinion of institutional investors. In the same vein, Russell Reynolds Associates survey (2003, 2005) indicates that about 80 per cent of the UK institutional investors give important attention to the quality of the company's board of directors. A significant positive association is also found among AAI and both of BLOCK1 and other block shareholders (BLOCK5) implying the importance of accountability and audit to their investment decisions. With regard to R2 in models 1 and 5 the values of R2 are 0.1278 and 0.0199 respectively which is less than R2 in model 2 (0.1390).

In summary, the evidence provided above supports, in general, my third hypothesis (H3). That is block shareholders have different preferences in terms of CG provisions.

3.6.2.3 Regression Results of CG and Total Block Shareholdings Pre- and During the Financial Crisis

One of the main contributions of this paper is to examine an important policy query of whether firm-level CG affects the block shareholdings before and during global financial crisis periods. To answer this question, the sample period divided into two sub-sample periods: pre-crisis (2005 to 2007) and during-crisis (2008 to 2009), and then re-run the previous two models (Model 1 in both tables 3.7 and 3.8). The results of these regressions are presented in Tables 3.9 and 3.10. In respect to total CG, the results indicate that in the pre-crisis period (Table 3.9- Model 1); there was a non-significant positive relationship among CG_SOCRE and total block shareholdings. This implies that investors are giving less focus to the quality of CG when investment opportunities are plentiful. In contrast, during the financial crisis period (Table 3.9- Model 2), a positive and significant relationship among CG_SOCRE and total block shareholdings is found. This result shows that the relationship has changed in the period during the crisis, since there was no relationship between CG and block shareholdings in the pre-crisis period; however, during the crisis period, it turns to be a positive and significant association among them. This suggests that the improvement in CG results in attracting more shareholders to allocate their investments and this also indicates that block shareholders considered CG an important determinant for their portfolio choices during the financial crisis. When looking at the R2 statistics in (table 3.9) in both pre and during crisis, it is noticed that R2 has changed from

0.1853 in the pre-crisis period to 0.1349 in the during crisis period. Also, in (table 3.10) the R2 statistics has changed from around 0.20 in the pre-crisis period to 0.14 in the during crisis period. Although R-squared value is low in the during crisis period but we have statistically significant predictors, and we can still draw important conclusions about how changes in the predictor values are associated with changes in the response value.

Hence, the hypothesis H4 is empirically supported, confirming that the relationship between CG scores and block shareholdings has changed during the financial crisis. Moreover, the results show that there is a significant positive association among block shareholdings and both TURN and leverage in the during crisis period.

[Table 3.9 around here]

Regarding CG sub-indices, Table (3.10- Models 1 and 2) shows the results of the relationship between CG sub-indices and block shareholdings before and during the financial crisis. Model (1) deals with this relationship in the pre-crisis period and it reveals a significant positive relationship between AAI and block shareholdings; this means that block shareholders give more attention to accountability and audit in the pre-crisis period. Furthermore, Table (3.10 - Model 1) shows non-significant relationship between other CG sub-indices and block shareholdings. In contrast, during the financial crisis period (Table 3.10- Model 2), there was a significant positive relationship between BCII and block shareholding and no significant relationship with other CG-sub indices. The results imply that the preferences of block shareholders to CG sub-indices differ

over time from before to during financial crisis period. This result provides evidence to the important role of the board composition and independence in attracting block shareholders during crisis period. This result reveals that board of directors is an important internal CG mechanism that monitors and advises management to protect shareholders' interest and this result offers empirical support for the results of Adams and Ferreira (2007) and Francis et al. (2012).

[Table 3.10 around here]

3.6.3 Robustness Checks

We conducted a series of robustness checks in order to ensure that our results are rigorous. First, a random-effect Tobit model is used to re-run the regressions for different types of block shareholdings; it is widely used to deal with the censored nature of different block shareholdings data (Abdioglu et al, 2013). The results of the Tobit regression analysis are shown in Table (3.11). Obviously, the results of Tobit regression are in line with the results presented in Table (3.9), thereby implying that our results are robust.

Second, we introduced an additional explanatory variable; an industry effect is controlled through the inclusion of industry-specific dummy variables to control for any preferences block shareholders have for particular industries. Grosfeld and Hashi (2005) indicated that ownership concentration may vary across industries. The CG SOCRE coefficient did not change and stayed positive and significant (see Table 3.12 - Model 1). Thus the results of this additional test provide additional support for earlier results. We also included annual stock return in the

model as another additional explanatory variable following Giannetti and Simonov (2006) and the results remain largely the same (see Table 3.12 - Model 2); we obtain results consistent with the earlier results.

Finally, an additional regression is done, to examine if CG have an impact on block shareholdings, using a different classification of block shareholdings. In the new classification, the block shareholdings is classified to 7 sub-categories; by keeping the previous first four types of block shareholdings and re-classifying the fifth category into other three types as follow: (BLOCK5a) includes states, governmental agencies, governmental departments or local authorities, (BLOCK 6) includes families and individuals who are outsiders and (BLOCK 7) includes others such as foundations or research institutes. The results of this additional test provide support to the previous results suggesting that CG only matters to institutional block shareholders as presented in Table (3.13). These further analyses recommend that our results are robust to different measures and to the inclusion of extra variables.

[Tables 3.11, 3.12 and 3.13 around here]

3.7 Summary and Concluding Remarks

The need for effective CG has been of main attention due to the recent financial crisis (Francis et al., 2012; Walker Review, 2009). Therefore, in this paper, an important policy question of whether the quality of firm-level CG has any effect on the investment decisions of block shareholders in UK from 2005 to 2009 is investigated, before and during financial crisis periods. The study is also novel in

employing a new detailed classification for block shareholdings to explore the heterogeneity of different block shareholders in their preferences to CG. Using a sample of 139 UK FTSE firms, the results indicate that the tendency of CG compliance is increasing over the period investigated in UK. The results also provide evidence that CG behaviour during the period of the financial crisis is considerably different from those of the period prior to the financial crisis. Generally, UK listed companies appear to be motivated to comply more with the CG code recommendations during a financial crisis in order to rebuild shareholder trust and to develop their ability to get external funds at lower cost. This also suggests that their decisions to comply with CG are expected to be influenced by the institutional pressures.

Most importantly, our results show a significant positive association between CG and total block shareholdings for the whole period and it also indicates that board composition and independence is the only CG sub-index that affects total block shareholders' investment decisions. Additionally, the results provide evidence that institutional block shareholders, such as pension funds and insurance companies, pay more attention to CG matters as a vital part of investment decisions. In contrast, the results also indicate that no significant relationship between CG and block shareholdings of management and directors. Moreover, when testing the relationship between CG_SCORE and total block shareholdings before and during the crisis, the results revealed that the insignificant results of the impacts of CG score in the pre-crisis period became significant during the financial crisis period, thereby indicating that block shareholders view CG as particularly important during the crisis period. Therefore, this study fills an important gap in prior

literature and provides an understanding of the role that CG and, specifically, board structure play in attracting block shareholders during crisis period. The results recommend firms to sustain CG and, mainly, board independence to enlarge its shareholders base and raise new capital.

Another important result of this paper is that the preferences block shareholders have in terms of the characteristics of firms change over time. Block shareholders' preferences for liquidity were generally insignificant before the crisis period, but became significant during the crisis. Also, their preferences for dividends have changed during the crisis. This indicates that the financial crisis did not only change their preferences towards CG but also towards other characteristics of firms. The study by Khurshed et al. (2011) indicated that institutional investors' preferences towards dividend yield, as one of the firm's characteristics, changed over time in the U.K.

The significance and implications of the results can serve as a reference point and specify the path that should be followed by a company if it has the desire to increase its shareholder base. Giannetti and Simonov (2006) showed that companies can use CG as a way to catch the attention of certain types of shareholders in a similar way to their use of dividends to attract investors. The results of this study, therefore, have implications for companies; they are useful for management of listed companies in managing relationships with block shareholders. For example, it will help them attract a particular group of block shareholders via improving a particular set of CG provisions. It also provides evidence that during financial trouble time, improving a particular mechanism of

CG will attract investors. Table (3.14) gives important information for companies: they will be able to identify what attracts block shareholders and what CG areas require improvement, in order to attract certain types of block shareholders. Furthermore, our findings have significant implications for regulators and policy-makers; specifically, regulators and policy makers should draw on these results to revise the regulations of CG that will help and support companies in their efforts to improve CG practices and, mainly, board effectiveness. Additionally, the results related to areas of non-compliance are expected to help regulators and also companies to understand why, and where, companies are falling behind in ensuring compliance. In this regard, our findings call for more stringent CG requirements in order to provide more protection for investors and to pass up any negative consequences that may come up from non-compliance.

[Table 3.14 around here]

Finally, the weaknesses of this paper need to be acknowledged in order to provide recommendations for future research. This paper focuses on investigating the heterogeneity of the investment preferences of different types of block shareholders in UK listed companies. Therefore, future research is needed to study the heterogeneity in another institutional setting with lower investor protection or within a cross-country context, which will provide a more explicit generalisation of our results. Furthermore, as our sample is limited to non-financial firms, future studies may enhance the analysis by investigating financial firms. In addition, our analysis focused mainly on internal CG mechanisms; thus it might be interesting to examine the special effects of external CG mechanisms on block shareholders' investment decisions.

TABLES

Table (3.5): Descriptive Statistics

This table provides the descriptive statistics for the dependent (block shareholdings), independent (total CG index and all sub-indices) and control variables for each year as well as for the whole period (2005-2009), pre-financial crisis period (2005–2007) and during-financial crisis period (2008–2009), respectively. TOTAL-BLOCK is the percentage of shares owned by shareholders with at least 3% of the company shares; BLOCK1 is the percentage of shares owned by pension funds and insurance companies with at least 3% of the company shares; BLOCK2 is the percentage of shares owned by other institutional investors with at least 3% of the company shares; BLOCK3 is the percentage of shares owned by corporations with at least 3% of the company shares; BLOCK4 is the percentage of shares owned by managers and directors with at least 3% of the company shares; BLOCK5 is the percentage of shares owned by other shareholders with at least 3% of the company shares; CG-SCORE is the total CG score; BCII is the score of board composition and independence index; BPPI is the score of board process and practice index; AAI is the score of accountability and audit index; SIZE is the natural logarithm of total assets; LEV is the percentage of total debt to total assets; TURN is the annual share volume over the year to shares outstanding; DIVIDEND is dividends per share to market price-year end * 100; PRICE is the annual stock price; ROA is the percentage of net income to total assets; TQ is market value of equity plus total debts to total assets.

Variables	Mean (Median) (Std. Dev.) (2005)	Mean (Median) (Std. Dev.) (2006)	Mean (Median) (Std. Dev.) (2007)	Mean (Median) (Std. Dev.) (2008)	Mean (Median) (Std. Dev.) (2009)	Mean (Median) (Std. Dev.) (2005 to 2007)	Mean (Median) (Std. Dev.) (2008 to 2009)	Mean (Median) (Std. Dev.) (2005 to 2009)
Total_BLOCK	32.32 (29.8) (16.78)	32.56 (30.88) (17.02)	36.49 (34.73) (17.10)	38.26 (37.4) (18.45)	38.17 (37.1) (17.08)	33.81 (31.58) (17.04)	38.21 (37.25) (17.75)	35.56 (33.76) (17.45)
BLOCK1	4.09 (3.19) (5.52)	4.25 (3.3) (5.28)	7.01 (4.81) (6.44)	7.05 (4.69) (6.10)	7.17 (4.49) (6.29)	5.12 (3.58) (5.91)	7.11 (4.55) (6.18)	5.91 (4) (6.09)
BLOCK2	19.67 (18.26) (13.23)	20.45 (17.7) (14.06)	21.31 (19.22) (14.06)	21.86 (20.55) (15.29)	22.17 (19.97) (14.97)	20.48 (18.27) (13.77)	22.01 (20.2) (15.11)	21.09 (18.91) (14.33)

Table 3.5 (continued)

Variables	Mean (Median) (Std. Dev.) (2005)	Mean (Median) (Std. Dev.) (2006)	Mean (Median) (Std. Dev.) (2007)	Mean (Median) (Std. Dev.) (2008)	Mean (Median) (Std. Dev.) (2009)	Mean (Median) (Std. Dev.) (2005 to 2007)	Mean (Median) (Std. Dev.) (2008 to 2009)	Mean (Median) (Std. Dev.) (2005 to 2009)
BLOCK3	5.22 (0) (13.37)	4.66 (0) (12.45)	4.86 (0) (12.72)	5.611 (0) (13.51)	5.80 (0) (13.65)	4.91 (0) (12.82)	5.70 (0) (13.56)	5.23 (0) (13.12)
BLOCK4	1.94 (0) (7.37)	1.85 (0) (7.36)	2.01 (0) (7.43)	1.97 (0) (7.35)	1.90 (0) (7.00)	1.940 (0) (7.37)	1.942 (0) (7.16)	1.94 (0) (7.28)
BLOCK5	1.38 (0) (5.56)	1.35 (0) (5.71)	1.30 (0) (5.95)	1.77 (0) (6.64)	1.13 (0) (5.75)	1.35 (0) (5.73)	1.45 (0) (6.21)	1.39 (0) (5.92)
CG_SCORE	0.7999 (0.815) (.099)	0.8086 (0.821) (.099)	0.8228 (0.833) (.092)	0.8346 (0.85) (.088)	0.8437 (0.863) (.087)	.8105 (.821) (.097)	.8391 (0.857) (.088)	.82199 (.833) (.094)
BCII	.6977 (.714) (.1914)	.7007 (.714) (.1944)	.7213 (.714) (.1830)	.7305 (.714) (.1828)	.7449 (.714) (.1785)	.7065 (.714) (.1895)	.7377 (.714) (.1805)	.7190 (.714) (.1864)
BPPI	.8874 (.909) (.1151)	.8978 (.909) (.1108)	.9083 (.909) (.1114)	.9234 (.909) (.0931)	.9247 (.909) (.0948)	.8978 (.909) (.1125)	.9240 (.909) (.0938)	.9083 (.909) (.1061)
AAI	.8147 (.875) (.1280)	.8273 (.875) (.1188)	.8390 (.875) (.1148)	.8498 (.875) (.1117)	.8615 (.1071) (.0357)	.8270 (.875) (.1208)	.8556 (.875) (.1094)	.8384 (.875) (.1171)
SIZE	21.41 (21.22) (1.377)	21.61 (21.46) (1.406)	21.62 (21.46) (1.409)	21.16 (21.06) (1.407)	21.27 (21.10) (1.384)	21.55 (21.38) (1.397)	21.21 (21.07) (1.394)	21.41 (21.25) (1.404)

Table 3.5 (continued)

Variables	Mean (Median) (Std. Dev.) (2005)	Mean (Median) (Std. Dev.) (2006)	Mean (Median) (Std. Dev.) (2007)	Mean (Median) (Std. Dev.) (2008)	Mean (Median) (Std. Dev.) (2009)	Mean (Median) (Std. Dev.) (2005 to 2007)	Mean (Median) (Std. Dev.) (2008 to 2009)	Mean (Median) (Std. Dev.) (2005 to 2009)
LEV	0.2470 (.2312) (.1640)	0.2629 (.2438) (.1681)	0.2485 (.2311) (.1657)	0.2369 (.2192) (.1749)	0.2366 (.2125) (.1657)	0.2528 (.2336) (.1657)	0.2368 (.2190) (.1700)	0.2463 (0.230) (.1675)
TURN	2.17 (1.61) (2.67)	2.12 (1.75) (2.23)	2.45 (1.82) (3.78)	2.46 (1.85) (2.85)	1.90 (1.44) (1.87)	2.25 (1.68) (2.97)	2.18 (1.65) (2.42)	2.22 (1.66) (2.76)
DIVIDEND	2.47 (2.46) (1.44)	2.38 (2.41) (1.43)	2.08 (2.05) (1.19)	3.41 (2.91) (2.90)	3.77 (3.39) (3.55)	2.31 (2.28) (1.36)	3.59 (3.075) (3.24)	2.82 (2.54) (2.39)
PRICE	5.148 (3.8) (5.356)	6.533 (4.335) (6.391)	8.378 (6.28) (7.611)	728.97 (475.37) (739.44)	5.665 (3.533) (6.044)	6.701 (4.702) (6.645)	6.477 (4.161) (6.789)	6.611 (4.507) (6.700)
ROA	.1024 (.0751) (.1013)	.0670 (.058) (.1104)	.0513 (.0482) (.0930)	.0804 (.0691) (.0726)	.0933 (.0752) (.0755)	.0736 (.060) (.1038)	.0868 (.0715) (.0742)	.07895 (.067) (.0932)
TQ	1.79 (1.50) (.9327)	1.42 (1.24) (1.208)	1.15 (0.99) (.6910)	1.48 (1.16) (.9593)	1.67 (1.34) (1.078)	1.45 (1.23) (.9994)	1.57 (1.26) (1.022)	1.50 (1.24) (1.00)

Table (3.6): Pearson's Correlation Matrix

This table presents the Pearson's correlation matrix for the independent variables used. All variables are fully defined in Table (3.5).

Variables	CG_SCORE	BCII	BPPI	AAI	SIZE	LEV	TURN	DIVIDEND	PRICE	ROA	TQ
All period											
CG_SCORE	1.0000										
BCII	0.6741***	1.0000									
BPPI	0.5621***	0.1885***	1.0000								
AAI	0.5844***	0.1650***	0.2055***	1.0000							
SIZE	0.0310	-0.0182	0.0590	0.0846**	1.0000						
LEV	0.1376***	0.1097***	0.1066***	0.0823**	0.2634***	1.0000					
TURN	0.1586***	0.2055***	0.1084***	0.0694*	0.0847**	0.1304***	1.0000				
DIVIDEND	0.1745***	0.1492***	0.0116	0.1645***	0.1019***	0.2469***	-0.1351***	1.0000			
PRICE	-0.0718*	-0.0601	0.0009	0.0007	0.2217***	-0.0979**	-0.1362***	-0.1706***	1.0000		
ROA	-0.1118***	-0.0693*	-0.0485	-0.0768**	-0.2416***	-0.2706***	-0.0810**	-0.0920**	0.2950***	1.0000	
TQ	-0.1091***	-0.0955**	-0.0034	-0.0408	-0.4253***	-0.0808**	-0.0090	-0.2545***	0.2739***	0.6026***	1.0000
Pre-crisis											
CG_SCORE	1.0000										
BCII	0.6665***	1.0000									
BPPI	0.5515***	0.1699***	1.0000								
AAI	0.5938***	0.1841***	0.2140***	1.0000							
SIZE	0.0685	0.0187	0.0926*	0.0954*	1.0000						
LEV	0.1689***	0.1399***	0.1371***	0.0820*	0.2558***	1.0000					

Table 3.6 (continued)

Variables	CG_SCORE	BCII	BPPI	AAI	SIZE	LEV	TURN	DIVIDEND	PRICE	ROA	TQ
TURN	0.1710***	0.2012***	0.1350***	0.0914*	0.1201**	0.1144**	1.0000				
DIVIDEND	0.1362***	0.1189 **	0.0065	0.1693 ***	0.1292 ***	0.2662***	-0.1489***	1.0000			
PRICE	-0.0157	0.0113	0.0067	0.0266	0.2389***	-0.0285	-0.1556***	-0.0529	1.0000		
ROA	-0.1283***	-0.0689	-0.0663	-0.0875*	-0.2293***	-0.2477***	-0.0145	-0.0043	0.2985***	1.0000	
TQ	-0.0779	-0.0546	-0.0237	-0.0019	-0.4298***	-0.0502	0.0250	-0.1237**	0.2148***	0.5862***	1.0000
During-crisis											
CG_SCORE	1.0000										
BCII	0.6810***	1.0000									
BPPI	0.5660***	0.2005***	1.0000								
AAI	0.5567***	0.1126*	0.1575***	1.0000							
SIZE	0.0678	-0.1052*	-0.0413	0.0267	1.0000						
LEV	0.0837	0.0562	0.0449	0.0718	0.2681***	1.0000					
TURN	0.1438**	0.2133 ***	0.0639	0.0330	0.0288	0.1550***	1.0000				
DIVIDEND	0.1598***	0.1565***	-0.0492	0.1137*	0.0117	0.2288***	-0.1353**	1.0000			
PRICE	-0.1222**	-0.1453**	0.0122	-0.0167	0.2270 ***	-0.1844***	-0.1111*	-0.2613***	1.0000		
ROA	-0.0285	-0.0324	0.0431	-0.0002	-0.2076***	-0.2976***	-0.1776***	-0.0760	0.2760***	1.0000	
TQ	-0.0759	-0.1127*	0.1114*	-0.0234	-0.3786***	-0.1050*	-0.0567	-0.2890***	0.3304***	0.5704***	1.0000

***, ** and * denote significance at the 1%, 5%, and 10% levels, respectively

Table (3.7) Regression Results of CG Score and Total /Different Types of Block Shareholdings

This table provides panel data regressions results of total block shareholdings (Model 1), each type of block shareholdings (Models 2,3,4,5 and 6) and corporate governance score. All variables are fully defined in Table (3.5). These models provide *t*-statistics or *z*-statistics, which are in parentheses, depending on the used regression fixed effect or random effect respectively.

Variables	TOTAL_BLOCK Model 1	BLOCK1 Model 2	BLOCK 2 Model 3	BLOCK 3 Model 4	BLOCK 4 Model 5	BLOCK 5 Model 6
intercept	1.265 (16.23) ***	-.2673(-1.34)	-.2302(-1.32)	.1983(1.35)	.0739 (1.09)	-.0237(-0.30)
CG_SCORE	0.1201 (2.16) **	.2386(1.69)*	.1954(1.81)*	-.0801(-0.90)	-.0136(-0.28)	.0525(0.99)
SIZE	0.0946(1.29)	.7887(3.55) ***	-.2477(-2.66) ***	-.04540(-0.71)	.1052(0.76)	-.0907(-1.89)*
LEV	.0501 (1.54)	-.0469(-0.56)	.0806(1.48)	.0140(0.33)	.0352(1.04)	.0899(2.07)**
TURN	.0449 (1.86) *	.1894(3.65) ***	.0091(0.19)	.0121(0.44)	.0130 (0.60)	.0989(2.41)**
DIVIDEND	0.0102(0.50)	.0731(1.43)	.0523(1.11)	-.0812(-2.28) **	.0024(0.11)	-.0210 (-0.83)
PRICE	-.09074 (-1.90)*	-.0327(-0.22)	-.1036(-1.36)	-.0699(-1.50)	.0112(0.13)	.0615(1.34)
ROA	-.0157 (-0.87)	-.0183(-0.42)	-.0117(-0.31)	-.0405(-1.44)	-.0011(-0.05)	-.0025(-0.09)
TQ	-.0033 (-0.07)	.0975(0.71)	-.0311(-0.43)	-.0957(-1.79)	.0272(0.34)	-.0588(-1.26)
<i>R</i> ²	0.1064	0.1100	0.1252	0.0246	0.0186	0.0167
<i>Observations</i>	556	556	556	556	556	556
<i>Groups</i>	139	139	139	139	139	139
<i>Hausman test/ Prob > chi2</i>	0.0043	0.0005	0.4203	0.0510	0.0161	0.0826
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Fixed effects</i>	<i>Random effects</i>	<i>Random effects</i>	<i>Fixed effects</i>	<i>Random effects</i>

***, ** and * denote significance at the 1%, 5%, and 10% levels, respectively

Table (3.8) Regression Results of CG Sub-Indices and Total /Different Types of Block Shareholdings

This table provides panel data regressions results of total block shareholdings (Model 1), each type of block shareholdings (Models 2,3,4,5 and 6) and CG Sub-Indices. All variables are fully defined in Table (3.5). These models provide *t*-statistics or *z*-statistics, which are in parentheses, depending on the used regression fixed effect or random effect respectively.

Variables	TOTAL_BLOCK Model 1	BLOCK1 Model 2	BLOCK 2 Model 3	BLOCK 3 Model 4	BLOCK 4 Model 5	BLOCK 5 Model 6
intercept	1.438 (280.48) ***	.0918(7.40) ***	.0441(0.64)	.0826(9.00) ***	.0554(8.64)	.0550(1.31)
BCII	.0497 (1.73)*	-.0239(-0.34)	.1523(2.66) ***	-.0222(-0.60)	.0081(0.31)	-.0371(-1.04)
BPPI	-.008305 (-0.03)	.1217(1.40)	-.0454(-0.76)	-.0359(-0.86)	.0215 (1.19)	.0174(0.52)
AAI	.01778 (0.61)	.1872(1.86) *	-.0532(-0.84)	-.0260(-0.49)	-.0237(-0.64)	.0723(2.05) **
SIZE	.0830 (1.13)	.7668 (3.29) ***	-.2350(-2.59)**	-.0666 (-0.51)	.1022(0.74)	-.0998(-1.99)**
LEV	.0475 (1.52)	-.0562(-0.60)	.0785(1.51)	-.0279(-0.51)	.0366(1.08)	.0905(2.15) **
TURN	.0432 (1.76)*	.1902(3.46) ***	.0028(0.06)	-.0012(-0.05)	.0150(0.67)	.10005 (2.42)**
DIVIDEND	.0111 (0.54)	.0635(1.22)	.0604(1.34)	-.0779(-2.04) **	.0038 (0.17)	-.0267(-1.02)
PRICE	-.0809(-1.70)*	-.0662(-0.43)	-.0979(-1.30)	-.0693(-0.90)	.01230(0.16)	.0590(1.31)
ROA	-.0168(-0.93)	-.0161(-0.37)	-.0145(-0.38)	-.0387(-1.37)	.0001(0.01)	-.0020(-0.07)
TQ	-.0117(-0.25)	.1242 (0.96)	-.0334(-0.47)	-.1340(-1.57)	.0271(0.35)	-.0611(-1.33)
<i>R</i> ²	0.1046	0.1278	0.1390	0.0781	0.0212	0.0199
<i>Observations</i>	556	556	556	556	556	556
<i>Groups</i>	139	139	139	139	139	139
<i>Hausman test/ Prob > chi2</i>	0.0023	0.0000	0.4928	0.0002	0.0003	0.1414
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Fixed effects</i>	<i>Random effects</i>	<i>Fixed effects</i>	<i>Fixed effects</i>	<i>Random effects</i>

***, ** and * denote significance at the 1%, 5%, and 10% levels, respectively

Table (3.9) Regression Results of the Relation between CG Score and Total Block Shareholdings Pre and During the Financial Crisis

This table presents the regression results of total block shareholdings and CG score before and during the financial crisis. It shows the results of CG impact on block shareholdings before and during the financial crisis. All variables are fully defined in Table (3.5). These models provide *t*-statistics which are in parentheses.

Variables	Pre- financial crisis (2005-2007) Model 1	During-- financial crisis (2008-2009) Model 2
intercept	1.212 (10.98) ***	1.145(6.73) ***
CG_SCORE	.1120 (1.36)	.2235 (1.87)*
SIZE	-.0959(-0.49)	-.2969 (-0.96)
LEV	.0719(1.58)	.1206(1.70)*
TURN	-.0156(-0.48)	.0590(2.55) **
DIVIDEND	-.2119(-2.25) **	.0369(1.41)
PRICE	.2912(1.63)	.1509(1.66)
ROA	-.0067 (-0.33)	-.0104(-0.48)
TQ	-.2730 (-2.29)**	-.1797(-2.01)**
<i>R</i> ²	0.1853	0.1349
<i>Observations</i>	278	278
<i>Groups</i>	139	139
<i>Hausman test/ Prob > chi2</i>	0.0013	0.0025
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Fixed effects</i>

***, ** and * denote significance at the 1%, 5%, and 10% levels, respectively

Table (3.10) Regression Results of the Relation between CG Sub-Indices and Total Block Shareholdings Pre and During the Financial Crisis

This table presents the regression results of total block shareholdings on corporate governance sub-indices. It shows CG sub-indices impact on block shareholdings before and during the financial crisis. All variables are fully defined in Table (3.5). These models provide *t*-statistics which are in parentheses.

Variables	Pre- financial crisis (2005-2007) Model 1	During-- financial crisis (2008-2009) Model 2
intercept	1.380 (53.73) ***	1.465(27.66)***
BCII	.0415(1.20)	.1011 (2.04) **
BPPI	-.0186 (-0.47)	.0933(1.21)
AAI	.0872 (1.70)*	-.0415(0.93)
SIZE	-.1350(-0.66)	-.2860 (-0.96)
LEV	.0649 (1.37)	.0981(1.47)
TURN	-.0208(-0.63)	.0675(2.83)***
DIVIDEND	-.2095(-2.20)**	.0422(1.63)
PRICE	.3271 (1.76) *	.1560(1.69)*
ROA	-.0084 (-0.35)	-.0052(-0.24)
TQ	-.3053(-2.45)**	-.1903 (-1.96) *
<i>R</i> ²	0.2079	0.1468
<i>Observations</i>	278	278
<i>Groups</i>	139	139
<i>Hausman test/ Prob > chi2</i>	0.0009	0.0015
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Fixed effects</i>

***, ** and * denote significance at the 1%, 5%, and 10% levels, respectively

Table (3.11) Tobit Regression Results of CG Score and Types of Block Shareholdings

This table presents the results of random-effect Tobit panel regressions of different types of block shareholdings and CG. It examines CG impact on different types of block shareholdings. All variables are fully defined in Table (3.5). These models provide z-statistics which are in parentheses.

Variables	BLOCK1 Model 2	BLOCK 2 Model 3	BLOCK 3 Model 4	BLOCK 4 Model 5	BLOCK 5 Model 6
intercept	-.1739(-0.98)	-.2809(-1.59)	-.8994 (-2.95)***	-4.034(-7.64)***	-5.260(-5.38)
CG_SCORE	.2018 (1.76)*	.2382(2.15)**	-.1393 (-0.76)	-.2506(-0.72)	.5176(0.96)
SIZE	-.0691(-0.87)	-.2140(-2.37) **	-.1242(-0.82)	-.2261(-0.90)	-1.37(-2.64)***
LEV	.0858(1.41)	.0791(1.34)	.0508(0.54)	.1596(0.89)	.8801(2.70)***
TURN	.2023(4.14) ***	-.0002(-0.01)	.0625 (0.88)	.0394(0.38)	.8187(3.41)***
DIVIDEND	.0938(2.01)**	.0265(0.62)	-.1507(-2.36)**	.0087(0.07)	-.1506(-0.81)
PRICE	.1261(1.87)*	-.1157(-1.61)	-.1934(-1.64)	.2579(1.23)	.8027(2.21)**
ROA	-.0567(-1.18)	-.0187 (-0.46)	-.0938(-1.56)	-.0154(-0.14)	.0920(0.47)
TQ	-.0904(-1.17)	-.0435 (-0.58)	-.1410(-1.14)	-.0883(-0.41)	-.7212(-1.85)*
<i>Observations</i>	556	556	556	556	556
<i>Groups</i>	139	139	139	139	139
<i>Log likelihood</i>	-514.26	-441.79	-322.36	-168.76	-197.95

***, ** and * denote significance at the 1%, 5%, and 10% levels, respectively

Table (3.12) Results of Robustness Checks

This table represents the results of robustness checks. Model 1 gives the random effect regression analysis when industry dummy variables are added to the regression. Model 2 gives the fixed effect regression results when stock return (RETURN) is added as an additional independent variable. All variables are fully defined in Table (3.5). These models provide *t*-statistics or *z*-statistics, which are in parentheses, depending on the used regression fixed effect or random effect respectively.

Variables	Total_BLOCK Model 1 2005-2009	Total_BLOCK Model 2 2008-2009
intercept	1.178(6.37)***	1.148 (6.68) ***
CG_SCORE	.0777(1.76)*	.2198 (1.84) *
SIZE	-.1436(-3.52)***	-.2970 (-0.96)
LEV	.0549 (2.21)**	.1201 (1.68)
TURN	.0288 (1.67)*	.0586 (2.51) **
DIVIDEND	.0113(0.65)	.0364 (1.40)
PRICE	-.0201(-0.63)	.1574 (1.68)*
ROA	-.0264(-1.70)*	-.0095 (-0.43)
TQ	-.0714(-2.21) **	-.0086 (-0.30)
INDUDTRY	yes	-----
RETURN	-----	-.1847(-1.34)
<i>R</i> ²	0.1870	0.1356
<i>Observations</i>	556	278
<i>Groups</i>	139	139
<i>Hausman test/ Prob > chi2</i>	-----	0.0001
<i>Method of estimation</i>	Random effects	Fixed effects

***, ** and * denote significance at the 1%, 5%, and 10% levels, respectively

Table (3.13) Regression Analysis of CG and another Classification of Block Shareholdings

This table presents the regression results of each type of the new classification of block shareholdings and CG score. Where BLOCK 5a is the percentage of shares owned by states, governmental agencies, governmental departments or local authorities with at least 3% of the company shares, BLOCK 6 is the percentage of shares owned by families and individuals who are outsiders, BLOCK7 is the percentage of shares owned by others such as foundations or research institutes with at least 3% of the company shares. All variables are fully defined in Table (3.5). These models provide *t*-statistics or *z*-statistics, which are in parentheses, depending on the used regression fixed effect or random effect respectively.

Variables	BLOCK 5a Model 1	BLOCK 6 Model 2	BLOCK 7 Model 3
intercept	-.0371 (-1.57)	.0598(1.00)	.0235(0.35)
CG_SCORE	.0332(1.37)	-.0271 (-0.85)	.0183(0.41)
SIZE	-.0078(-0.99)	.0158(0.40)	-.0758(-1.69)*
LEV	.0114 (1.31)	-.0084(-0.39)	.0780(1.91)*
TURN	.0016(0.86)	.0990 (1.79)*	.0303(1.46)
DIVIDEND	-.0159(-1.25)	.0133(0.69)	-.0148(-0.76)
PRICE	.0138(1.00)	-.0448(-1.22)	.0700(1.46)
ROA	-.0017(-0.45)	-.0053(-0.46)	.0029(0.10)
TQ	-.0157 (-0.89)	.0227(1.02)	-.0484 (-1.25)
<i>R</i> ²	0.0304	0.0249	0.0134
<i>Observations</i>	556	556	556
<i>Groups</i>	139	139	139
<i>Hausman test/ Prob > chi2</i>	0.0513	0.1375	0.0924
<i>Method of estimation</i>	<i>Random effects</i>	<i>Random effects</i>	<i>Random effects</i>

***, ** and * denote significance at the 1%, 5%, and 10% levels, respectively

Table (3.14): Summary of the Main Results of BLOCK- Shareholders' Preferences.

Shareholders' Preferences	CG -SCORE	BCII	BPPI	AAI
Total_BLOCK	+SR	+SR	NSR	NSR
BLOCK1	+SR	NSR	NSR	+SR
BLOCK 2	+SR	+SR	NSR	NSR
BLOCK 3	NSR	NSR	NSR	NSR
BLOCK 4	NSR	NSR	NSR	NSR
BLOCK 5	NSR	NSR	NSR	+SR

Note: +/- SR: Positive/Negative significant relationship; NSR: Non- significant relationship

Chapter Four: Essay Two

The Impact of Corporate Governance on Firm Performance Pre and During the Financial Crisis: UK FTSE 350 Companies

Chapter Four: Essay Two

The Impact of Corporate Governance on Firm Performance Pre and During the Financial Crisis: UK FTSE 350 Companies

Abstract

This paper empirically investigates the effect of Corporate Governance (CG) on firm performance before and during the financial crisis in UK context. It also examines one channel suggested in the literature through which CG could have impact on firm performance; it examines the mediating effect of agency cost. The results indicate that only in the pre-crisis period, CG affects firm performance; however, during the crisis period, it shows a non-significant relationship. Empirical results further support the mediating role of agency costs which is consistent with the agency theory; this mediating role is proved only in the pre-crisis period and this is held only for one of the CG-sub indices. These results reveal that not all of CG sub-indices are effective in reducing agency cost and improving firm performance; namely, board composition, independence and practice proved to be ineffective in reducing agency cost and enhancing firm performance both before and during crisis period. Moreover, this study provides the evidence that CG is less effective in influencing firm performance during crisis period which implies that CG mechanisms' effects differ from the crisis to the non-crisis period. Therefore, the efficacy of good CG mechanisms, such as board independence and board practices, that are believed to have common relevance are questionable especially during crisis periods.

Keywords: Corporate Governance, agency cost, firm performance, 2007/2008 financial crisis, UK

4.1 Introduction and Research Focus

The financial crisis that followed the subprime meltdown in the US has raised a lot of concern about the role of CG (Aebi et al., 2012). It is argued that poor CG, among other factors, contributed to the crisis (Beltratti and Stulz, 2012). Therefore, the weaknesses in CG systems could lead to a financial crisis (Kirkpatrick, 2009). In addition, according to The Shareholder Bill of Rights Act of 2009, CG was a major cause of the severe financial crisis that badly affected the United States (Tarraf, 2011).

There are some reasons why CG became more important during a period of the financial crisis: first, the expected rate of return is expected to decline during the crisis time; therefore, there is a more chance for the increasing of expropriation by managers. Second, investors give more focus to CG in crisis times and, therefore, any weaknesses in CG will easily be discovered by them; these weaknesses may be ignored in normal time. Third, companies might suffer from financial distress during financial crisis period; therefore, they are expected to have severe agency problems. Consequently, CG is important to deal with such problems (Jensen and Meckling, 1976; Johnson et al., 2000; Kim and Lee, 2003; Mitton, 2002; Rajan and Zingales, 1998).

Although the current economic crisis is the biggest one since the Great Depression, it can be argued that limited research appears to have been conducted regarding the relationship between CG and firm performance during this financial crisis period. This limited research focused on banks and financial institutions' CG. More attention was given to financial institutions due to the increasing

importance given by public policy makers regarding the suitability of CG systems applied to financial institutions (Walker, 2009). Examples of studies that examined the relationship among CG and performance in banks and financial institutions during the recent financial crisis include: the study by Aebi et al. (2012), Cornett et al. (2010), Fahlenbrach and Stulz (2009), and Minton et al. (2010). Minton et al. (2010), for instance, used a sample of US financial institutions to examine the effect of CG on firm performance before and during the financial crisis. They considered the effect of financial expertise of the board and also board independence and their analysis indicated a negative association among financial expertise and performance during the crisis period; however, this relationship is found to be positive in the pre-crisis period. Cornett et al. (2010) also considered U.S. banks and examined internal CG mechanisms' effect on bank performance before and during the financial crisis. They found that in the period before and during crisis there was a sharp decline in many CG mechanisms. The results indicated also that larger banks with poor CG performed badly during the crisis. In addition, Aebi et al. (2012) examined the influence of both CG characteristics and risk governance characteristics on bank performance; they examined the effect of both chief risk officer existence on the board and whether they report directly to the board or CEO. Their results revealed that during the crisis period banks performed better when chief risk officer reported directly to the board.

Whereas the role and importance of CG on affecting banks and financial institutions' performance during the crisis were at the focus of previous studies,

CG impact on non-financial institutions during this crisis period has mainly been ignored in prior literature until now. Recently, Essen et al. (2013), in a large sample of both financial and non-financial firms that cover more than 1100 firms from 26 European countries before and during the recent crisis, investigated the effect of CG at both firm and country levels on firm performance. The current paper will add to this previous literature and will focus mainly on non-financial firms; using a sample of FTSE 350 non-financial firms, the current paper will examine the effect of CG on the performance in the period before and during the financial crisis. In addition, little attention is given to the channel through which CG affects performance; what is missing in prior literature that attempted to study the effect of CG on firm performance is the channel through which CG affects performance (Henry, 2010). Some previous studies have suggested some intermediate channels that could explain the effect of CG on firm performance. For example La Porta, et al. (2000) suggested stronger shareholder rights and legal protection mechanisms as channels. Black et al. (2011) considered Related-Party Transactions as one channel as their results indicated that in firms with high CG level a weak significant negative relationship is found between related party transactions and Tobin's Q. Other channels include informative disclosure; firms with good CG make better disclosure (Beekes and Brown, 2006). Moreover, McDonald et al. (2008) revealed that CEOs' advice networks mediated the relationship between CG and firm performance. Another important channel mentioned by Henry (2010) and Le and Buck (2011) is agency cost; Henry (2010) found significant negative relationship among companies' compliance with CG index and agency cost level. However, in his study he did not empirically test the

mediating role of agency cost. Only the study by Le and Buck (2011) considered this mediating effect of agency cost on the relationship between state ownership and firm performance. Therefore, the current paper extends the previous studies to examine the mediating role of agency costs on the relationship among CG and firm performance.

To sum up, the main objective of this paper is to study the relationship between CG and firm performance before and during the current financial crisis as limited research appears to have been conducted to examine this relationship in non-normal period. Further, it aims to examine the mediating role of agency cost on this relationship. Therefore, in a sample of UK listed companies covering both pre and during crisis period, the current paper addresses the following questions:

1. Does CG act as an effective mechanism in improving firm performance?
If so;
2. Does agency cost mediate the relationship among CG and firm performance?

Using a sample of 139 companies of the UK FTSE 350, the results indicate that in the period before the crisis there was a significant positive association among overall CG and Tobin's Q (TQ) as a measure of firm performance; they also reveal a non-significant association among CG and Return On Assets (ROA). During the crisis period on the other hand, the results indicate a non-significant association between CG and firm performance measures. Moreover, the results found that CG-Score has no effect on agency cost in both before and during the crisis periods; however, only accountability and audit index (AAI) is found to affect agency cost in the pre-crisis period. The final results show that agency cost

fully mediates the relation between AAI and firm performance in the pre-crisis period.

This paper provides a number of contributions to the literature. First, it complements and extends existing research that attempts to study the effect of CG of non-financial firms on performance during the recent financial crises. It considers this relationship before and during the recent financial crisis in UK; it is considered the first to test this relationship in this turbulent period and also the first to consider non-financial firms. Previous studies focused on financial firms and focused more on the macro economic factors (see for example Beltratti and Stulz, 2012; Erkens et al., 2012; Taylor, 2009). Second, it contributes to the theoretical background as it is among the first to empirically examine the mediating role of agency cost on the relationship among CG and performance. Third, this paper extends the existing empirical work on CG and agency cost; it examines the impact of CG on agency cost by using a composite measure of CG instead of focusing on a small number of CG variables and overlooking its overall impact on agency costs. To the best of the researcher's knowledge, this study is considered the first paper in the UK that examines the effect of a composite measure of CG on agency cost on UK large listed companies; therefore, it adds to McKnight and Weir (2009) who first examined agency costs in large UK companies. This paper differs from the study of McKnight and Weir (2009) because it focuses on the impact of a composite CG measure on agency cost instead of focusing on board characteristics and ownership structure. Moreover, the only study that examined the impact of CG Index on agency cost is the study

of Henry (2010) in Australia that studied the impact of an overall CG code on agency cost that covers the years from 1992 to 2002. So Henry (2010) examined this relationship in a normal period while our paper examines it in another country and also in a crisis period.

This chapter proceeds as follows. The nature of agency environment in UK is discussed first in Section 2, followed by section 3 that presents the theoretical framework and hypotheses development. Section 4 focused on the research method used in this paper. Section 5 discusses the empirical results. The final section presents the summary and concluding remarks.

4.2 Agency Environment in UK

In this paper UK market is considered an appealing setting to study the agency cost and at the same time to investigate CG effect on reducing this agency cost. CG environment of UK is characterised by having a large degree of managerial discretion (Florackis and Ozkan, 2009). Certain factors lead to increase managerial discretion and higher agency cost. These factors include the poor disciplinary role played by the market of corporate control. In addition, although there is an increasing ownership by institutional investor in UK, most of these investors adopt a passive role in monitoring management (Ozkan, 2007). Therefore, it is important to increase the level of involvement of institutional investors and encourage them to be more involved; lately in UK both the institutional investors committee and the UK government were thinking in a way to increase shareholder activism by making the voting of fund managers at shareholders meetings to be compulsory (Mallin et al., 2005). Also, weak

fiduciary obligation on directors in UK compared to other developed country like US; in US for example directors have obligations to take care of shareholders and they can be sued if they fail to do that. However, in UK the weak fiduciary obligations motivate non-executive directors to play only advisory role instead of doing their monitoring role; they should monitor executive directors and make sure that they work for achieving shareholders wealth maximisation (Fama, 1980; Goergen and Rennebog, 2001).

Thus the realisation of these agency problems has resulted in the need to focus on several important aspects including: competitive market for managerial labour, corporate control mechanisms, and the development of CG codes to mitigate these agency problems (Henry, 2010). Therefore, examining the impact of CG on mitigating agency cost in UK before and during the current financial crisis in the current paper would be of significant importance.

4.3 Theory and Hypotheses Development

This section reviews previous studies that examined the different relationship between CG and performance, between CG and agency cost, and the relationship between agency cost and performance in order to develop a research hypothesis for further analysis in this paper.

4.3.1 The Relationship between CG and Firm Performance

An ultimate test to know if CG reform has a positive impact is by investigating whether a positive relationship exists between CG and firm performance or not (Solomon, 2009). The majority of previous CG research that studied this relationship was based on the framework of agency theory (Sami et al., 2011).

According to agency theory, the separation between owners and managers will cause conflict between them and also among shareholders and debt holders (Jensen and Meckling, 1976). Internal and external CG mechanisms, according to agency theory, are considered important mechanisms to address agency problems in modern corporations that occur due to this separation of principals and agents. Therefore, agency theory recognises the important role played by CG in aligning the interest of both shareholders and managers which in turn will reduce agency problem and will allow firms to perform better (Bathala and Rao, 1995; Sami et al., 2011).

Many previous studies examined the association among CG and firm performance (e.g. Aman and Nguyen, 2008; Anderson and Gupta, 2009; Bhagat and Bolton, 2008; Black et al., 2003; Black et al., 2006; Bozec et al., 2010; Cremers and Nair, 2005; Dahya et al., 2008; Davis, 2002; Durnev and Kim, 2005; Florackis, 2005; Gompers et al., 2003; Klapper and Love, 2004; Li et al., 2012; McConnell and Servaes, 1990; Rani et al., 2013; Sami et al., 2011; Tariq and Abbas, 2013; Veprauskaite and Adams, 2013; Wang et al., 2012). However despite the extensive literature, its results are rather inconclusive; moreover, most of these studies examined this relationship in non-crisis periods. The relationship between CG and firm performance during turbulent period did not receive much attention. There is little research about the crisis period and CG role in affecting performance during this turbulent period.

By reviewing previous literature, it can be argued that a number of studies investigate the relationship between CG and firm performance during Asian financial crisis period; these include for example the study by Mitton (2002) who studied CG influence on performance; he examined three CG dimensions which are corporate diversification, ownership structure, and disclosure on firm performance, and he found that during crisis period all three dimensions have a significant effect on performance. Lemmon and Lins (2003) also considered the effect of one aspect of CG which is ownership structure on firm performance; by focusing on eight East Asian countries they considered a sample of more than 800 firms and their findings indicated that TQ declined during the crisis period of firms in which there was more expropriation of minority shareholders and also that stock return in these firms underperformed other firms during the crisis. In addition, Leung and Horwitz (2010) examined also the relationship between CG and firm value on Hong Kong during the Asian financial crisis; they focused on ownership structure like the study of Lemon and Lins (2001), but they focused mainly on management ownership and their findings revealed that firms with more ownership concentration by management performed better during the crisis period.

However, less attention was given to the recent financial crisis; there is little research regarding CG effect on firm performance during this recent financial crisis. This limited literature includes for example Beltratti and Stulz (2012) who tried to answer the question of why banks performed badly during crisis period and examine if CG played a role in this crisis. Their empirical results during

crisis period indicated that a board that is Shareholder-friendly had a negative effect on firm performance. Minton et al. (2010) also focused on board characteristics and examined their effect on firm performance by examining the effect of both financial expertise of the board and board independence before and during the crisis in a sample of U.S. financial institutions. Their findings showed that during the crisis period financial expertise had a negative effect on stock performance; further the results indicated a positive effect prior to the crisis. This is because financial expertise is related to more risk taking before the crisis; they were rewarded for their attitude by the market before the crisis hit which in turn led to poor performance during crisis period. This result indicates that banks with good CG may take more risk which in turn affect negatively in performance during crisis period (Fortin et al., 2010).

Erkens et al. (2012) reached similar results to those of the previous study of Minton et al. (2010); they investigated the influence of two CG mechanisms on performance including: independent directors and influential shareholders. In their study they considered 30 countries and relied on a sample of large financial institutions; their analysis found that companies perform poor during the crisis period if they have institutional shareholders and more independent directors. This result is due to the managers being encouraged by both institutional investors and independent directors in the period leading to the crisis to increase shareholders return by greater risk-taking. On the other hand, the Aebi et al. (2012) focused more on risk governance and examined the association between risk governance and performance of banks in the period during financial crisis.

Their results showed if chief risk officer report directly to the board and not to the CEO this will affect positively on both Return On Equity (ROE) and stock return. In addition, their findings indicated a non-significant relationship between standard CG mechanisms and banks' performance during the crisis. Cornett et al. (2010) revealed that many CG mechanisms of a sample of U.S. firms before and during crisis had been weakened significantly, and they also found that large banks with poor CG performed badly during the crisis. Peni and Vähämaa (2012) revealed mixed results in US banks as their results indicated a positive association between CG and profitability, but they also found that in the middle of the crisis good CG had a negative effect on stock performance.

Thus, from these previous studies it can be argued that their results are rather inconclusive; in addition, the majority of previous literature gave more attention to the Asian financial crisis with little focus on the current financial crisis especially in the non-financial firms. The following studies considered non-financial firms during the recent financial crisis. Francis et al. (2012), on a sample of US non-financial companies during the recent crisis, examined the effect of one dimension of CG on performance and their findings revealed a non-significant association between board independence and firm performance; however, when they used outside directors who had limited connections with the CEO as another definition of the true independence, they found a positive association between board independence and firm performance. Also, Aldamen et al. (2012) examined the influence of CG on firm performance during the recent financial crisis, but they focused only on the association between the characteristics of audit

committee and performance. Their sample consisted of non-financial firms of S&P 300, and their results indicated that during crisis period a number of audit committee characteristics had a significant association with firm performance.

Moreover, there are recently two more studies that considered non-financial firms; they are the study of Gupta et al. 2013 and the study of Essen et al. (2013); Gupta et al. (2013) investigated the influence of internal CG on firm performance in a sample non-financial firms from different countries during financial crisis; by using CG index they found no evidence for any association between CG and performance during crisis period. On the other hand, the study of Essen et al. (2013) studied the effect of both micro and macro CG on the performance of a cross country sample covered 26 European countries before and during crisis; their sample consisted of financial and non-financial firms and they investigated the combined effect of firm and country level CG and they showed that there is a difference of the effect of firm and country CG level from steady to crisis period.

Therefore, this paper will add to the previous literature and will try to fill this gap in the literature by studying the association between CG and firm performance over the period from 2005 to 2009 on a sample of non-financial UK listed firms. Thus, this paper provides new evidence regarding the association among CG and firm performance in both periods before and during the financial crisis in UK context. Thus, following the prior literature that studied the association among CG and firm performance, in which the majority of these prior literature documents a positive relationship among CG and firm performance and which had revealed

that during the financial crisis better CG improved the financial performance (Ammann et al., 2011; Beltratti and Stulz, 2012; Cornett et al., 2010; Renders et al., 2010), the following hypothesis will be tested in this paper: (see Figure 4.1, link 1)

***H1:** There is a significant association between CG and firm performance during the crisis period.*

In addition, the previous relationship will also be tested for the period before the crisis to assess this relationship in both periods; to examine the role of CG in both periods. Moreover, the effect of CG sub-indices on firm performance will also be examined in both periods.

4.3.2 Corporate Governance and Agency Cost

4.3.2.1 Agency Conflicts and Agency costs

CG is given more attention due to the development of the capital market and also due to the financial scandals around the world and, in addition, to the failure in CG that had been accused to contribute to the recent financial crisis (Tarraf, 2011). For these reasons the focus had been centred on the effectiveness of CG; therefore agency cost is considered as an important factor that reflects this issue and has given more attention (Junwei et al., 2011). Conflicts of interests between the agents and the principals occur as a result of the separation between ownership and control; this conflict brings out agency costs (Jensen and Meckling, 1976). Therefore, agency costs arise when the interests of managers are not the same as the interests of shareholders. Managers may have the motivation to take on practices that provide them with benefits at the expense of shareholders such as

shirking, preferences for on-the-job perks, and other self-interested behaviour that affect shareholder wealth negatively (Ang et al., 2000; Wang, 2010).

Agency cost includes all the costs that are related to the operating system and the activities intended to align the interests of both shareholders and managers. Jensen and Meckling (1976:6) defined agency cost as “the sum of (a) the monitoring expenditures by the principal, (b) the bonding expenditures by the agent, and (c) the residual loss”. This residual loss occurs because it is actually impossible to entirely remove the conflict between the agent and the principal, which means that the residual loss remains.

Thus, to mitigate this agency cost, firms need a system to reduce this agency cost and a system that can control management and improve shareholders’ interests (Fama and Jensen, 1983). CG provides that system; by both internal and external CG mechanisms, managers’ opportunistic behaviour can be restricted and the conflict of interests among shareholders and managers can be reduced and hence agency costs can be mitigated (Shleifer and Vishny, 1986). According to the agency model CG mechanisms will help to align the interests of both agents and the principles and hence minimise agency costs (McKnight and Weir, 2009). Therefore, it is argued that internal and external CG mechanism will help in reducing this agency cost and hence to reduce their negative effect on firm performance. The following section reviews the prior literature that is related to the effect of CG on agency cost.

4.3.2.2 The Relationship between CG and Agency Costs

Based on CG literature and agency theory, there are a number of mechanisms mentioned to restrict the opportunistic behavior of managers and hence protect shareholders interests. The most common CG mechanisms mentioned in the literature include ownership structure, directors and the board characteristics, financial disclosures, compensation, auditing and the market for corporate control (Firth et al., 2008). Investigating whether CG reduces agency costs is necessary; particularly taking into consideration the positive effects CG has on firm performance as mentioned in prior literature. The empirical literature that examined the effect of CG on agency cost started by Ang et al. (2000) who considered the first study to examine the association among CG and agency cost as they focused on non-publicity traded firms in US small businesses, their result indicated a significant negative association between agency costs and ownership by management and they also revealed a significant positive association between the number of shareholders and agency cost. In the same vein, Fleming et al. (2005) studied the association between ownership structure and agency cost in non-listed Australian firms and they reached similar results. Moreover, Singh and Davidson (2003) followed Ang et al. (2000) but they focused on large American firms and their result showed that both large managerial ownership and smaller board size increased the asset utilisation ratios as a proxy of agency cost. Chen and Austin (2007) also followed the study of Singh and Davidson (2003) and investigated the effect of block ownership on reducing agency costs and in their analysis they covered the period from 1996 to 2001 for a sample of on large

publicly traded companies, and they found that both inside and outside block shareholders reduced agency costs.

While in developing countries; Mustapha and Ahmad (2011) investigated in Malaysian listed firms the agency relationship by examining the association between managerial ownership and agency costs; their findings supported those obtained in western countries; their results indicated a negative association among managerial ownership and agency costs. Iskandar et al. (2012) in addition considered ownership structure as a moderator variable and examined its influence on the association between free-cash flow and agency cost. They considered the monitoring role of three types of ownership concentration; they are: management, foreign and government ownership. Their result, however, indicated that both management and foreign had an important monitoring task on assets utilisation in firms characterised with high free cash flow.

Thus, prior literature that concerned with examining the relationship between CG and agency cost started by examining the relationship between ownership by management and agency cost; most this research found a negative association between them. Others studies also considered other CG variables to be related to agency cost; board of directors and its characteristics, managerial incentives, and capital structure are more popular in the literature (Gillan, 2006; Mcknight and Weir, 2009). Studies focused on board characteristics include, for example, the study of Florackis and Ozkan's (2004) which revealed a negative association among board size and agency cost. On the other hand Ibrahim and Samad (2011)

examined in a sample of Malaysian firms the effect of independent director, board size, and duality on reducing agency costs and they found a significant negative relationship among board size and agency cost; therefore, larger board is efficient in reducing agency cost.

Other studies examined the impact of different CG variables such as board characteristics, ownership structure, compensations and others include: the study of Florackis (2008) examined the effect of several CG mechanisms on agency cost using two proxies for agency costs; asset turnover ratio and the ratio of selling, general and administrative expenses to total sales (SG&A). Using a UK sample for the period 1999-2003, he studied the effect of managerial compensation, capital structure, board composition and ownership on agency cost. Again Mcknight and Weir (2009) focused on the UK context and they also examined the influence of both ownership and governance on agency cost of large UK firms for the period from 1996-2000; the effect of board characteristics, ownership characteristics and debt are examined in their paper. In UK context Florackis and Ozkan (2009) also examined the influence of entrenchment on agency cost for the period 1999-2005. Davidson et al. (2006) investigated the impact of CEO ownership and other CG mechanisms on agency cost for pre-IPO firms and then in the post-IPO firms; their result indicated a significant negative association between CEO ownership and agency cost in both pre- and post-IPO and at the same time indicated that board composition, leverage, block holders ownership and venture capital firms did not have any impact on agency cost. Firth et al. (2008) investigated the impact of ownership structure and CG on agency costs in a

different agency setting other than western countries; they examined this relationship in Chinese listed companies. In their study, they focused on the identity of shareholders by investigating the impact of different types of ownership on agency cost and they also considered the influence of board composition on reducing agency cost, and their results indicated no effect of ownership structure on reducing agency cost, on the contrary they found that companies with foreign shareholders have higher agency cost. Adut et al. (2011) examined the relationship between CG variables and the probability to consistently meet or beat earnings benchmarks (CMBE), they also examined the impact of CG in reducing agency cost that is associated with CMBE. They argued that good CG will reduce this agency cost due to the reduction in management opportunistic behavior. However, they found that not all CG attributes reduced agency cost; their result indicated CEO power increased agency cost. At the same time, they found that with more level of shareholder power it is less possible for managers to engage in opportunistic behavior to reach CMBE.

Despite that most of the previous studies focused on internal CG as mentioned before, recently there has been more attention given to other CG related variables; the following three studies are examples. Jurkus et al. (2011) investigated the association between top manager's gender diversity and agency costs; they considered both female CEOs and female corporate officers. Their result confirmed that top management gender diversity is negatively associated with agency costs. Within the Chinese setting Xu et al. (2011) focused on an ignored mechanism which is tax enforcement; this study focused on tax enforcement as

an external CG mechanism and examined its influence on two types of agency costs; agency costs between block holders and minority shareholders and agency costs between managers and shareholders. Their results revealed a negative association between tax enforcement and both agency costs types especially for state-controlled firms. Finally, Boivie et al. (2011) considered how CEO organisational identification affects agency costs as an internal psychological factor, and their results showed that CEO with higher level of organisational identifications will result in lesser agency cost, and another important finding is that with this high level of identification, board independence will have weaker influence on agency cost which imply that in the presence of high level of CEO organisational identifications, there will be less need for external control mechanisms.

To sum up, CG aims to reduce agency costs; prior empirical studies had showed results that in line with agency theory which indicated that CG reduces agency costs; firms minimise agency costs by a variety of governance mechanisms. Consistent with agency approach and with previous result of Henry (2010) that showed a negative association between CG and agency cost, the developed CG index in our paper is anticipated to be negatively associated with agency costs. Thus, the following hypothesis is proposed: (see Figure 1, link 2)

H2: There is a negative association between CG and agency costs.

This previous relationship will be tested also in the pre-crisis period. In addition, from an individual governance attribute perspective, the current study will also

investigate the relationship among CG-Sub indices and agency cost; agency costs are anticipated to be negatively associated with CG-sub indices, i.e. Board Composition and Independence index (BCII), Board Practice and Process Index (BPPI) and Accountability and Audit Index (AAI).

4.3.3 The Relationship between Agency Cost and Firm Performance

Agency cost and its effect had been the focus in different contexts such as its impact on dividends policy (Al Taleb, 2012; D'Souza and Saxena, 1999; Filbeck and Mullineaux, 1999; Utami and Inanga, 2011), and company's financial decisions; agency cost affects financial decisions such as capital structure especially when considering the principle-agent problem (Bell, 2010 and Lasfer, 1995). On the other hand, limited studies examined the association between agency cost and performance. This limited stream of research revealed that firm's performance is significantly related to agency costs (Gompers et al., 2003). Boardman et al. (1997) focused on the performance of MNE subsidiaries and their results are consistent with agency theory as they indicated that agency cost is an important determinant of differences in performance between both domestic and foreign Canadian firms. Also Le and Buck (2011) reached to the same result in a Chinese context; their result showed that agency cost is negatively associated with firm performance. Xiao (2009) examined the same relation on 156 Chinese publicly listed companies between 2002 and 2007. Moreover, Wang (2010) examined the effect of both agency cost and free cash flow on firm performance on a sample of Taiwanese companies; they found evidence that supports the

agency theory as their results indicated that agency cost has a significant negative association with both stock return and firm performance.

Therefore, the above mentioned empirical studies supported the agency theory; they revealed a negative relationship between agency costs and firm performance. Based on the agency theory the current study aims to re-investigate agency cost influence on firm performance in both periods before and during crisis. Therefore the following hypothesis is tested: (Figure 4.1, link 3)

H3: there is a negative relationship between agency costs and firm performance.

4.3.4 Agency Cost as a Mediator Variable in the Relation between CG and Performance

According to agency theory, good CG mitigate agency cost and improve performance and shareholders return, but the empirical research that examines the relationship between those three variables is missing. Agency theory suggests that firms with good CG have better performance and have higher value as a result of reducing agency cost. For example, according to agency theory, effective board of directors, as one of the CG mechanisms, provides better monitoring on managers which in turn will minimise agency costs and increasing shareholders' wealth (Fama and Jensen, 1983). This is supported by many studies that focused mainly on the direct relationship between firm performance and CG (Black et al., 2012; Gompers et al., 2003), or between CG and agency cost (Henry, 2010). There is only one study, to the best of our knowledge, that studied the mediating role of agency cost on the association among CG and firm performance; Le and Buck (2011) examined the mediating role of agency cost on the association between state ownership and firm performance in a sample of Chinese companies. Their

findings revealed a positive association between state ownership and firm performance, and also their further empirical analysis supported agency cost mediating role. Based on the agency theory, this paper aims to examine the mediating role of agency cost on the relationship among CG and performance. Therefore, the current hypothesis will be tested in both periods and is based on the first hypothesis: (Figure 4.1, link 4)

H4: *Agency costs mediate the positive association among CG and firm performance.*

The next section presents the research methodology employed in this paper; sample, data collection, variables measurement and empirical models are all discussed in details.

4.4 Research Methods

4.4.1 Sample Selection and Data Sources

For the purpose of the paper, a sample of FTSE 350 UK listed companies was selected as the aim is to test the relationships between variables on a sample of large firms. A balanced panel dataset is used that covers the period from 2005 to 2009. The sample includes 139 companies excluding the financial institutions and utility companies. The total sample is 695 of firm-year observations demonstrating 139 companies for the period from 2005-2009. This sample period is divided into two main periods: the pre-crisis period from 2005 to 2007 and the crisis period from 2008 to 2009 (for more details about sample selection see chapter 3, section 3.5.1).

Accounting, market-based and financial data was obtained from DataStream. Data about firm size, total debt, dividend, ROA, total sales, and asset utilisation were collected from DataStream. In addition, data about CG variables were hand-collected from the annual reports of sample companies.

4.4.2 Variables: Measurement and Description

4.4.2.1 Agency Cost Measurement

Agency cost is used as an independent variable in H3 and as a dependent variable in H2 and as a mediator variable in H4. There are many measures used for agency cost but the following two measures commonly used in financial economics and accounting studies (Ang et al., 2000): The asset utilisation ratio is the first common measure of agency cost calculated as annual sales divided by annual total assets. It is an inverse proxy for agency costs and it measures how effectively management is using its assets. A low assets utilisation ratio means higher agency cost because companies that have poorer ratios have inefficient use of assets; they make poor investment decisions or unproductive asset purchase. This variable had been used by Ang et al. (2000), Florackis and Ozkan (2004), McKnight and Weir (2009), and Singh and Davidson (2003). The second measure is the ratio of operating expense to sales and it is also adopted by Ang et al. (2000), and this ratio measures how operating costs are effectively controlled by management. Instead of using the operating expense to sales ratio, others adopted selling, general and administrative (SG&A) expenses to sales ratio; it is a direct proxy of agency costs. This ratio is used to identify expenditure on salaries, travel expense, office building, equipment and fitting, advertising and marketing and rents

(Florackis and Ozkan, 2004). It reflects management's discretion in spending the firm's resources; higher SG&A ratio means that firms are expected to have higher agency cost between managers and shareholders (Singh and Davidson, 2003).

There are other measures used as proxies for agency cost, among them; first, the asset liquidity ratio, and the greater the liquidity ratio the higher the agency cost (Prowse, 1990; Wang and Ye, 2014). Second, Henry (2010) used another proxy for agency cost which is TQ ratio, and it is measured as the "sum of the market capitalisation of equity plus the book value of preference shares plus the book value of long-term debt, divided by the book value of total assets" (Henry, 2010, p.31). A lower TQ ratio shows poor managerial performance and the existence of agency problems. Finally, free cash flow ratio (FCF) is used by Henry (2010), and McKnight and Weir (2009); managers with high levels of FCF are expected to invest it in negative net present value projects instead of paying it to shareholders. This paper employs one proxy measure of the agency cost for listed UK firms; following prior studies such as Ang et al. (2000), Henry (2010) and Singh and Davidson (2003), this paper focuses on the asset utilisation ratio as a proxy for agency cost. This measure was adopted by Ang et al. (2000); it has been chosen because it is a valuable proxy for agency costs; it evaluates the effectiveness of the investment decisions and also an indication of whether management is able to make best use of its assets. Therefore, this proxy is more likely to capture the level of agency conflicts that might subsist among shareholders and managers (Truong and Heaney, 2013). Moreover, this paper did not adopt (SG&A) expenses to sales

ratio due to the unavailability (missing data for some companies); data related to expense for the listed UK companies was missing for a number of companies.

4.4.2.2 Performance Variables Measurement

Two measures of firm financial performance are adopted in this paper. The first measure is a more stable market performance measure that is commonly used in the literature; it is TQ. It is calculated as “the ratio of the market value of common shares plus total debt divided by the book value of total assets of the company” (Haniffa and Hudaib, 2006, p.1047). The second measure that is used in this paper is a short term accounting measure that is also frequently used in the literature- ROA- calculated as the ratio of net income to total assets (Klapper and Love, 2004). Using these measures is particularly interesting as ROA is considered backward-looking accounting measures while TQ is considered a forward-looking market measure (Chen et al., 2008). Higher TQ value means that CG of the firm is more effective; it also indicates that there is a good market perception of the performance of the company (Ibrahim and Samad, 2011; Weir et al., 2002). In addition, higher ROA shows the company uses its asset effectively in serving shareholders’ economic interests.

4.4.2.3 CG Measurement

The independent variable is CG; the developed CG Index is as discussed earlier in chapter 2. In this paper, both the aggregate CG-Score and the different CG-Sub indices are used as independent variables to study the influence of both the aggregate and the sub-indices on agency cost and firm performance as mentioned

before. Data about CG was hand-collected from the annual reports of these companies.

4.4.2.4 Control Variables

There are a number of control variables that are included in the analysis; previous literature generally recognises additional control variables for the previous mentioned relationships. In consistence with previous research, some control variables have been included; previous research considered a number of variables including firm size (Beiner et al.,2006; Leung and Horwitz, 2010; Mitton ,2002), and leverage (Ammann et al., 2011; Chen and Austin, 2007; Ibrahim and Samad, 2011; Singh and Davidson, 2003), dividend (Dobbin and Jung, 2011; Florackis and Ozkan, 2009; Henry, 2010), ROA (Fleming et al., 2005; Zhang and Li, 2008), and book to market ratio (BM) (Jurkus et al., 2011; Liu et al., 2011). This paper will consider firm size, leverage (Ammann et al., 2011; Singh and Davidson, 2003), dividend (Dobbin and Jung, 2011; Florackis and Ozkan, 2009), and ROA (Fleming et al., 2005; Zhang and Li., 2008) as control variables.

4.4.3 Empirical Models

Four relationships will be examined in this paper (Figure (4.1) below illustrates these four relationships). The first relationship aims to study the direct association between CG the independent variable and the dependent variable (firm's performance). In the second relationship, CG is the independent variable and agency cost is considered the dependent variable; therefore, in this relationship, the effect of CG on agency cost is examined. In the third relationship, agency cost represents the independent variable and the dependent variable is firm

performance; here the focus is to examine the association among agency cost and firm performance. Finally, the fourth relationship examines the effect of the inclusion of the mediating variable which is agency cost in the first relationship that studies the association among CG and firm performance.

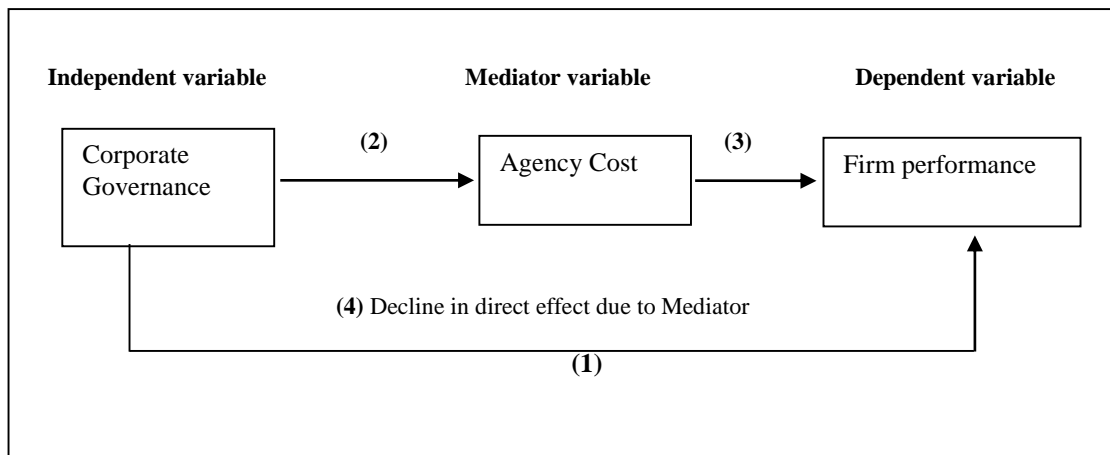


Figure (4.1): The mediation model

There are different methods that are used to examine the relationship between CG and performance; Bozec and Bozec (2012: 82) mentioned some of these methods “portfolio analysis, event studies approach, OLS regressions, panel regressions, instrumental variables in a 2SLS/3SLS and/or a simultaneous equations framework”. In this paper, Panel regression will be used; as mentioned before in chapter (3), panel data is considered one common means to control the endogeneity problem between CG and firm performance. It addresses spurious correlation that might take place if an unnoticed variable concurrently determines CG and performance (Bozec and Bozec, 2012). The other type of endogeneity is simultaneity; most studies, including the current paper, lack a good instrument to address the issue of endogeneity. Thus, in order to address this endogeneity problem between CG and performance, the lagged explanatory variable is used in the analysis. This method is considered a partial method of solving the

simultaneity problem. Therefore, the lagged value of CG is used as explanatory variable; by using CG mechanisms immediately before the financial crisis period; therefore, to a large degree, the problem of simultaneity can be eliminated (Baek, et al., 2004).

Given the panel nature of data, we test which model is appropriate (the fixed or the random-effect model) by using the Hausman test (Wooldridge, 2002). If the null hypothesis is rejected, this suggests that the fixed effect model should be used (this test is included in each of the regression tables). Furthermore, in all panel data regression models, a robust standard error is used; Hoechle (2007) indicated that it is common to rely on “robust” standard errors in order to ensure valid statistical inference.

In order to test H1, which posits that CG is significantly associated with firm performance; the following models have been developed:

First, to investigate the influence of CG score on operating performance, the following model has been estimated:

$$ROA_{it} = \alpha_i + \beta_1 CG_SCORE_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 DIVIDEND_{it} + u_{it} \dots (1)$$

Where CG_SCORE is the total CG index that is computed by the summing of the sub-indices dividing by three (the number of sub-indices), LEV is calculated as total debt to total assets, SIZE is the natural log of the firm’s total assets, ROA is the ratio of net income to total assets, and DIVIDEND is Dividends per Share / Market Price-Year End * 100

Second, to study the impact of CG score on firm value, the following model has been estimated:

$$TQ_{it} = \alpha_i + \beta_1 CG_SCORE_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 DIVIDEND_{it} + \beta_4 ROA_{it} + u_{it} \dots\dots\dots (2)$$

Where TQ is measured as Market value of equity + total debts /total assets, and the other variables as defined before. These previous two models will also be re-estimated by including CG sub-indices instead of CG_SCORE in order to examine the impact of CG sub-indices on firm performance.

To test hypothesis two which examines the relation between CG and agency cost, the following model has been developed:

$$ASSET_UTILIZATION_{it} = \alpha_i + \beta_1 CG_SCORE_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 DIVIDEND_{it} + \beta_5 ROA_{it} + u_{it} \dots\dots\dots (3)$$

Where ASSET_UTILIZATION is measured by annual sales divided by annual total assets, and the other variables as defined before. Also, this previous model is re-estimated by including CG sub-indices instead of CG_SCORE in order to study the impact of CG sub-indices on agency cost.

To test hypothesis three which examines the association among agency cost and firm performance, the agency costs variable (ASSET_UTILIZATION) is added to the previous first two models (model 1 and 2) as follows:

$$ROA_{it} = \alpha_i + \beta_1 CG_SCORE_{it} + \beta_2 ASSET_UTILIZATION_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 DIVIDEND_{it} + u_{it} \dots\dots\dots (4)$$

$$TQ_{it} = \alpha_i + \beta_1 CG_SCORE_{it} + \beta_2 ASSET_UTILIZATION_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 DIVIDEND_{it} + \beta_6 ROA_{it} + u_{it} \dots\dots\dots (5)$$

To test H4, which examines whether agency cost mediates the relationship between CG and firm performance, a formal mediation test is conducted as described by Baron and Kenny (1986). This test includes the following steps: First, examine whether CG which is the independent variable is associated with financial performance which is the dependent variable (Figure 4.1, link 1). Second, examine whether CG affects the mediator, that is, agency cost (Figure 4.1, link 2). Third, adding agency cost as an additional explanatory variable in the model that examines the association between CG and financial performance. In order to establish mediation by agency cost, the following conditions must occur. First, the mediator variable (agency cost) must have an effect on the dependent variable (financial performance) after controlling for the effect of CG (Figure 4.1, link 3). Second, including agency cost in the regression should reduce the degree of the effect of CG (Figure 4.1, link 4).

The next section presents the result of empirical analysis used to test the research hypotheses. Both CG Index and CG Sub-indices are used in order to investigate the effect of these aggregate and disaggregate measures on both agency cost and firm performance. Therefore, section 5 presents the descriptive statistics, the regression results, and finally the robustness checks.

4.5 Empirical Results and Analysis

4.5.1 Descriptive Statistics

Table (4.1) reports the descriptive statistics of the variables: dependent, independent, and control variables. It shows the mean, median and standard deviation for each variable in each individual year and also before and during

crisis periods. It reveals that the average of asset utilisation ratio has increased from 1.023 in the pre-crisis period to 1.122 during crisis period. This increase in the average value indicates a reduction in agency cost from the pre-crisis period to during crisis. This table also shows that the average of CG scores was found to increase from 0.7999 (2005) to 0.8436 (2009); it also increased from 0.8105 before the crisis to 0.8391 during the financial crisis. This indicates that there has been a notable improvement in UK CG from before to during crisis as there is 3.52 per cent increase in CG score during the crisis period. In the same vein, the CG sub-indices similarly depict overall CG behaviour. The results reveal that the average score for BPPI (board practice and process index) was the highest at 0.8978 in the pre-crisis period and increased to 0.9240 in the crisis period. The average score for AAI (accountability and audit index) was 0.8270 in the pre-crisis period showing that, on average, companies perform well in this area. On the other hand, BCII (board composition and independence index) was ranked the lowest with average score of 0.7065 and 0.7377 in both pre and during crisis respectively. Table (4.1) shows that the average scores for the CG sub-indices, namely, BCII, BPPI, and AAI have increased from 0.7065 (pre-crisis) to 0.7377 (during crisis), from 0.8978 (pre-crisis) to 0.9240 (during crisis) and from 0.8270 (pre-crisis) to 0.8556 (during crisis) respectively. Table (4.1) also shows that ROA has increased from (0.0736) in the pre-crisis to (0.0868) in the crisis period. The mean TQ ratio for sample firms in the pre-crisis period has increased from 1.44 to 1.57 during crisis period. Therefore both ROA and TQ increased from pre-crisis to during the crisis period. Concerning the control variables table (4.1) shows that the average natural logarithm of total assets in the pre-crisis period is 21.55 and it

decreased to 21.21 during crisis period. In addition, the mean (median) values of LEV and DIVIDEND in the pre-crisis period are 0.2528 (.2336) and 2.31(2.28) respectively. This has changed to 0.2368 (.2190) and 3.59(3.075) respectively in the during crisis period.

[Table 4.1 around here]

Table (4.2.) reports the Pearson's correlation matrix between the independent variables to test for multicollinearity. Statistically, the correlations between variables are fairly low, implying that no problem of multicollinearity is found. The variance inflation factors (VIF) and tolerance are used as an additional test for multicollinearity; both of them were calculated for each independent variable. VIF statistics that is more than 10 and tolerance lower than 0.2 show a possible multicollinearity problem. The results of this test provide support for the Pearson's correlation coefficients; they are all within acceptable limits. This means that the correlation among these independent variables in this paper does not raise any serious problem that could affect results' validity.

[Table 4.2.around here]

4.5.2 Multivariate Analysis Results

Regression results are presented in the next four sub-sections; these regressions study the association between the three variables: the dependent, independents and the mediating variables. The first section displays the results of the regression of CG and firm performance by examining the effect of CG score and then examining the effect of CG Sub-indices on both performance measures (TQ and ROA). In the second section, the regression of CG and agency cost is reported; also by examining the effect of CG score and CG sub-indices and their effect on

agency cost. The third section will consider the regression between agency cost and firm performance using both measures: TQ and ROA. Finally, the fourth section displays the results of the mediation role of agency cost. In these previous mentioned relationships, the regression analysis will be done for both the period prior to the crisis (2005-2007) and the during crisis period (2008-2009).

4.5.2.1 Regression Results of CG and Firm Performance

Firm performance is measured as mentioned above through two measures (1) market valuation by TQ and (2) ROA as an indicator of the firm's operating performance. The association between CG scores and firm performance is tested by using the lagged value of CG, by using (t-1) variables to minimise the simultaneity problem. Table (4.3) reports the regression results of CG score and TQ; therefore, two regressions between CG and TQ are being run; one for the pre-crisis period (2005 to 2007) and the other for the during-crisis period (2008 to 2009). Model 1 in table (4.3) reports the regression results between CG and TQ for the pre-crisis period (2005 to 2007); TQ is regressed on total CG score, and the regression model also includes the entire control variable defined before. Overall, the result shows a significant positive relationship between CG score and TQ at 5 % significant level and with R² value of 0.3653. This result is in line with prior research that revealed a significant and positive association between CG index and TQ such as Ammann et al. (2011), Bauer et al. (2010), Black et al. (2006), Beiner et al. (2006) and Gompers et al. (2003). Model 2 in table (4.3) reports the regression result between CG and TQ in the during crisis period. It shows a non-significant positive association between CG and TQ where the R² value reduced to 0.3198 during crisis period; therefore this result does not support

hypothesis one that presumes a significant association during the period of the crisis between CG and performance. This non-significant association between CG index and TQ is also in line with previous research; Bauer et al. (2004) revealed a non-significant relationship between CG and firm value. In the same vein, Cheung et al. (2010) also found non-significant positive relationship between the two variables in China. Therefore, from the previous regression, it can be argued that the association among CG score and performance measured by TQ has been changed from the before crisis to during crisis period. The significant positive relationship between CG and TQ before the crisis period turned to be non-significant during crisis period, which indicates that the financial crisis has changed the relation between the two variables.

The regression result also indicates a significant negative relation between size and TQ in the crisis period; this result is consistent with that showed by Lehmann and Hitz (2012) who found that size is negatively related to their valuation measures. Table (4.3) also indicates a positive association between leverage and TQ in the crisis period. Aggrawal et al. (2008) indicated that leverage can increase firm value because as a result of the debt, managers are compulsory to pay out money instead of put this money in projects with negative net present value. McConnell and Servaes (1995) also revealed a significant positive association among leverage and firm value.

[Table 4.3 around here]

When examining the association among CG score and firm's operating performance measured by ROA; the result indicates that there is a non-significant

association between CG and ROA before and during crisis periods with R2 values of 0.2248 and 0.1062 in both pre and during crisis period respectively (Table 4.4 model (1) and model (2)). Bauer et al. (2004) also revealed a non-significant association between CG and performance. In the same vein, other studies including for example Gupta et al. (2009), Gupta et al. (2013), and Price et al. (2011) did not find any significant association among the two variables. Our results are inconsistent with the results of both Bhagat and Bolton (2008) and Gomper et al. (2003); these studies reported a significant positive association among CG and operating performance showing that companies with good CG have better returns, better firm operating performance and have higher value. Therefore, this previous result on the relationship between the GC score and ROA again does not support hypothesis one. Moreover, it also indicates that CG in UK is not related to operating performance measured by ROA in both before and during crisis period.

For the effect of the control variables, the results indicate a statistically significant and negative association among ROA and dividend. Previous studies including Dobbin and Jung (2011), Aljifri and Mustafa (2007) and Bohren and Odegaard (2003) reached the same results. Aljifri and Mustafa (2007) found that paying dividends proved to have a negative impact on the firms' performance. These results were also consistent with the studies by Bohren and Odegaard (2003) that focus on the companies listed on the Oslo stock exchange. According to these previous studies, paying more dividends will result in less retained earnings which in turn minimize the performance of the firm. In the same vein, Dobbin and Jung

(2011) found a negative effect of dividend yield on both ROA and TQ. With regard to the effect of leverage, the results also revealed a negative relationship between leverage and firm operating performance in both before and during crisis. Studies of Gupta et al. (2013), Renders et al. (2010), Sami et al. (2011), and Weir et al. (2011) showed similar results. Finally, the results show a negative relationship between firm's size and ROA, thereby indicating that the increase in size will result in decline in profitability. In the same vein, in a sample of UK from the period from 2002 to 2008, Weir et al. (2011) recognised a significant negative association between size and firm performance.

[Table 4.4 around here]

This paper also aims to examine the effect of CG provisions on firm value and operating performance before and during the financial crisis. Therefore, to test the effect of specific CG sub-indices on firm performance before and during a crisis, the previous tests are repeated by including CG Sub-indices instead of CG-Score in the regression models. Table (4.5) presents the regression results on each of the three CG sub-indices and TQ. Model (1) and model (2) show the results between these three CG sub-indices and TQ before and during crisis period respectively; model (1) shows a non-significant positive association among both BCII and BPII and TQ in the pre-crisis period. In the same vein, Veprauskait and Adams (2013) found that board structure, which includes board composition, board size and board interactions, has no influence on firm Performance in UK. Furthermore, Bhagat and Black (2002) and Hermalin and Weisbach (1991) indicated that there is non-significant effect of outside directors percentage and Tobin's Q. Moreover, the results of model (1) also indicate that AAI is the only CG sub-index that

proves to have a significant positive association with TQ (R² value for model 1 is 0.3700 which means a good explanatory power) which indicates the importance of accountability and audit role in affecting firm value. This significant positive relation is in line with previous result of Bauer et al. (2010) which revealed a significant positive effect of audit committee index on TQ.

In addition, during the crisis period the results indicate non-significant relationship among CG sub-indices and performance (Table 4.5, Model 2). Model (2) indicates a non-significant positive effect of BCII on TQ in the during crisis period. Francis et al. (2012) reached a similar result; they found that board independence did not influence firm performance. Model 2 also indicates a non-significant negative association between BPPI, AAI and TQ. Therefore, during the crisis period no CG sub-indices had an important role in affecting TQ (R² has changes to 0.3331 which is lower than the R² in the pre-crisis period shown in model 1). This result is inconsistent with the result of Erkens et al. (2012) who found a negative association between board independence and firm performance during the crisis. Others studies also found a negative effect of board independence on firm performance (e.g. Agrawal and Knoeber, 1996). These results are contrary to the expectations and inconsistent with agency theory which indicates that good monitoring by board of directors will result in increasing shareholders wealth (Jensen and Meckling, 1976).

When testing the relation between CG sub-indices and ROA in table (4.6) both model (1) and (2) indicate that all CG-sub-indices prove to be non-significantly

related to ROA in both before and during the crisis period (in model 1 and model 2 R² is lower than R² values in model 1 and model 2 in table 4.5 which imply a less the explanatory power of CG provision and other control variables). Model (1) shows that each CG sub-indices is positively related to ROA; it is a non-significant relationship. Also, model (2) indicates that the association between BCII and ROA is insignificant and negative association which is inconsistent with agency theory that considered board of directors to be generally an important CG mechanism due to its role in monitoring and providing advice to management to protect shareholders' interests (Beiner et al., 2004). Therefore, it is more likely that the composition and independence of the board will help to improve board success and hence improve firm performance. So, the obtained result is not consistent with prior literature that indicated significant positive association between board composition and ROA such as Gupta et al. (2009). Finally, model (2) also reports non-significant positive relationship between BPPI, AAI and ROA.

[Table 4.5 and 4.6 around here]

4.5.2.2 Regression Results of CG and Agency Cost

In this session, the impact of CG on agency cost is examined. First, the effect of CG_Score on agency cost before and during the financial crisis will be examined. Then, the effect of CG-Sub indices on agency cost before and during the financial crisis is examined after that. In the following regression (Table 4.7 model (1) and (2)), agency cost is measured by asset utilisation ratio. The results indicate a non-significant positive effect of CG Score on assets utilisation ratio in both before and during crisis period (model 1 and model 2). Therefore, this result is not in

line with agency theory in both before and during crisis periods as CG score is proved to have no effect in reducing agency cost and this result is inconsistent with the previous result of Henry (2010) who found that CG index has a significant negative impact on agency cost.

When looking at the relation between agency cost and the control variables, table (4.7) also indicates a negative significant association between firm size and asset utilisation ratio in both periods; the coefficient for firm size is negative and significant in both periods. Doukas et al. (2000) found that big companies are expected to have more agency costs due to their sophistication; in addition, owners are faced with more informational complications. This result is inconsistent with the study by Florackis and Ozkan (2009) in UK as they found a negative coefficient with agency cost, but it was insignificant. Also, our result is not consistent with those of Ang et al. (2000), McKnight and Weir (2009), Singh and Davidson (2003), and Truong and Heaney (2013) who found firm size to have a significantly negative relationship with agency cost. In addition, dividend proves to be effective in reducing agency cost only in the crisis period. While leverage is found to have a significant negative association with asset utilisation in the pre-crisis period and turned to be insignificant in the crisis period. This result is inconsistent with the results of Fleming et al. (2005), but it is consistent with the results of Truong and Heaney (2013) who revealed that leverage is negatively associated with asset utilisation in the period following the global financial crisis; while our result provides the evidence of this negative relationship in the pre-crisis period. Finally, the coefficient of ROA is positive and significant in the pre-

crisis period which is consistent with the study of Fleming et al. (2005) who revealed that asset utilisation is positively associated with ROA which implies that firm performing well have higher level of asset utilisation.

[Table 4.7 around here]

Table (4.8) reports the regression result of the association among CG Sub-indices and agency cost; AAI is found to significantly reduce agency cost in the pre-crisis period at 5% significant level with R2 value of 0.4633 (see Table 4.8 Model 1). Moreover, both BCCI and BPPI have non-significant effect on agency cost. This result is consistent with previous results of Agrawal and Knoeber (1996), Ang et al. (2000) and Hermalin and Weisbach (1991) who revealed that board independence has non-significant effect in mitigating agency costs. Singh and Davidson (2003) also found that independent outsider on the board did not affect agency cost. In the same vein, Firth et al. (2008) revealed that the composition of the board of directors has no effect on agency cost. These results are inconsistent with agency theory which indicates that board of directors provides better monitoring of management, which in turn reduces agency cost and therefore maximises shareholders' value (Juras and Hinson, 2008). Our result is also inconsistent with the results of Junwei et al. (2011) whose results revealed significant positive association between agency cost and board characterises. In their explanation of the result, they indicated that board characterises might not be the major variables that affect agency costs, but operating conditions and business environment might be.

While in the crisis period none of the CG Sub-indices show statistically significant relationships with agency cost (a low R2 value compared with R2 in the pre-crisis period). Therefore, these findings are similar to the result of McKnight and Weir (2009) who found weak support for the effect of individual CG mechanisms in reducing agency costs. Moreover, results obtained during crisis period are consistent with those obtained by Henry (2010) who reached a similar result as he found that individual CG mechanism has no effect on reducing agency cost. In addition, Table (4.8) indicates a negative and significant association between leverage and asset utilisation in the pre-crisis which means that creditors may leave more flexibility to management instead of exercising their monitoring role. This result is contrary to that obtained from the previous studies; Ang et al. (2000), McKnight and Weir (2009) and Truong and Heaney (2013) found a negative relationship between debt and agency costs. This relationship then turned to be insignificant during the crisis period. Ang et al. (2000) and Singh and Davidson (2003) have mixed results regarding the impact of leverage on agency cost. Ang et al. (2000), for example, found that higher leverage is significantly related to higher asset turnover as a measure of agency cost, but in addition it is not significantly correlated with lower expense ratio. Also, Singh and Davidson (2003) results indicated that higher leverage is significantly associated with lower asset turnover for large firms, but the relationship between higher leverage and lower expense ratio is not always significant. In addition, the result indicates that firms that pay higher dividend yield have significantly lower agency cost in the during-crisis period. Therefore, dividend is considered as a mechanism that is used to control cash and hence avoiding investment in negative return

projects which in turn reduce agency costs. Henry (2010) found the same result regarding dividend yield. However, Borokhovich, et al. (2005) found no evidence that dividend increases reduce agency costs.

[Table 4.8 around here]

4.5.2.3 Regression Results of Agency Cost and Firm Performance

This section reports the regression results between agency cost and performance; the regression is run using agency cost measurement and also different firm performance measurement (Table (4.9) and (4.10)). Table (4.9) shows a significant negative association among agency cost and TQ in the pre-crisis period. It shows a positive association between asset utilisation and TQ at 5% significant level and with R² value of 0.4007 which has been changed to a lower value in model 2 which shows non-significant relation between agency cost and performance. When running the regression using ROA as performance measure (see table 4.10); the result indicates non-significant relationship between agency cost and ROA in the pre-crisis period. But for during-crisis period there is negative impact of agency cost on ROA. Therefore, this result is consistent with the agency theory where agency cost is significantly negatively associated with firm performance; this means that companies that express lower agency problems and costs tend to have better performance and higher value. Moreover, this result is similar to the results of prior studies that revealed a negative association between agency cost and firm performance such as Le and Buck (2011) and Wang (2010).

[Table 4.9 and 4.10 around here]

4.5.2.4 Regression Results of the Mediating Role of Agency Cost

To test H4, which examines whether agency cost mediates the relation between CG and firm performance, a mediation test is conducted as described by Baron and Kenny (1986). According to Baron and Kenny (1986), certain conditions have to be met: first, there should be a significant relationship among the dependent and the independent variable. Second, there should be a significant relationship among the independent and the mediator variable. Third, the mediator should have a significant association with the dependent variable. Finally, the association between the independent and dependent variables should be lessened after including the mediation variable in the regression (Le and Buck, 2011).

When applying this process, first, whether CG is associated with firm performance (Figure 4.1, link 1) is tested; this step establishes that there is a relationship between the independent and the dependent variables that might be mediated. Second, to test whether CG influences the mediator, that is, agency cost (Figure 4.1, link 2); this step essentially involves treating the mediator as if it were an outcome variable. Third, including agency cost as an extra explanatory variable in the previous model (that tests the relationship between CG and firm performance) to examine the impact of agency cost on performance (Figure 4.1, link 3). Therefore, to establish mediation by agency cost between CG and firm performance, the following conditions must be met. First, agency cost should have an impact on firm performance (Figure 4.1, link 3) after taking into account the effect of CG. Second, adding agency cost to the model should reduce the degree

of the effect of CG on firm performance (Figure 4.1, link 4). If all the above conditions are met and the influence of the independent variable on the dependent variable becomes insignificant in the existence of the mediator; then it can be said that the effect of CG is fully mediated by the agency cost. However, if the effect of the CG remains significant in the presence of the agency cost, then the effect of CG is partially mediated. There is also no mediation effect if any of the above conditions are missed (Baron and Kenny, 1986 and Le and Buck, 2011).

Following the above-mentioned steps, this study did not find any support for the mediation effect of agency cost in the crisis period; the results show no influence of CG on performance during the crisis period. Therefore, there is no effect that may be mediated. While for the pre-crisis period, CG score affects TQ (Table 4.3), but CG score is found to have no effect on agency cost (Table 4.7) and agency cost is also found to affect TQ (Table 4.9). Therefore, this mediation effect cannot be tested for the effect of CG score, but it can be tested for one of the CG sub-indices which is AAI. All condition are met for the mediation effect of agency cost on the relationship between AAI and TQ; the results indicate that AAI has a significant effect on TQ (table 4.5) also it is found that AAI has a significant relationship with agency cost (table 4.8); moreover, adding agency cost in the regression that tests the association between AAI and TQ results in a significant association between agency cost and performance and at the same time insignificant association between AAI and TQ (table 4.11 model 1 with a good R2 value which is 0.4028). Therefore, adding agency cost to the regression leads

to insignificant association between AAI and TQ; it can be said that the effect of AAI is fully mediated by the agency cost.

[Table 4.11 around here]

4.5.3 Robustness Checks

In this section, robustness checks are done to test the previous results; First, another proxy of agency cost is used which is the asset liquidity ratio which is measured as the sum of cash and marketable securities divided by total assets (Wang and Ye, 2014; Prowse, 1990). Higher ratio means more management discretion in the employment of these funds; there is a chance that these funds may be sub-optimally used by management. Therefore, it is expected that the higher this ratio the higher the agency costs. The result of this regression is consistent with the previous result indicating a non-significant negative relationship between CG score and agency cost in the pre-crisis period (Table 4.12, Model1). Second, an extra variable that may be correlated with Tobin's Q is added into regression; it is the liquidity variable measured as the annual share volume over the year divided by shares outstanding. Wu and Liu (2011) showed that stocks that are characterised with more liquidity have better TQ. Again, the results are similar, indicating that the association between CG and TQ is the same, i.e. positive and significant (Table 4.12, Model 2). This means that this omitted variable is unlikely to explain the previous results. Third, another test is done by including the block ownership as an extra variable as previous studies like Lemmon and Lins (2003) and Seifert et al. (2005) indicated a significant relationship between ownership concentration and firm value. Therefore, by

including block ownership in the regression model, the result remains unchanged (Table 4.12, Model 3). The fourth test is done by changing the during crisis period classification by including year 2007 in the time period; the relation between agency cost and performance measured by ROA is tested using the new definition of the during crisis period (2007-2009). This new classification of the crisis period is adopted to examine if the results are sensitive to the classification of the crisis period and we get the same result (Table 4.12, Model 4). Finally, an additional explanatory variable is added; an industry effect is controlled through the inclusion of industry-specific dummy variables; by including dummy variables in the regression that examines the relationship between CG and agency cost measured by asset utilisation. The results are unchanged indicating that the effect of CG on asset utilisation is positive and non-significant in the pre-crisis period (Table 4.12, Model 5).

[Table 4.12 around here]

4.6 Summary and Concluding Remarks

This study aims to complement the governance literature by providing new evidence of the effect of CG on firm performance before and during the recent financial crisis; CG effect on firm performance and also its role on mitigating agency cost in the UK was the main focus in this paper. In particular, the focus was on investigated the impact of both aggregate CG and CG-sub indices on both agency cost and firm performance. The influence of agency cost as a mediator in this relationship was also examined. Analysis of both agency cost and firm

performance especially during crisis period allow the researcher to shed light on CG aspects that are less clear during stable and normal periods.

Using a sample of 139 UK FTSE 350 firms, empirical analysis yields a number of key findings; the results reveal a significant positive association between CG and firm performance; from the results shown in the previous section, it is found that CG affects firm performance only in the pre-crisis period as it indicates a significant positive relationship between CG and TQ. The result also indicates a non-significant positive relation between CG and ROA in both before and during the crisis periods. Therefore, this significant result between CG and TQ is consistent with an agency theoretic perspective of monitoring that indicates that better quality of CG has a positive consequence on firm performance, but this holds only for the pre-crisis period only. Considering the CG-Sub indices it has been found that only AAI has a significant positive association with TQ in the period prior to the crisis, while both BCII and BPPI have no influence. This paper also showed interesting results that during the recent financial crisis no evidence is found of a significant association among CG and performance; this holds for both CG score and CG sub-indices. This result is consistent with the study by Gupta et al. (2013) who indicated an insignificant relation between CG and performance during the recent crisis on a sample of non-financial firms in developed countries including UK. Therefore, the empirical results of this paper are contrary to the findings of previous studies concerning the previous crisis period (the Asian financial crisis) which indicated a link between CG and performance (Johnson et al., 2000; Mitton, 2002).

Our findings also reveal a non-significant relationship among CG score and agency cost in both before and during crisis period; this finding is robust to an alternative definition of agency cost. The findings also reveal that AAI is the only CG sub-index that has a significant association with agency cost in the pre-crisis period. In general, CG sub-indices measuring board composition and independence, and board practice and process do not influence agency cost. These results imply an ineffective role of both board composition and independence and board process in reducing agency costs. Therefore, considering the impact of CG sub-indices gives better result in reducing agency cost than considering overall CG mechanisms especially in the pre-crisis period. Thus, these findings reveal that CG proves to be effective in reducing agency cost in the pre-crisis period. However, moving to during crisis period, it can be argued that the improvement in both CG score, and CG sub-indices has no effect on agency cost. Finally, the results of mediation test show that agency cost fully mediate the association between CG and firm performance only in the pre-crisis period and this is held only for one of the CG sub-indices-AAI-. Therefore, consistent with agency theory, this finding provides empirical support on the role of agency cost in mediating the relation between CG and performance.

To sum up, based on the result of the current paper, it can be argued that CG proved to be effective in reducing agency cost and improved firm performance only in the period prior to the crisis period. These results imply that CG mechanisms' effects differ from crisis to non-crisis period. Although there are improvements in CG mechanisms form the pre-crisis to during crisis period but

there is no effect on firm performance; this suggests that there is a need to new governance structure to enable firms to cope with challenges in business environment. Also, this suggests that policy communities should consider CG differently during crisis conditions and should investigate whether those good governance mechanisms have the same effect during non-stable periods. Finally, the current study did not find either any support for the common view in both media and literature that considers CG failure to be one of the main causes of the current crisis, and this is at least for non-financial firms. In this study, no evidence is found that CG detrimental to firm performance during crisis period. However, it was expected from CG in the situation of the crisis to play more roles in reducing agency problem and enhancing firm performance. It was expected if CG to make a difference, it should do that in the period of financial crisis. Consequently, there is a need for improvements in CG mechanisms that failed to reduce agency cost and enhance firm performance. Companies should make more effort specifically in improving their boards and increase their independence especially that board independence is considered a significant influencing aspect on board activity. Francis et al. (2012) revealed that the effect of board efficacy on firm performance is more manifested during crisis period than the pre-crisis period. A final thought: CG mechanisms should be evaluated in terms of their ability to act well in different condition whether it is normal or turbulent conditions.

Despite the findings, this paper has limitations; first, the results are based on UK; therefore, focusing on single country is beneficial in giving more detailed results about this country but, at the same time, these results may not be generalisable.

Consequently, future studies should focus on both developed and developing countries as that might be useful in terms of international comparability. Second, this paper also focuses on larger listed companies; therefore a more empirical work is needed to investigate CG effect on agency costs and firm performance for smaller business.

The results of this paper appear to boost significant implications; first, for both shareholders and managers of firms who are concerned about firm performance, the findings suggest that the adoption of good CG practices by UK companies will help decrease agency cost, which in turn results in performance improvement for firms and their shareholders. Therefore, investors should be aware of CG practice of firms in UK in which they are thinking or considering putting their investment in. In addition, both board of directors and managers of firms should be keen to adopt good CG practices in order to reduce agency cost and enhance performance. Moreover, the results of this paper will guide them on CG areas that need improvement which prove to be ineffective in reducing agency cost especially during the crisis period. Second, these findings are also important for regulators to formulate appropriate CG control mechanisms to protect the interest of shareholders.

Based on the results of this paper, a number of future research recommendations are suggested; first, it is a good idea to examine external CG mechanisms' effects on agency costs. For future research, the role of further external monitoring mechanisms, e.g. financial analysts, on the extent of agency costs may be of

interest; it will be of great significance to include laws, regulations and the external market mechanisms, into an empirical model to examine their effect on agency costs. Second, those who want to further investigate the effect of CG on agency cost needs to cover financial sectors which have different ownership and governance structure, which will add to the literature as it will provide new evidence into the effective role of CG in reducing agency cost in a period of financial crisis in a vital sector. Finally, future research might also try to examine how CG mechanisms affect other mediating variables that might be expected to eventually affect performance. By doing this, it might help, to a greater extent, to understand the inclusive results of the prior research regarding the influence of CG on firm performance.

TABLES

Table (4.1): Descriptive Statistics

This table provides descriptive statistics on the overall sample for each year from 2005 to 2009 and also for the pre-crisis and during-crisis periods for the dependent, independent and control variables. Where CG SCORE is the governance score, BCII is the Score of board composition and independence index , BPPI is the score of board process and practice index, AAI is the score of accountability and audit index ,SIZE is Natural log of total assets, LEV is the ratio of total debt to total assets, Dividend is dividends Per Share / Market Price-Year End * 100 (World Scope item 09404), ROA is the ratio of net income to total assets, TQ is Market value of equity + total debts /total assets, and ASSET_UTILIZATION is ratio of annual sales to total assets.

Variables	Mean (Median) (Std. Dev.) (2005)	Mean (Median) (Std. Dev.) (2006)	Mean (Median) (Std. Dev.) (2007)	Mean (Median) (Std. Dev.) (2008)	Mean (Median) (Std. Dev.) (2009)	Mean (Median) (Std. Dev.) (2005 to 2007)	Mean (Median) (Std. Dev.) (2008 to 2009)
CG_SCORE	0.7999 (0.815) (.099)	0.8086 (0.821) (.099)	0.8228 (0.833) (.092)	0.8346 (0.85) (.088)	0.8437 (0.863) (.087)	.8105 (.821) (.097)	.8391 (0.857) (.088)
BCII	.6977 (.714) (.1914)	.7007 (.714) (.1944)	.7213 (.714) (.1830)	.7305 (.714) (.1828)	.7449 (.714) (.1785)	.7065 (.714) (.1895)	.7377 (.714) (.1805)
BPPI	.8874 (.909) (.1151)	.8978 (.909) (.1108)	.9083 (.909) (.1114)	.9234 (.909) (.0931)	.9247 (.909) (.0948)	.8978 (.909) (.1125)	.9240 (.909) (.0938)

Table (4.1) Continued

Variables	Mean (Median) (Std. Dev.) (2005)	Mean (Median) (Std. Dev.) (2006)	Mean (Median) (Std. Dev.) (2007)	Mean (Median) (Std. Dev.) (2008)	Mean (Median) (Std. Dev.) (2009)	Mean (Median) (Std. Dev.) (2005 to 2007)	Mean (Median) (Std. Dev.) (2008 to 2009)
AAI	.8147 (.875) (.1280)	.8273 (.875) (.1188)	.8390 (.875) (.1148)	.8498 (.875) (.1117)	.8615 (.1071) (.0357)	.8270 (.875) (.1208)	.8556 (.875) (.1094)
SIZE	21.41 (21.22) (1.377)	21.61 (21.46) (1.406)	21.62 (21.46) (1.409)	21.16 (21.06) (1.407)	21.27 (21.10) (1.384)	21.55 (21.38) (1.397)	21.21 (21.07) (1.394)
LEV	0.2470 (.2312) (.1640)	0.2629 (.2438) (.1681)	0.2485 (.2311) (.1657)	0.2369 (.2192) (.1749)	0.2366 (.2125) (.1657)	0.2528 (.2336) (.1657)	0.2368 (.2190) (.1700)
DIVIDEND	2.47 (2.46) (1.44)	2.38 (2.41) (1.43)	2.08 (2.05) (1.19)	3.41 (2.91) (2.90)	3.77 (3.39) (3.55)	2.31 (2.28) (1.36)	3.59 (3.075) (3.24)
ROA	.1024 (.0751) (.1013)	.0670 (.058) (.1104)	.0513 (.0482) (.0930)	.0804 (.0691) (.0726)	.0933 (.0752) (.0755)	.0736 (.060) (.1038)	.0868 (.0715) (.0742)
TQ	1.79 (1.50) (.9327)	1.42 (1.24) (1.208)	1.15 (0.99) (.6910)	1.48 (1.16) (.9593)	1.67 (1.34) (1.078)	1.45 (1.23) (.9994)	1.57 (1.26) (1.022)
ASSET_UTILIZATION	1.054 (.9637) (.6402)	.9982 (.9228) (.6474)	1.016 (.9178) (.6744)	1.147 (.9956) (.8713)	1.096 (.9812) (.6423)	1.023 (.9340) (.6530)	1.122 (.9897) (.7645)

Table (4.2): Pearson’s Correlation Matrix

This table presents the Pearson’s correlation matrix for the independent variables used in the empirical analysis for both pre and during the financial crisis. All variables fully defined in Table (4.1).

Variables	CG_SCORE	BCII	BPPI	AAI	SIZE	LEV	DIVIDEND	ROA	ASSET_UTILIZATIO
Pre-crisis									
CG_SCORE	1.0000								
BCII	0.6665***	1.0000							
BPPI	0.5515***	0.1699***	1.0000						
AAI	0.5938***	0.1841***	0.2140***	1.0000					
SIZE	0.0685	0.0187	0.0926*	0.0954*	1.0000				
LEV	0.1689 ***	0.1399 ***	0.1371***	0.0820*	0.2558 ***	1.0000			
DIVIDEND	0.1362***	0.1189 **	0.0065	0.1693 **	0.1292 ***	0.2662***	1.0000		
ROA	-0.1283***	-0.0689	-0.0663	-0.0875*	-0.2293***	-0.2477***	-0.0043	1.0000	
ASSET_UTILIZATIO	0.1003**	0.1089**	-0.0704	0.0171	-0.2303***	-0.1092**	0.2534***	0.2037***	1.0000
During-crisis									
CG_SCORE	1.0000								
BCII	0.6810***	1.0000							
BPPI	0.5660***	0.2005***	1.0000						
AAI	0.5567***	0.1126*	0.1575***	1.0000					
SIZE	-0.0678	-0.1052*	-0.0413	0.0267	1.0000				
LEV	0.0837	0.0562	0.0449	0.0718	0.2681***	1.0000			
DIVIDEND	0.1598***	0.1565***	-0.0492	0.1137*	0.0117	0.2288***	1.0000		

Table (4.3)
Regression Results of the Relation between Corporate Governance Score and TQ Pre and During the Financial Crisis

This table presents the regression results of corporate governance score and TQ pre and during the financial crisis. CG impact on TQ pre and during the financial crisis is examined. All variables fully defined in Table (4.1). These models provide t-statistics which are in parentheses. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	TQ pre-crisis Model (1)	TQ during crisis Model (2)
intercept	-.2316(-1.63)	-.1842(-1.01)
CG_SCORE	.2774(2.56)**	.0500(0.42)
SIZE	-.2885(-1.33)	-.7551(-2.81) ***
LEV	-.1010(-1.22)	.3908(3.27)***
DIVIDEND	-.6378(-4.62)***	-.1419(-3.71)***
ROA	.0020(0.03)	.1281(3.09)***
<i>R2</i>	<i>0.3653</i>	<i>0.3198</i>
<i>Observations</i>	<i>278</i>	<i>278</i>
<i>Groups</i>	<i>139</i>	<i>139</i>
<i>hausman test/ Prob > chi2</i>	<i>0.0000</i>	<i>0.0000</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Fixed effects</i>

Table (4.4)
Regression Results of the Relation between Corporate Governance Score and ROA
Pre and During the Financial Crisis

This table presents the regression results of corporate governance score and ROA pre and during the financial crisis. All variables fully defined in Table (4.1.). These models provide t-statistics or z-statistics which are in parentheses depends on the used regression fixed effect or random effect respectively. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	ROA pre-crisis Model (1)	ROA during-crisis Model (2)
Intercept	-.3613(-0.80)	-.2370(-1.18)
CG_SCORE	.3216(1.04)	.0123(0.09)
SIZE	-.7586(-1.88)*	-.1557(-2.00)**
LEV	-.4595(-3.30)***	-.2515(-3.30)***
DIVIDEND	-.5030(-2.83)***	-.0318(-0.58)
<i>R</i> ²	0.2248	0.1062
<i>Observations</i>	278	278
<i>Groups</i>	139	139
<i>hausman test/ Prob > chi2</i>	0.0000	0.5233
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Random effects</i>

Table (4.5)
Regression Results of the Relation between Corporate Governance Sub-Indices and TQ Pre and During the Financial Crisis

This table presents the regression results of corporate governance Sub-Indices and TQ pre and during the financial crisis. All variables fully defined in Table (4.1.). These models provide t-statistics which are in parentheses. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	TQ pre-crisis Model (1)	TQ during-crisis Model (2)
intercept	.1757(3.98)***	-.1101(-2.17)**
BCII	.0977(1.64)	.0640(1.01)
BPPI	.0236(0.45)	-.0516(-0.74)
AAI	.1049(1.74)*	-.0782(-0.84)
SIZE	-.2999(-1.38)	-.7427 (-2.47)**
LEV	-.1072(-1.27)	.3630(3.02)***
DIVIDEND	-.6341(-4.62)***	-.1376(-3.57)***
ROA	.0025 (0.04)	.1327(3.18)***
<i>R2</i>	<i>0.3700</i>	<i>0.3331</i>
<i>Observations</i>	<i>278</i>	<i>278</i>
<i>Groups</i>	<i>139</i>	<i>139</i>
<i>hausman test/Prob > chi2</i>	<i>0.0000</i>	<i>0.0000</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Fixed effects</i>

Table (4.6)
Regression Results of the Relation between Corporate Governance Sub-indices and ROA Pre and During the Financial Crisis

This table presents the regression results of corporate governance Sub-indices and ROA pre and during the financial crisis. All variables fully defined in Table (4.1.). These models provide t-statistics or z-statistics which are in parentheses depends on the used regression fixed effect or random effect respectively. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	ROA pre-crisis Model (1)	ROA during-crisis Model (2)
Intercept	.1025(1.96)*	-.2180(-3.03)***
BCII	.0757(0.38)	-.0122(-0.20)
BPPI	.0125(0.13)	.0112(0.14)
AAI	.1081(0.54)	.0630(0.98)
SIZE	-.7695(-1.85)*	-.1617(-2.05)**
LEV	-.4690(-3.43)***	-.2497(-3.26)***
DIVIDEND	-.4986(-2.76)***	-.0381(-0.71)
<i>R</i> ²	0.2228	0.1080
<i>Observations</i>	278	278
<i>Groups</i>	139	139
<i>hausman test/ Prob > chi2</i>	0.0005	0.4667
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Random effects</i>

Table (4.7)
Regression Results of the Relation between Corporate Governance Score and agency cost Pre and During the Financial Crisis

This table presents the regression results of agency cost and corporate governance score pre and during the financial crisis. All variables fully defined in Table (4.1.). These models provide t-statistics which are in parentheses. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	ASSET-UTILIZATION pre-crisis Model (1)	ASSET-UTILIZATION during-crisis Model (2)
intercept	-.0581(-0.53)	-.0212(-0.25)
CG_SCORE	.0366(0.48)	.0396(0.66)
SIZE	-.6034(-5.61)***	-.6475 (-4.25)***
LEV	-.1028(-2.14)**	-.0713(-1.03)
DIVIDEND	-.0142(-0.25)	.0450(2.14)**
ROA	.0287(0.62)	.0657(2.09)**
<i>R2</i>	<i>0.4439</i>	<i>0.2941</i>
<i>Observations</i>	<i>278</i>	<i>278</i>
<i>Groups</i>	<i>139</i>	<i>139</i>
<i>hausman test/Prob > chi2</i>	<i>0.0000</i>	<i>0.0000</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Fixed effects</i>

Table (4.8)
Regression Results of the Relation between Corporate Governance Sub-indices and agency cost Pre and During the Financial Crisis

This table presents the regression results of agency cost and corporate governance Sub-Indices pre and during the financial crisis. All variables fully defined in Table (4.1). These models provide t-statistics which are in parentheses. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	ASSET_UTILIZATION pre-crisis Model(1)	ASSET_UTILIZATION during-crisis Model(2)
intercept	-.0028(-0.19)	.0348(1.38)
BCII	-.0059(-0.13)	.0024 (0.08)
BPPI	-.0284(-0.83)	.0588(1.33)
AAI	.0709(2.22)**	.0046(0.11)
SIZE	-.6067(-6.03) ***	-.6472(-4.38) ***
LEV	-.1105(-2.31)**	-.0683(-0.99)
DIVIDEND	-.0107(-0.20)	.0460 (2.17)**
ROA	.02712(0.63)	.0660(2.09)**
<i>R2</i>	<i>0.4633</i>	<i>0.3021</i>
<i>Observations</i>	<i>278</i>	<i>276</i>
<i>Groups</i>	<i>139</i>	<i>138</i>
<i>hausman test/Prob > chi2</i>	<i>0.0000</i>	<i>0.0000</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Fixed effects</i>

Table (4.9)
Regression Results of the Relation between Agency Cost and Firm Performance (TQ)
Pre and During the Financial Crisis

This table presents the regression results of agency cost and firm performance pre and during the financial crisis. All variables fully defined in Table (4.1.). These models provide t-statistics which are in parentheses. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	TQ pre-crisis Model (1)	TQ during-crisis Model (2)
Intercept	-.2068 (-1.42)	-.1799(-0.98)
ASSET_UTILIZATION	.4264(2.14)**	.2002(1.19)
CG_SCORE	.2618(2.35) **	.0420 (0.35)
SIZE	-.0312(-0.13)	-.6254(-2.26)**
LEV	-.0572(-0.68)	.4051(3.53)***
DIVIDEND	-.6317(-4.40)***	-.1509(-3.72)***
ROA	-.0102(-0.16)	.1149(2.65)***
<i>R2</i>	<i>0.4007</i>	<i>0.3281</i>
<i>Observations</i>	<i>278</i>	<i>278</i>
<i>Groups</i>	<i>139</i>	<i>139</i>
<i>hausman test/Prob > chi2</i>	<i>0.0000</i>	<i>0.0000</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Fixed effects</i>

Table (4.10)
Regression Results of the Relation between Agency Cost and Firm Performance (ROA) Pre and During the Financial Crisis

This table presents the regression results of agency cost and firm performance pre and during the financial crisis. All variables fully defined in Table (4.1.). These models provide t-statistics or z-statistics which are in parentheses depends on the used regression fixed effect or random effect respectively. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	ROA pre-crisis Model (1)	ROA during-crisi Model (2)
Intercept	-.3316(-0.68)	-.1595(-0.78)
ASSET_ UTILIZATION	.4334(0.67)	.2005(2.13)**
CG _SCORE	.3018(0.91)	-.0263(-0.19)
SIZE	-.4875(-0.71)	-.1135(-1.39)
LEV	-.4092(-2.86)***	-.2220(-2.68)***
DIVIDEND	-.4905(-2.65)***	-.0783(-1.28)
<i>R2</i>	<i>0.2345</i>	<i>0.1278</i>
<i>Observations</i>	<i>278</i>	<i>278</i>
<i>Groups</i>	<i>139</i>	<i>139</i>
<i>hausman test/Prob > chi2</i>	<i>0.0001</i>	<i>0.0516</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Random effects</i>

Table (4.11)
Regression Results of the Mediating Role of Agency Cost On the Relationship
between AAI and Firm Performance (TQ) Pre the Financial Crisis

This table presents the regression results of the mediating role of agency cost on the relationship between AAI and firm performance pre the financial crisis. All variables fully defined in Table (4.1.). This model provides t-statistics which are in parentheses. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	TQ pre-crisis Model (1)
intercept	.1769(3.87)***
BCII	.1002(1.61)
BPPI	.0355 (0.70)
AAI	.075(1.21)
ASSET_UTILIZATION	.4176(2.09)**
SIZE	-.0465(-0.20)
LEV	-.0610(-0.71)
DIVIDEND	-.6296(-4.42)***
ROA	-.0087(-0.14)
<i>R</i> ²	0.4028
<i>Observations</i>	278
<i>Groups</i>	139
<i>hausman test/Prob > chi2</i>	0.0000
<i>Method of estimation</i>	<i>Fixed effects</i>

Table (4.12) Robustness Checks

Table (4.12) presents the results of robustness checks. Model (1) presents the random effect regression results between agency cost and corporate governance score pre the financial crisis using another proxy of agency cost which is the asset liquidity ratio defined as the sum of cash and marketable securities divided by total assets. Model (2) gives the fixed effect regression results when LIQUIDITY is added as an additional independent variable. Model (3) gives the fixed effect regression results when BLOCK is also added as an additional independent variable. Model (4) gives the fixed effect regression analysis when using the period from 2007 to 2009 as the during crisis period. Model (5) presents the regression when adding industry dummy variables in the regression in the pre-crisis period. These models provide t-statistics or z-statistics which are in parentheses depends on the used regression fixed effect or random effect respectively. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	Liquidity Ratio pre-crisis Model (1)	TQ pre-crisis Model (2)	TQ pre-crisis Model (3)	ROA During-crisis Model (4)	ASSET_UTILIZATION pre-crisis Model (5)
intercept	.0774 (0.37)	-.2318(-1.63)	-.3226(-1.34)	.5890(1.97)	-.4624(-1.11)
CG_SCORE	-.0740(-0.54)	.2776(2.56)**	.2778(2.58)**	-.4198(-1.99)**	.0610 (0.88)
SIZE	-.1803(-2.52)**	-.2901(-1.33)	-.2783(-1.32)	.1011(0.30)	-.3104(-4.71)***
LEV	-.0096(-0.10)	-.1007(-1.22)	-.1023(-1.24)	-.3295(-1.82)*	-.1454(-4.00)***
DIVIDENEND	-.2170 (-2.49)**	-.6368(-4.66)***	-.6374(-4.61)***	-.1961(-2.73) ***	.0638(1.41)
ROA	.0567 (0.82)	.0016(0.03)	.0034 (0.05)	-----	.0491(2.22)**
LIQUID	-----	.0043(0.07)	-----	-----	-----
BLOCK	-----	-----	.0682(0.55)	-----	-----
INDSTURY	-----	-----	-----	-----	YES
ASSET_UTILIZATION	-----	-----	-----	1.168(3.75)***	-----
<i>R2</i>	<i>0.1113</i>	<i>0.3654</i>	<i>0.3670</i>	<i>0.1702</i>	<i>0.1659</i>
<i>Observations</i>	<i>278</i>	<i>278</i>	<i>278</i>	<i>417</i>	<i>278</i>
<i>Group</i>	<i>139</i>	<i>139</i>	<i>139</i>	<i>139</i>	<i>139</i>

Chapter Five: Essay Three
Corporate Governance and Block Ownership Roles
in Reducing Information Asymmetry

Chapter Five: Essay Three Corporate Governance and Block Ownership Roles in Reducing Information Asymmetry

Abstract

This paper examines the effect of both Corporate Governance (CG) and block ownership of a sample of FTSE 350 UK listed companies on information asymmetry over the period from 2005 to 2009 that covers before and during the financial crisis. The effects of different CG sub-indices and different types of block ownership on information asymmetry are also investigated. Moreover, it also examines if CG can lessen the positive association between block ownership and information asymmetry. The empirical results of a sample of 139 listed firms indicated that CG had a negative association with information asymmetry measured by bid-ask spread in the pre-crisis period while no evidence of significant relationship is found for the period of the crisis itself. This suggests that CG is an effective tool to reduce information asymmetry in stable economies only but not during the crisis period. Moreover, the results indicated a non-significant association between block ownership and information asymmetry in the pre-crisis period. However, a positive statistical association is found between block ownership and information asymmetry in the crisis period; both institutional block shareholders and other block holders are found to significantly affect bid-ask spread used as a proxy for information asymmetry. Finally, the results showed that CG did not have any influence in lessening the positive relationship between block ownership and bid-ask spread during crisis period.

Keywords: Corporate Governance, block ownership, information asymmetry, bid-ask spread, financial crisis, UK

5.1 Introduction

The effectiveness of Corporate Governance (CG) remains a very important topic, especially in the wake of scandals such as Enron, WorldCom...etc. Moreover, the recent financial crisis that extended rapidly causing a global economic shock and turbulence in financial markets has highlighted how important it is to adopt good forms of CG. Thus, understanding the effect of CG mechanisms on information asymmetry is considered important from both the perspectives of investors and public policy. By reviewing the empirical literature of CG, it is found that it tended to focus more on the impact of CG on firm value, performance and on cost of capital (Beiner et al., 2006; Krafft, et al., 2014; La Porta et al., 2000). One means through which CG mechanisms may affect value, performance and cost of capital is through their influence on information asymmetry (Chung, et al., 2010; and Lang and Lundholm, 2000).

However, these previous studies provide only an indirect link between CG and information asymmetry. On the other hand, the direct empirical association between CG and information asymmetry is still limited in prior literature (Byun et al., 2011; Chung et al., 2010; Elbadry et al., 2013; Fan, 2013; Kanagaretnamand et al., 2007). What makes things puzzling is the limited available literature which provides conflicting evidence regarding the relationship between CG and information asymmetry. Furthermore, prior research has examined this relationship during normal periods; there was no previous study that examined the role of CG in mitigating information asymmetry during crisis periods in general and in UK in particular. Although, some previous literature has highlighted the

importance of CG during financial crises (Adams, 2012; Aebi et al., 2012, Aldamen et al., 2012; Leung and Horwitz 2010 and Mitton 2002), these studies did not consider the role which CG plays in reducing information asymmetry during the crisis period. Therefore, this important issue is still missing in the literature; hence it needs to be examined. Therefore the current paper adds to this literature by presenting new evidence regarding the association between CG and information asymmetry in the period of financial crisis. It is important to consider the effectiveness of CG during this turbulent period. During this unstable period, it is expected that all parties, including investors, firms, and the market, would act in different ways. The current study extends this analysis to cover both the periods before and during the financial crisis to examine whether CG helped to mitigate the effect of the financial crisis shock and helped to reduce information asymmetry.

Moreover, following previous studies that indicated ownership structure as one source of information asymmetry (Su, 2004 and Hope et al., 2009), the current paper also aims to study the influence of block ownership on information symmetry. This issue is important because ownership concentration is considered a governance mechanism in itself; hence block shareholders should monitor management and thus reduce agency cost (Edmans, 2013). But on the other hand, rather than monitoring management, block shareholders can influence management to take actions in their interest; hence this may increase the level of information asymmetry (Heflin and Shaw, 2000). Therefore, this paper contributes to the prior literature and examines the influence of block

shareholdings on information asymmetry. In addition, it examines the influence of various categories of block ownership on information asymmetry. This paper also examines CG's role in alleviating the expected negative impact of block ownership. Following the study of Byun et al. (2011), who considered the alternative mechanisms that could help to supply the information to investors and which might reduce the negative effect caused by block ownership, the current paper examines the role of CG system in mitigating the positive relationship between block ownership and information asymmetry.

To sum up, the current paper provides the following contributions to the previous studies. First, it addresses directly the relationship between CG and information symmetry in UK during the crisis period; this would shed light on the effectiveness of CG. Second, it provides new evidence on the effect of overall composite measure of CG on information asymmetry. Third, it also contributes to ownership structure literature by providing new evidence of the association between block ownership and information asymmetry during crisis period. In addition, it considers the different categories of block ownership. Fourth, it looks at the CG's role during crisis period in lessening the positive association between block ownership and information asymmetry which has not examined before.

So this research attempts to answer the following research questions:

1. Does CG affect information asymmetry before and during the financial crisis?
2. Does block ownership positively associated with information asymmetry?
And, if so

3. Does CG help lessen the positive relationship between block ownership and information asymmetry?

The empirical results show a significant negative effect of CG on information asymmetry pre the crisis period while no evidence is found during crisis period. In addition, the results provide evidence of a positive association between ownership concentration and information asymmetry during crisis period. Both institutional block shareholders and other block shareholders have significant positive association with bid-ask spread during crisis period, indicating that they are perceived as having private information. Finally, CG was found with non-significant effect in lessening the positive association between block ownership and information asymmetry.

The remainder of this paper proceeds as follows. Section 2 presents the literature review and the development of hypotheses. Section 3 deals with the sampling, variable measurement, and empirical models used. Section 4 focuses on data analysis and on the empirical results, and the final section provides summary and conclusion.

5.2 Literature Review and Hypothesis Development

In this section, the concept of information asymmetry is discussed first and the relationship between agency theory and information asymmetry is reviewed. Then, theoretical and empirical literature linking information asymmetry to CG is also reviewed. Finally, I review the existing literature tying ownership structure with information asymmetry.

5.2.1 Information Asymmetry

Akerlof's (1970) is considered the first to introduce the concept of information asymmetry: "*The Market for Lemons: Quality Uncertainty and the Market Mechanism*". Akerlof relates quality and uncertainty and develops the notion of asymmetric information, using the automobile market as his example. Akerlof (1970) mentioned an example of the market for used cars where the sellers generally have better information than the buyers. According to Akerlof (1970) this information variation between both parties results in the adverse selection "lemons problems" that leads to the improper functioning of the market. Therefore, asymmetric information is also known as the "Lemons" problems and usually refers to the difference of information that is held by market participants (Biswas, 2004).

Asymmetric information is also linked to the principal-agent problem; this means that the problem of information asymmetry exists because managers have more knowledge and awareness regarding the company and its financial position than the other current or potential shareholders (Solomon, 2009). Therefore, the separation of ownership and control creates information asymmetry between both shareholders and managers, which in turn lets shareholders exposed to agency costs (Ashbaugh et al., 2004). Therefore, information asymmetry is considered to be the major source of agency problems (Fan, 2013).

These informational asymmetries cause adverse selection and moral hazard problems. Moral hazard can be defined, according to Eisenhard (1989), as the

“lack of effort on the part of the agent”. There are different forms of self-interested managerial behaviour that could include: shirking behaviour, consumption of perquisites, excessive pay, and empire-building. Information asymmetry also creates an adverse selection problem, which can be defined as the misrepresentation of ability by the agent; the agent may misrepresent his/her self as having specific skills and, at the same time, the principal cannot completely confirm these skills (Ashbaugh et al., 2004; Gault, 2007, and Eisenhard, 1989).

Information asymmetry has several consequences; it can affect cost of capital. The more severed information asymmetry companies have, the higher the cost of capital will be (Lambert et al., 2008). Information asymmetry could also harm market liquidity because higher information asymmetry leads to lower market liquidity (Bhide, 1993); it affects the efficiency of capital markets (Zhang, 2006), it potentially leads to market failure (Akerlof, 1970 and Fama, 1991) and it also affects earnings management. With more information asymmetry, there will be a more serious level of earnings management (Dai et al, 2013; Richardson, 2000).

Recognising these consequences of information asymmetry, several solutions have been suggested; CG is considered one important mechanism for reducing information asymmetry. As explained by Brandas (2011: 55) *“The problems generated by the information asymmetry within the agency relationships at corporation level, governments and capital markets led to a higher necessity for corporate governance (CG)”*, CG aims at resolving both types of the agency conflicts that arise either between shareholders and managers or between block

shareholders and minority shareholders; this would result in lower agency costs (Tang and Wang, 2011). Thus, based on the agency theory, CG is considered one important factor in affecting the information disclosed to shareholders; by affecting the level of information available to shareholders, this helps in reducing information asymmetry (Charoenwong et al., 2011).

5.2.2 Corporate Governance and Information Asymmetry

Previous related work, as mentioned above, had given more attention to the association between CG and various measures of firm value (Black et al., 2006), firm performance (Bauer et al., 2008; Sami et al., 2011), and the association between CG and cost of capital (Ashbaugh et al., 2004; Chen et al., 2009; Donker and Zahir, 2008). These previous studies have suggested a relationship between both CG and information asymmetry; one means through which CG mechanisms may have an influence on firm value, performance, and cost of capital is via their influence on the level of information asymmetry. Information asymmetry is suggested to be the main source of agency problems (Armstrong et al., 2012). CG has been viewed as effective in reducing information asymmetry (Cerbioni and Parbonetti, 2007; Donnelly and Mulcahy, 2008; Lang and Lundholm 2000). However, this previous literature examined this relation indirectly; they examined the channel through which CG can affect information asymmetry. Fan (2013), for example, mentioned some channels through which CG can affect asymmetric information; CG can reduce insider trading and, therefore, reduce information asymmetry. CG can also improve information disclosure which in turn will help

in solving agency problems (Chung et al., 2010; Cohen, et al., 2004; Leuz et al., 2003).

Most of the literature focused more on disclosure as one channel; for example, they focused on the CG's effect on disclosure and on the disclosure effect on information asymmetry (Kanagaretnam et al., 2007). Good CG improves disclosure; this high disclosure will in turn mitigate the problem of asymmetric information that arises between outsiders and insiders and that arises between informed and uninformed investors (Chung et al, 2010; Diamond and Verrecchia, 1991). According to agency theory, good CG mechanisms strengthen internal monitoring, reduce the opportunistic behaviour, and encourage management to disclose more information; this will help to lower the information asymmetry problem (e.g. Ho and Wong, 2001; Welker, 1995).

Examples of previous literature that considered CG effect on disclosure are Chen and Jaggi (2000), Craswell and Taylor (1992), Ernstberger and Grüning (2013), Forker (1992), Gao and Kling (2012), and Ho and Wong (2001). On the other hand, another stream of research focused on disclosure effect on information asymmetry (Armstrong et al., 2011; Chen et al., 2007; Cheng et al., 2006; Gajewski and Quéré, 2013; Kim and Verrecchia 1994; Leuz and Verrecchia, 2000; Petersen, and Plenborg, 2006; Welker, 1995; Zhang and Ding, 2006). These previous studies indicated an influence of disclosure on information asymmetry. Zhang and Ding (2006) found that firm disclosure reduces the severity of information asymmetries. In the same vein, Chen et al. (2007) showed

that the ranking of Transparency and Disclosure (T&D) is negatively related to information asymmetry. Recently, the study by Geyt et al. (2014) focused on examining the role of corporate communication in lowering information asymmetry; they studied the influence of disclosure on information asymmetry by investigating this relation for the different communication channels and their result proves that these different channels of communications have different influences on information asymmetry. Therefore, the association between disclosure and information asymmetry can be justified in terms of reducing private information search motivations (Brown and Hillegeist, 2007), and/or reducing the degree of informed trading (Ertimur, 2007).

To sum up, the previous relevant studies found that CG affects the level of disclosure, and also a series of papers revealed that disclosure is negatively associated with information asymmetry. Thus, the current study, instead of examining the channel through which CG affects information asymmetry as in prior research, it adds to the previous studies by studying directly CG influence on information asymmetry. There is limited literature that investigated the direct effect of CG on information asymmetry; the current study, therefore, complements this previous research by providing a new empirical support of CG influence on information asymmetry. Kanagaretnam, et al. (2007) are considered the first to examine CG influence on information asymmetry; they studied the effect of CG variables in reducing information asymmetry and considered the effect of directors' and officers' ownership. Furthermore, they considered board composition and independence and board practice; their results indicated that

these previous CG variables negatively affect information asymmetry. Their result implies that with good CG, information asymmetry will be mitigated. In the same vein, Cormier et al. (2010) studied both disclosure and CG variables' influences on information asymmetry; in their analysis, they considered the importance of board characteristics on reducing information asymmetry. Their results suggest that governance disclosure complements CG attributes in reducing information asymmetry. Anglin et al. (2011) examined the relationship between CG and information asymmetry for real estate investment trusts; they focused on internal CG mechanisms, e.g. the characteristics and activities of the board, compensation and characteristics of the audit committee. Once more, the result confirmed that good CG results in mitigating information asymmetry.

Moreover, Elbadry et al. (2013) examined CG influence on information asymmetry in UK listed companies for the period from 2003 to 2006. Their empirical analysis indicated that with good CG mechanisms, the problem of information asymmetry will be mitigated; it indicated that both compensation and board independence had an influence in lowering information asymmetry. However, on the other hand, it also indicated that the increase in both block ownership and insider ownership leads to more information asymmetry. Also, the study of Lei et al. (2013) considered both types of agency problems that companies may have suffered from and examined how different CG mechanisms could have an impact on information asymmetry. Based on CG measure that represents both types of agency problems, their empirical results indicated that, in a sample of Chinese firms, CG mechanisms aiming at reducing types I and type II

agency problem reduced the information asymmetry. In addition, the result also indicated that there are differences in firms that are more subject to type I agency cost and firms that are more subject to type II agency cost.

These previous studies tend to focus on internal CG variables; however, other studies considered other external CG variables. Among them is the study of Armstrong et al. (2012) which focused on external CG variables; they studied the association between changes in antitakeover and information environments. In doing that, they studied state antitakeover laws' influence on information asymmetry, and the results pointed out that both the asymmetric information between investors and that between insiders and outsiders had decreased subsequent to the changes of the antitakeover laws. Furthermore, they considered different channels through which antitakeover law affects information asymmetry; their results indicated that asymmetric information declined due to the decrease in the collection of private information and also due to the increase in informational content of financial statement. In the same vein, the study by Jain et al. (2008) considered the 2002 Sarbanes-Oxley Act and regulatory response influence on information asymmetry, and they revealed an influence of financial reports quality in lowering bid-ask spread.

While the above mentioned studies focused on individuals CG variables, others focused on overall CG index; the study of Chung et al. (2010) relied on Institutional Shareholder Services (ISS) data to construct CG index comprised of six sub-indices that mainly focused on transparency. Their results indicated a

significant negative effect of CG on information asymmetry when using different measures including, for instance, spread and probability of informed trading (PIN). Fan (2013) used information content of stock trade to measure information asymmetry and he studied firm level CG effect on information asymmetry; he used a sample of 100 companies in US and relied on Risk Metrics Global Governance database to collect firm level governance data. His empirical results showed that CG quality is negatively associated with information content of stock trade; this result indicated that internal CG mechanism is the main factor that reduces information asymmetry. In another context, Tang and Wang (2011) considered the relationship between overall CG rating and liquidity in the Chinese firms for years from 1999 to 2004. Using publicly available information, they constructed their CG index; generally speaking, what their analysis revealed supports a negative effect of CG on information asymmetry. Prommin et al. (2014) also reached similar results in the Thailand context when testing this relationship on large firms that covered years from 2006 to 2009. Moreover, using Credit Lyonnais Securities Asia (CSLA) rating as a rating for overall CG, Charoenwong et al. (2011) also investigated, in a sample of companies in Singapore, the association between overall CG rating and information asymmetry focusing on adverse selection element of the spread. Using both overall CG rating and CG sub-indices, their analysis supported a negative effect of the overall CG level on the adverse selection factor; however, the result indicates that only the transparency index was found to have a negative effect of adverse selection element.

Therefore, based on previous studies, there is a limited prior research that directly tested CG influence on information asymmetry in general and in UK in particular. Moreover, limited literature exists that considered the effect of overall CG quality and asymmetric information. Therefore, this current study extends the literature on CG and information asymmetry by examining this direct relation in UK before and during the financial crisis. It is expected that good governed firms can ensure more efficient operations of corporate boards and better protection of minority shareholders' interests, and maintain more appropriate disclosure and better transparency. Therefore, the major hypothesis of this study is posited as follows:

***H1:** There is a significant negative association between CG score and information asymmetry.*

The above mentioned hypothesis is tested for both the period before and the period during the crisis. In addition, it is tested for CG sub-indices to examine the differences between CG sub-indices in reducing information asymmetry in both the period before and the period during the crisis.

5.2.3 Ownership Structure and Information Asymmetry

Corporate ownership structure is considered one source of information asymmetry (Choi et al., 2010); previous literature that studied ownership structure influence on information asymmetry gave more attention to three types of ownership structure: insider ownership (Heflin and Shaw, 2000), institutional ownership (Poon et al., 2013; Wang and Zang, 2009), and block ownership (Jiang et al., 2011). These three shareholders categories are argued to have superior information (Rubin, 2007).

Institutional investors get more information advantage because of their roles in monitoring; therefore, this may result in the rise of the adverse selection cost and information asymmetry (Wang and Zhang, 2009). With regard to insider ownership, they have direct contact and may acquire private information; this may also increase the risk of insider trading and this may increase bid-ask spread (Heflin and Shaw, 2000). Block ownership has two different effects; the first effect is that block ownership is more likely to monitor management – the efficient monitoring hypothesis – which reduces the level of agency problems and information asymmetry (Choi et al., 2010; Hope et al., 2009). In addition, a strong relationship may exist between block shareholders and firms; this strong relationship may in turn lead to an improvement in information environment and, consequently, increase information transparency which reduces information asymmetry (Hope et al., 2009). The second effect, block shareholders, may take advantage of their position to optimise their benefits rather than maximise shareholder value. Therefore they might conceal some of the information in order to protect their interests; this in turn worsens information problems, and increase information asymmetry (Choi et al., 2010).

Therefore, block shareholders can provide good monitoring, but at the same time they could create information asymmetry problems; block shareholders have a better chance to reach private information through their monitoring; therefore, they have an advantage over other non-block shareholders in respect of both accessing more accurate information and lowering cost of the acquisition of this information (Brockman and Yan, 2009). Therefore, this may cause problems of

poor disclosure and also a lack of transparency which in turn increase information asymmetry (Attig et al., 2006; Sakawa et al., 2014; Tang and Wang, 2011).

By reviewing the previous literature that studied ownership structure influence on information asymmetry, it is noticed that there were contradicting results in this previous research between block ownership and information asymmetry. Using a sample of listed firms in Canada, Attig et al. (2006) addressed a positive association between ownership and bid-ask spread. In the same vein, Jiang et al. (2011) studied the same relationship in New Zealand, and their results in general confirmed that an increase in ownership concentration is associated with higher bid-ask spread around reports release dates. In UK listed firms, Elbadry et al. (2013) examined this relationship and their results support the previously mentioned positive association between ownership concentration and information asymmetry when using different measures including spread, volatility and volume. In addition, Jacoby and Zheng (2010), in a sample of US firms, indicated also a positive relationship between block ownership and asymmetry of information; their sample included firms from NASDAQ, NYSE and AMEX; their result indicated that block shareholders, by having informational advantage, will have an effect on the adverse selection risk and raise the bid-ask spreads. Moreover, Brockman and Yan (2009) empirically examined block ownership effect on the information environment of the firm, and they found a positive association between block shareholdings and both idiosyncratic volatility and PIN; therefore this result indicated that block ownership increase information asymmetry. Byun et al. (2011) studied ownership concentration effect on

information asymmetry; focusing on a Korean context, they showed a positive statistical relationship between block ownership and information asymmetry.

While the above previous studies suggested a positive relationship which means that an increase in ownership concentration would lead to more information asymmetry, other studies found non-significant relationship such as Kini and Mian (1995) who found that ownership concentration had non-significant influence on information asymmetry of a sample US firms. Choi et al. (2010) also found non-significant relationship where block ownership is found to be statistically non-significant. They got the same results using other different measures of ownership concentration when using the proportion of shares owned by shareholders with no less than 1% of equity ownership, or when they considered block ownership as the proportion of shares that are owned by the top ten shareholders.

In this paper, based on the majority of previous studies that found that block ownership increases information asymmetry, such as Brockman and Yan (2009), Jacoby and Zheng (2010), and Elbadry et al. (2013) who studied this relationship in UK and found that the higher the level of ownership concentration the higher the information asymmetry problem, the study hypothesises that block ownership would be positively associated with information asymmetry. This expected positive relationship can be justified in that block shareholders are thought to have more private information; furthermore, with the increase in block ownership, there may also be a reduction in public information. Therefore, as a result of an increase

in block ownership, information asymmetry is expected to increase; therefore, the current hypothesis is examined:

H2: *There is a significant positive relationship between block ownership and information asymmetry.*

Due to the strong heterogeneity between block shareholders, it is essential to consider dissimilarity between block shareholders as they have diverse monitoring power and ability; furthermore, they may have differences in their motivation and information sharing (Del Guercio and Hawkins, 1999; Jiang et al., 2011). Without the separation of different types of block shareholders, it would be hard to find out which category of these block shareholders causes the observed association (Jiang et al., 2011; Rubin, 2007). Previous research found, for example, that insiders have an information advantage over other outside investors, which can be shown through trading activities (Piotroski and Roulstone 2004). Brockman and Yan (2009) found that the relationship is positive and significant between both outside and inside block ownership and information asymmetry, but it is insignificant for employee block shareholders. Jiang et al. (2011), when categorising block ownership into various categories, found that more information asymmetry is associated with ownership structure that is controlled by financial institutions and management. Rubin (2007) also proved a significant positive association between institutional block ownership and bid-ask spread.

Therefore, block ownership in the current study is divided into three different categories: institutional investors, insider investors, and other block ownership; then the influence of each category of block ownership on information asymmetry

is examined. Relying on the prior studies, it is expected that both insider block shareholders and institutional block shareholders have access to private information and this would increase information asymmetry. Therefore, taking the heterogeneity between these block shareholders into consideration offers new evidence and clear understanding of the impact of block shareholdings on information asymmetry.

5.2.4 Interaction effects of block ownership with corporate governance on information asymmetry

Based on the hypothesis stated in the previous section that block ownership and information asymmetry is positively associated, the current paper also examines the role of an important information distribution mechanism in lessening the negative effect of block ownership. This study examines whether internal CG mechanisms help lessen the negative effects of block ownership. Although block shareholders can take benefit from their position, and increase the information asymmetry problem (Heflin and Shaw, 2000), strong CG mechanisms in such situations would help to reduce block shareholders motivation to hold back relevant information to other shareholders (Gisbert and Navallas, 2013). Therefore, good CG would help to reduce the negative effect of block ownership (Brockman and Chung, 2003); this opportunistic behaviour should be reduced when CG becomes more effective (Hou et al., 2012). Therefore, it is important when examining the relationship between block ownership and information asymmetry to consider the interaction between block ownership and CG.

Having block shareholders may result in reducing public information and also increasing private information; therefore, it is argued that if good CG facilitates information sharing, it is expected that the perceived risk will be reduced. CG aims to protect shareholders from agency and information asymmetry problems characterising the modern corporations; providing enough information about company for the market will facilitate the achievement of that purpose. Thus, it is argued that CG is effective in improving disclosure and transparency and this, in turn, reduces the information asymmetry problem (Fama and Jensen, 1983; Lama, 2012). The presence of good CG means an increase in monitoring which consequently facilitates information sharing to investors; this reduces the private benefit of block shareholdings which, in turn, reduces the information asymmetry (Love, 2010).

Consequently, investigating the relationship between block ownership and information asymmetry should consider the interaction between block ownership and CG (Prommin et al., 2014). This will in turn lead to more understanding of the relationship between block ownership, CG, and information asymmetry variables. There is limited research that examined the interactive effect of different mechanisms in alleviating the negative effect of block ownership; to the best of our knowledge, only limited literature has examined this issue. Jiang et al. (2011) examined whether voluntary disclosure attenuates information asymmetry of block ownership of a sample of listed companies in New Zealand in the period from 2001 to 2005; their result indicated that this interactive variable of block ownership and disclosure had a negative relationship with information asymmetry

and it is significant for firms with management controlled ownership structure. In the same vein, Byun et al. (2011) examined the role of a number of other information dissemination mechanisms in mitigating information asymmetry of ownership concentration. They examined the role of four mechanisms: institutional ownership, rating agencies, analyst following, and the quality of CG. Their result indicated that only analyst following had an effect in reducing information asymmetry related to block ownership. Therefore, it is argued that analyst supplies more information and this in turn decreases information asymmetry. Another more recent study, Gjerde et al., (2013) also examined the interaction between ownership by block insider and the level of voluntary disclosure in reducing bid-ask spread; furthermore, they examined the interaction effect between block insider and board independence, the interaction effect of block insiders and monitoring by outside institutions in reducing bid-ask spread. Their results indicated that these three variables moderate the relationship between block ownership and bid-ask spread.

These previous studies focused on countries with poor law enforcement and also low level of shareholder protection; in addition, these studies examined this relationship in a normal period. Therefore, it can be argued that no previous studies considered the relationship between CG and information asymmetry in the presence of ownership concentration during crisis period. Therefore, the current paper adds to these previous studies by providing new evidence on the role of internal CG as information dissemination mechanisms in reducing information asymmetry in UK that is characterised by high investor protection; the current

study examines this interactive role in a crisis period contrary to the other studies that focused on normal or stable periods. Thus, in such country where there is a high protection of shareholders, CG is expected to play a major role in reducing information asymmetry. It is expected that in a country like UK, where there is high legal mechanisms, CG should play a major role in reducing block shareholders incentive to hide significant information and, consequently, reduce information asymmetry.

Building on these previous findings, in the current paper, CG is considered to have an important task to monitor management and increase disclosure of information to investors. Hence, CG plays a major task in affecting the firm's information environment. If CG plays this important role to improve transparency, this would result in reducing information asymmetry. Hence, the current hypothesis is tested:

H3: There is a significant negative relationship between the interaction variable of CG and block ownership and information asymmetry.

To test this hypothesis, an interaction variable of CG and block ownership is built. The idea is to see whether the relationship between block ownership and information asymmetry is influenced by CG variable. A negative relationship between the interactive variable and information asymmetry is expected. In addition, the current paper examines the interaction between different categories of block ownership and CG and its effect on information asymmetry; such relationship is unexplored in UK.

5.3 Research Methods

5.3.1 Sample Selection and Data Sources

This paper used a sample of FTSE 350 UK listed company; the sample included 139 companies after excluding the financial institutions and utility companies. The total sample is 695 of firm-year observations demonstrating 139 companies for the period from 2005-2009. This sample period is divided into two main periods: the pre-crisis period from 2005 to 2007 and the crisis period from 2008 to 2009 (for more details about sample selection see chapter 3, section 3.5.1). Data for CG variables and block ownership was collected from the annual reports of sample companies while the data of bid-ask spread and control variables was collected from DataStream.

5.3.2 Variables Measurements

5.3.2.1 Measurement of Information Asymmetry

There are some proxies that have been used for information asymmetry in the literature. The most common ones include: bid-ask spreads (Cheng et al, 2011; Kangaretnam et al., 2007), PIN (Armstrong et al., 2011; Ascioğlu et al., 2012; Brockman and Yan, 2009; Byun, et al., 2011; Jin and Myers, 2006), stock return volatility (Harris and Raviv, 1993), trading volume (Elbadry et al., 2013), and analysts' forecast dispersion (Ajinkya et al., 1991; Diether et al., 2002).

Following prior studies, this paper used one of the market microstructure based measures, the bid-ask spread (*SPREAD*), which is better than other measures; this measure had been used in previous studies (Brennan and Subrahmanyam, 1996;

Chung et al., 2010; Clarke and Shastri, 2000; Elbadry et al., 2013). Bid-ask spread had been used extensively; with higher level of information asymmetry, spread will be wider in order to face market-maker losses incurred from trading with informed investors (Fu et al., 2012). Bid-ask spread is common and at the same time is an appropriate measure because it provides a more accurate measure of information asymmetry outcomes (Armstrong et al., 2011; Leuz and Verrecchia, 2000). Moreover, although other proxies are closely related to information asymmetry, such as trading volume and price volatility, there are many factors that affect these measures other than information asymmetry (Yoon et al., 2011).

Bid-ask spread (*SPREAD*) is calculated in percentage as average of daily bid-ask spread (the difference between ask and bid prices divided by the average of these two prices) of each firm in each year (Choi et al., 2010). Daily bid and ask prices were collected for UK FTSE 350 from DataStream.

5.3.2.2 Measurement of Block Ownership

As an explanatory variable, block ownership (*BLOCK*) in the current paper is measured by the total percentage of shares that is owned by shareholders who own no less than three percent of equity ownership. This block ownership is divided into three types of block ownership; the first is block ownership by institutional investors (*INSTITUTIONAL*) which includes banks, insurance companies, mutual fund, pension funds...etc. The second is the block ownership by insider (*INSIDER*) which includes directors, and managers. The third includes the other block ownership (*OTHER*).

5.3.2.3 Measurement of Corporate Governance

CG index has been developed as mentioned before in chapter two. Both the CG index and sub-indices are considered in this paper to assess their effect on information asymmetry in both the periods before and during the financial crisis. There are a number of control variables that also included in the empirical analyses. These control variables are included because they have been proven to affect bid-ask spread in previous literature (see for example Choi et al. (2010); Heflin and Shaw (2000); Jacoby and Zheng (2010) and others). Firm size is included; a negative relationship is expected between firm size and spread (Choi et al., 2010); (SIZE) is measured by the natural log of total assets. Stock price (PRICE) is also included; a negative relationship is expected between price and bid-ask spread (Welker, 1995). TURNOVER is also included as control variable; turnover represents the degree of the trading activities and is measured as the number of shares traded over the year divided by the number of shares outstanding. The empirical analysis finds that bid-ask spread relates negatively to turnover (Choi et al., 2010, and Fu et al., 2012).

5.3.3 Empirical Models

Since the current data contains both cross-sectional and time-series observations, a panel data methodology is applied. Panel regression is employed in this study, using the fixed or the random regression, which is based on the Hausman test (Wooldridge, 2002) as mentioned before in chapter three and chapter four. Although the random-effect model estimation is more efficient (Greene, 2002),

the fixed effect should be used if the null hypothesis is rejected as it provides consistent estimator.

To address the endogeneity problem, as mentioned before in chapter 3 and 4, the lagged explanatory variable is used in the analysis; this method is considered a partial method of solving the simultaneity problem. Therefore, the lagged value of both CG and block ownership is used as explanatory variables. In the current paper, five models are tested. The first model tests the relationship between CG and information asymmetry, and is shown as model (1) below.

$$\text{SPREAD}_{it} = \alpha_i + \beta_1 \text{CG_SCORE}_{it} + \beta_2 \text{SIZE}_{it} + \beta_3 \text{PRICE}_{it} + \beta_4 \text{TURN}_{it} + u_{it} \dots\dots\dots(1)$$

This model represents the main focus of this paper that considers CG and other control variables such as price, size and turnover ratio that may affect bid-ask spread. Where SPREAD is measured by the average daily bid-ask spread of the firm over the year, CG_SCORE is the corporate governance score, PRICE is the annual stock price, and TURN is turnover rate that represents the level of trading activity and it is measured by the total number of shares traded over the year divided by the number of shares outstanding.

The second model tests the relationship between CG sub-indices and bid-ask spread, and is shown as model (2) below.

$$\text{SPREAD}_{it} = \alpha_i + \beta_1 \text{BCII}_{it} + \beta_2 \text{BPPI}_{it} + \beta_3 \text{AAI}_{it} + \beta_4 \text{SIZE}_{it} + \beta_5 \text{PRICE}_{it} + \beta_6 \text{TURN}_{it} + u_{it} \dots\dots\dots(2)$$

Where BCII is the Board Composition and Independence Index, BPPI is the Board Practice and Process Index, and AAI is the Accountability and Audit Index, and other variables as defined above.

In model (3), the relationship between block ownership and information asymmetry is tested, block ownership is added to the previous two models, model (1) and (2), as shown below in model (3) and (4)

$$\text{SPREAD}_{it} = \alpha_i + \beta_1 \text{CG_SCORE}_{it} + \beta_2 \text{BLOCK}_{it} + \beta_3 \text{SIZE}_{it} + \beta_4 \text{PRICE}_{it} + \beta_5 \text{TURN}_{it} + u_{it} \dots\dots\dots(3)$$

Where BLOCK is block ownership calculated as the percentage of shares that is owned by shareholders with no less than three percent of equity ownership.

$$\text{SPREAD}_{it} = \alpha_i + \beta_1 \text{BCII}_{it} + \beta_2 \text{BPPI}_{it} + \beta_3 \text{AAI}_{it} + \beta_4 \text{BLOCK}_{it} + \beta_5 \text{SIZE}_{it} + \beta_6 \text{PRICE}_{it} + \beta_7 \text{TURN}_{it} + u_{it} \dots\dots\dots(4)$$

Finally, model five presents the interaction model that tests CG role in mitigates the pessimistic effect of block ownership; therefore, the interaction variable of CG and block ownership is included in model (3) as shown below in model (5).

$$\text{SPREAD}_{it} = \alpha_i + \beta_1 \text{CG_SCORE}_{it} + \beta_2 \text{BLOCK}_{it} + \beta_3 \text{CG_SCORE}_{it} * \text{BLOCK}_{it} + \beta_4 \text{SIZE}_{it} + \beta_5 \text{PRICE}_{it} + \beta_6 \text{TURN}_{it} + u_{it} \dots\dots(5)$$

Where CG_SCORE * BLOCK is defined as the interaction between CG and block ownership. In addition, the effect of the interaction between CG and different types of block ownership on bid-ask spread is also examined.

5.4 Empirical Results and Analysis

5.4.1 Descriptive Statistics

Table (5.1) and (5.2) report the descriptive statistics and correlation matrix respectively for the variables. Table 5.1 presents the descriptive statistics; in the pre-crisis period, the mean bid-ask spread is (0.4727) while in the crisis period, the mean is (0.24013) which indicates a decrease in the bid-ask spread from the pre-crisis to the crisis period. The mean of CG-Score has increased from (0.8140) in the pre-crisis period to (0.8391) in the crisis period; in addition, all the CG-Sub indices have also increased. Block ownership with at least 3% ownership had a mean of 33.81% in the pre-crisis period which increased to 38.23% in the crisis period. The mean of the different types of block ownership has increased for all the three types from the pre-crisis to the crisis period; the institutional block ownership has increased from 25.60% to 29.13%, and the insider block ownership increased from 1.940% to 1.942% and, finally, the other block ownership has increased from 6.26% to 7.16%. The mean turnover is (2.25) in the pre-crisis period and became (2.18) in the crisis period. Moreover, the mean of both size and price has decreased in the crisis period to (21.55) and (6.47) respectively.

Table (5.2) reports the correlation analysis between independent variables. Within this Pearson correlation matrix, there appears no significant high correlation between the independent variables. Therefore, there is no multi-collinearity problem to be considered.

[Table 5.1 and 5.2 around here]

5.4.2 Regression Results of the Relationship between CG and Information Asymmetry

Table (5.3) model (1) represents the results of the effect of CG score on bid-ask spread; it reveals a negative relationship between CG score and bid-ask spread in the pre-crisis period and it is a significant relationship at 5% significant level and with a higher R2 value of 0.6878 . This result supports the first hypothesis by providing the evidence of a negative relationship between CG and information asymmetry. This result also supports the previous results of Fan (2013) and Lei et al. (2013). On the other hand, model (2) reports the regression results during crisis period, and it indicates a negative but not significant relationship between CG Score and bid-ask spread (The R2 in model 2 turned to be of lower value than in model 1 (0.6650)). Therefore, the observed significant negative association between CG and information asymmetry is consistent with prior literature (Charoenwong et al., 2011; Chung et al., 2010; Fan, 2013; Lei et al., 2013). These results indicated that internal CG has a negative effect on bid-ask spread; with the increase in CG quality, there will be better information environment and hence lower information asymmetry. While the observed non-significant influence of CG on bid-ask spread during crisis period is consistent with the results of Byun et al. (2011) where they found that there is non-significant negative relationship between CG Index and information asymmetry in a sample of Korean firms. Thus, in general the current findings imply that CG is important in providing sufficient information to investors that enables them to take the right investment decision in the pre-crisis period.

Considering the control variables, the results indicate that price and size have a significant negative relationship with bid-ask spread in both periods. However, TURN has a significant negative relationship with spread only in the period before the crisis, and it turned to be non-significant during crisis period. This result supports the result of previous studies; Choi et al. (2010) reported the same relationship between SIZE, TURN and bid-ask spread. Also Lei et al. (2013), in their results, revealed that PRICE, SIZE has a negative association with spread.

[Table 5.3 around here]

In Table (5.4), the regression is expanding by testing the association between CG-sub indices and bid-ask spread. The results showed a significantly negative relationship between BPPI, AAI, and bid-ask spread which means that both board practice, accountability and audit sub-indices have a major role in mitigating information asymmetry in the period before the crisis (with R² value of 0.6895). Contrarily to the expectations, BCII has non-significant effect on information asymmetry. This result is in line with previous results of Kanagaretnam et al. (2007), who examined the influence of some CG mechanisms on information asymmetry and found, between other things, that board activity is negatively related with bid-ask spread. In addition, the current results support the findings of Elbadry et al. (2013) who found a negative association between board activity and information asymmetry in the context of UK in the period from 2003 to 2006, which is in the pre-crisis period. This result provides evidence that better board quality has an effect in mitigating information asymmetry, at least in the period prior to the crisis.

Model 2 in Table (5.4) shows that during crisis period only AAI has a negative relationship with bid-ask spread; this means that both BCII and BPPI have no effect on information asymmetry during this period (R² value in model 2 therefore is lower with a value of 0.6658). This finding supports the results of Cormier et al. (2010) that showed that formal monitoring mechanisms, such as audit committee characteristics including audit committee size, reduce information asymmetry. Therefore, based on the results of both tables (5.3) and (5.4), it is found that there is a significant difference in the effect of CG and CG sub-indices on information asymmetry from the pre-crisis to during crisis period where most of the effect is found in the pre-crisis period.

[Table 5.4 around here]

5.4.3 Regression Results of the Relationship between Block Ownership and Information Asymmetry

Tables (5.5) and (5.6) report the results of the regression between block ownership and bid-ask spread. Table (5.5) reports the result of this relationship in both periods; the regression results showed a negative relationship between block ownership and bid-ask spread in the period before the crisis but it is a non-significant relationship. A non-significant negative effect of block ownership on bid-ask spread means that block shareholders do not play the active role expected from them in doing effective monitoring of management and, consequently, mitigating the asymmetric information (Hope et al., 2009). However, during the crisis period, it turned to be a positive and significant relationship, which provides support for the second hypothesis. This result provides support to the stream of prior literature that underlined an increase in information asymmetry due to the

increase of ownership concentration (Heflin and Shaw, 2000; Jacoby and Zheng, 2010). This result indicates that block ownership during crisis period may take advantage of their position and worsen information problem and, consequently, escalate information asymmetry (Heflin and Shaw, 2000). Block shareholders may behave in a way that protects their wealth; therefore, they may extort firm resources for their own benefits. This means that during the crisis period block shareholders choose to expropriate and this, in turn, affects information asymmetry.

Table (5.6) reports the results of the previous relationship by considering various categories of block ownership and its effect on bid-ask spread; Model (1) showed that in the pre-crisis period, only insider block ownership has a significant negative relationship with bid-ask spread and at the same time it showed insignificant negative association between block shareholdings by institutional investors, block shareholdings by other shareholders, and bid-ask spread (the value of R² of model 1 is 0.7087 which is higher than R² in model 2). This negative relationship between insider block ownership and spread is inconsistent with previous studies of Ginglinger and Hamon (2007), Gjerde et al. (2013), Heflin and Shaw (2000), Jiang et al. (2011) who indicated that an increase in insider block ownership would result in an increase in bid-ask spread. According to Jensen and Meckling (1976), insiders, who have private information, may use it in an opportunistic manner; they may behave in a way that benefits them but might not necessarily benefit other shareholders. However, this unexpected result can explain why an increase in insider ownership may result in the alliance of the

interests of both owners and management (Morck et al., 1988). Therefore, where insiders are also shareholders, their incentive to monitor is an increasing function of their stake and results in a decrease in information asymmetry (Levesque et al., 2010). Thus, it also supports the results of McConnell and Servaes (1990) that showed that insiders would work to mitigate information asymmetry as their ownership increase. Furthermore, it is expected that in a developed country like UK, there are more legal restrictions on the insiders' ability to gain private control benefit and this in turn reduces their motivation to hold back information from shareholders (Leuz et al., 2003). In addition, they are more inhibited to trade on such information (Huang and Xu, 2009).

While during the crisis period, the relationship between different categories of block ownership and bid-ask turned to be positive relationships, but it is only significant for both institutional block ownership and other block ownership. This result reveals that there is no evidence of an influence of insider block ownership on bid-ask spread during this period. The above-mentioned positive relationship between institutional block ownership adds more support to prior literature that showed block ownership by institutional investors to have a significant positive association with information asymmetry (Jiang et al., 2011, Brockman and Yan, 2009 and Rubin, 2007). Therefore, during the crisis period, these institutional and other block shareholders are perceived by market maker as having more private information.

[Table 5.5 and 5.6 around here]

5.4.4 Regression Results of the Interaction Effect of Block Ownership with CG

Having noted that during the crisis period, block ownership had a positive relationship with bid-ask spread, therefore, CG is considered if it could mitigate such a relationship. In so doing, the analysis is extended by adding the interaction variable of CG with block ownership (CG_SCORE*BLOCK). If CG has an effect, then it is expected that this positive association between block ownership and information asymmetry to be lessened due to this variable. Table (5.7) represents the results of the interactive effect; the result indicates a non-significant negative association between the interactive variable and bid-ask spread, it also shows that the value of R² has increased to 0.6886 than the value of R² in model 2 in table 5.5. The results mean that CG did not play a role in attenuating the positive relationship that had been mentioned before. This result is consistent with the result of Byun et al. (2011) who found that internal CG did not play a role in mitigating this effect of block ownership.

Also, having noted in table (5.6) that both institutional block and other block ownership had a positive associated with bid-ask spread, the previous regression is extended to include the interaction terms of CG with INSTITUTIONAL (CG_SCORE*INSTIUTIONAL) and CG with OTHER (CG*OTHER). Table (5.8) reports the results of this regression; an insignificant negative relationship between CG_SCORE*INSITUTIONAL and bid-ask spread is found but, on the other hand, a significant negative relationship between CG*OTHER and bid-ask spread is reported (the value of R² has increased to 0.6924 which is higher than the R² in model 2 table 5.6). Both the results in table (5.7) and (5.8) indicate that

CG did not play an active role during crisis period in mitigating the positive relationship between block ownership and bid-ask spread; it only provides weak evidence on its role in mitigating the asymmetry caused by other block ownership.

[Table 5.7 and 5.8 around here]

5.4.5 Additional Test (The influence of Different Categories of Institutional Block Shareholders on Information Asymmetry)

An additional test is done to examine the relationship between various categories of institutional block ownership on information asymmetry; this additional test would give more insight about the role played by the two different categories of institutional block ownership in affecting bid-ask spread in both period. Therefore, institutional block ownership is classified into two types as mentioned before in chapter 3; BLOCK 1 and BLOCK 2.

The result indicates consistency with the original result that there is a non-significant negative association between each category of institutional block ownership and bid-ask spread in the period before the financial crisis (Table 5.9, Model 1). However, during the crisis period, it gives a slightly different result; it indicates that both types of institutional block ownership have positive relationship with bid-ask spread, but only BLOCK 2 has a significant relationship (Table 5.9, Model 2). This result means that the influence of institutional block ownership on bid-ask spread came mostly from BLOCK2. This indicates that pension fund and insurance company (BLOCK 1) have a weaker impact on increasing spread than do other institutional block shareholders. Therefore, it can be argued that other institutional block shareholders (BLOCK2) is thought to have

more information advantage than BLOCK1 who may concentrate more on monitoring of management.

[Table 5.9 around here]

The following table summarises the results of the empirical regressions compared with the previous research hypotheses; it summarises the main research hypotheses and presents the main findings of the current paper.

Table (5.10) Research Hypotheses and Findings

Variable	Hypothesis	Expected Sign	Pre-Crisis	During-Crisis
CG_SCORE	Hypothesis 1: There is a significant negative association between CG score and information asymmetry	Negative relationship with bid-ask spread	Significant negative relationship	Non-significant negative relationship
Block ownership	Hypothesis 2: There is a significant positive relationship between block ownership and information asymmetry.	Positive relationship with bid-ask spread	Non-significant negative relationship	Significant positive relationship
Interaction between Block ownership and CG	Hypothesis 3: There is a significant negative relationship between the interaction variable of (CG and block ownership) and information asymmetry.	Negative relationship with bid-ask spread	Not tested due to the insignificant relationship between block ownership and bid-ask spread.	Non-significant Negative relationship

Based on the research hypothesis and findings, it can be argued that H1 is accepted only in the pre-crisis period, while during the crisis period, it is rejected

which means that CG failed to have a significant impact during the crisis period in reducing information asymmetry. With respect to H2, it is accepted during the crisis period where the findings prove a significant positive relationship between block ownership and bid-ask spread; however, in the pre-crisis, no evidence is found for this relationship. Finally, for hypothesis H3 it is rejected in the crisis period where CG is found to have no influence on attenuating the positive relationship between block ownership and information asymmetry. The next section provides the robustness check of the research findings followed by summary and conclusion in the final section.

5.4.6 Robustness Checks

In this section, the strength of the results is checked; by further investigation of the relationship between CG and information asymmetry. First, an extra variable that may be related to information asymmetry is included; leverage is added in the regression. Previous studies indicated that leverage is correlated with bid-ask spread (Anglin et al., 2011). Amihud and Mendelson (2008), for example, indicated that the higher the leverage, the more information asymmetry that will result in an increase in bid-ask spread. Again, a similar result is found, indicating that the coefficient on CG did not change and is still significant and negative in the pre-crisis period. (Table 5.11, Model1). This means that this omitted variable is unlikely to explain the results.

The second test is done by using another measure instead of the turnover ratio; a negative relationship is found between trading volumes and bid-ask spreads (Stoll,

1978); therefore, trading volume is used instead of turnover ratio. The result showed that trading volume (VOLUME) is negatively associated with bid-ask spread, Lei et al. (2013) and Roulstone (2003) found negative relationship between VOLUME and spread. Therefore, using another measure of trading activity did not change the relationship (Table 5.11, model 2).

An additional test is done by including one more extra variable – volatility – in the regression in the pre-crisis period measured by the standard deviation of daily stock return (Byun et al., 2011; Kanagaretnam et al., 2007; Lei et al., 2013). Again using an extra control variable does not change the relation between CG and spread (see table 5.11, Model 3). These robustness checks discussed above provide consistent results and increase confidence in the information asymmetry–governance relationship.

[Table 5.11 around here]

5.5 Summary and Concluding Remarks

The main purpose of this paper was to study the effect of CG on information asymmetry. Both CG index and sub-indices are employed to measure CG quality of a sample UK listed company – FTSE 350 non-financial UK listed firms – in both the pre-crisis period and during the crisis period from 2005 to 2009. This paper also aimed to examine the effect of block ownership on information asymmetry and moreover the role played by CG in alleviating the negative impact of block ownership is considered. The empirical results of this paper revealed that CG plays an active role in reducing information asymmetry only in the pre-crisis

period; a negative relationship between CG and information asymmetry is found. Therefore, consistent with prior literature, these results indicated that with the increase in CG quality, there will be better information environment and hence lower information asymmetry. Thus, in general, the current findings imply that the importance of CG in providing sufficient information to investors that enabled them to take the right investment decision in the pre-crisis period. However, based on the result that indicates insignificant relation between CG and information asymmetry during crisis, it can be argued that CG does not play the role expected from it in the crisis period. Moreover, results for sub-indices of CG provide further support for the negative governance – information asymmetry relationship; the current study also provides the evidence that internal CG mechanisms are important factors in mitigating information asymmetry; both board practice and process index and accountability and audit index are found to be important mechanisms in reducing information asymmetry in the pre-crisis period.

While during crisis, there is no observed effect of CG in mitigating this information asymmetry. In addition, accountability and audit index proves to be the only sub-index that shows an effect in reducing information asymmetry during the crisis period. This means that accountability and audit index is important in both the pre-crisis period and during the crisis period in reducing information asymmetry; it can be argued that accountability and audit index is an index that is directly related to the disclosure of information and, therefore, it has a more significant impact on reducing information asymmetry in both periods. Charoenwong et al. (2011) found that between different CG dimensions only the

transparency and disclosure dimension had a significant negative effect on adverse selection.

To sum up, it can be argued that CG does not play the role expected from it in the crisis period. More specifically, board composition and independence index is found to have no effect on reducing information asymmetry before and during crisis. This finding is not what was expected from this major CG mechanisms; it was expected from board to have a major effect on lowering information asymmetry. This is inconsistent with Levesque et al. (2010) who found that monitoring by outside directors on the board results in a decrease in information asymmetry. Moreover, Fama and Jensen (1983) underlined the importance of board of directors as the main form of the internal control mechanisms that is needed to monitor management. Therefore, this current result should have implication for regulatory bodies regarding the independence and the composition of the board which should be on top of any CG reforms because board independence should have an important effect to improve information disclosure to investors and thus helps to diminish information risk. Therefore, CG reforms should ensure high degree of board independence.

Regarding the effect of block ownership on information asymmetry, the findings indicated that block shareholders were not actively involved in monitoring management and behaved in a way that was expected from them in the pre-crisis period. A non-significant negative effect of block ownership on bid-ask spread is found. On the other hand, the findings also showed a statistical significant positive

effect of block ownership on information asymmetry during the crisis period; suggesting that block shareholders benefit from their information advantage during crisis period which in turn worsen the information asymmetry problem. This suggests that block shareholders engage more in their private benefits rather than engaging in efficient monitoring. The results also show insignificant effect of both institutional and other block ownership in reducing bid-ask spread in the period preceding the crisis. In addition, during the same period a significant negative effect of insiders block ownership on bid-ask spread was noticed. However, these results changed in the crisis period, showing a positive association between institutional block ownership and bid-ask spread and also the same positive association is found for other block ownership. However, the results in the same period revealed a non-significant effect of insider block ownership on information asymmetry. Therefore, during the crisis period these institutional and other block shareholders are perceived by as having more private information.

Regarding the responsibility of CG to attenuate the positive association between block ownership and information asymmetry, it was expected that CG will help in alleviating the negative effect of ownership concentration. However, the results of this study did not provide evidence; CG did not alleviate the negative effect of either the block ownership in total or the negative effect of both institutional and other block ownership during the crisis period. Therefore, it can be argued that CG did not do the appropriate monitoring job expected during crisis period. Therefore, block ownership may affect management to withhold information and reduce public disclosure; they may also use their private information, this in turn

increase information asymmetry problem. It was expected that firms in UK with strong shareholders rights make greater efforts to provide more disclosure to investors and this leads to reduced information asymmetry. However, this study provides the evidence that internal CG is not enough to reduce the negative impact of block ownership. Therefore, future research should consider external CG mechanisms in reducing the negative impact of ownership concentration. This result implies that understanding block ownership and problems associated with it constitutes a requirement for designing an effective mechanism for the protection of investors and at the same time for promoting market assurance.

Based on the result of the current study, it can be argued that CG did not perform the role required as it is expected; CG should play an important role when they are needed more which is during financial crisis periods; during this unstable period, CG is needed more to control agency problems and hence reduce information asymmetry; this is done through monitoring management, more disclosure, and more improvement in firm's information environment. This indicates that CG needs to be reformed, especially those CG sub-indices that cover board independence, composition, and practice which prove to have no effect in reducing bid-ask spread. Therefore, reforming CG mechanisms is a necessary step which should be taken and which may result in reinforced if needed to provide more control and hence to maximise its role in reducing agency problems. This current result indicates that these voluntary CG recommendations (comply or explain) alone cannot solve the agency problem and there should be more regulatory actions.

The results of this paper have important implications for regulators about the improvement needed for CG which will help companies prevent future financial crises. There is a need for more hard work of market regulators to promote CG reform; on this basis, regulators might choose to focus more directly on CG mechanisms that fail to have an impact on reducing information asymmetry, especially during the crisis period. The current results provide a preliminary indicator of where future regulations should be focused. This in turn should give investors more trust in the financial markets, especially that the latest financial crisis and scandals had damaged this confidence. This result also indicates for the regulators that even in a strong regulatory environment, like UK, the effectiveness of governance mechanisms should be tested regularly to assess any potential improvements that are needed (Gisbert and Navallas, 2013). Furthermore, the current result also implies that policies have to be developed in a way that encourages block shareholders, especially institutional block shareholders to engage more in monitoring management and to improve disclosure and transparency instead of engaging in private benefits.

Based on the findings of the current paper, a number of research recommendations are offered. First, as the current study covers the pre and during crisis period, it would be potentially interesting to look at the importance of governance structures in lowering information asymmetry in post-financial crisis period, especially that the financial crisis has affected the capital market. It would be interesting to recognize if the current results especially those obtained during crisis period hold over time or are specific only for the crisis period. Therefore,

other research that is based on the analysis of a longer period is important to highlight the effect of the improvement in CG following the crisis-period in mitigating information asymmetry. Second, it would be interesting if future research extended the current research and examined the interaction between certain aspects of CG and block ownership in curbing information asymmetry such as the interaction between independent directors and block shareholdings in affecting information asymmetry, and at the same time using alternative proxies for information asymmetry. Third, it will be of great interest if future research could take into consideration the role of legal and regulatory regimes in reducing information asymmetry during the period of financial crisis. La Porta et al. (1998) revealed the importance of the external role played by the regulatory systems in protecting shareholders. Considering this issue will intensify our understanding of the effect of external mechanisms in solving agency problems during crisis periods. So it is important to study the role of this mechanism during the crisis in reducing information asymmetry and also the interaction between these mechanisms and internal CG in mitigating information asymmetry is an appealing topic to be considered in future research.

Tables

Table (5.1): Descriptive Statistics

This table provides descriptive statistics on the overall sample for each year from 2005 to 2009 and also for the pre-crisis and during-crisis periods for the dependent, independent and control variables. SPREAD is average of daily bid-ask spread; CG_SCORE is the governance score; BCII is the Score of board composition and independence index; BPPI is the score of board process and practice index; AAI is the score of accountability and audit index; BLOCK is the percentage of shares held by shareholders with no less than three percent of equity ownership and INSTITUTIONAL is the percentage of block ownership by institutional investors, INSIDER is the percentage of block ownership by insiders and OTHER is the percentage of block ownership by others; SIZE is Natural log of total assets; PRICE is measured by the log of annual stock price; TURN is the turnover ratio in a year (the number of shares traded over the year, divided by the number of shares outstanding).

Variables	Mean (Median) (Std. Dev.) (2005)	Mean (Median) (Std. Dev.) (2006)	Mean (Median) (Std. Dev.) (2007)	Mean (Median) (Std. Dev.) (2008)	Mean (Median) (Std. Dev.) (2009)	Mean (Median) (Std. Dev.) (2005 to 2007)	Mean (Median) (Std. Dev.) (2008 to 2009)
SPREAD	.7278 (.4049) (.7867)	.4555 (.3047) (.4250)	.2347 (.1833) (.1661)	.2229 (.1932) (.1355)	.2573 (.2269) (.1715)	.4727 (.2802) (.5614)	.24013 (.2006) (.1552)
CG_SCORE	0.7999 (0.815) (.099)	0.8086 (0.821) (.099)	0.8228 (0.833) (.092)	0.8345 (0.85) (.088)	0.8436 (0.863) (.087)	0.8140 (0.821) (.097)	0.8391 (0.857) (.088)
BCII	.2326 (.2381) (.0638)	.2336 (.2381) (.0648)	.2404 (.2381) (.0610)	.2435 (.2381) (.0609)	.2483 (.2381) (.0595)	.2355 (.2381) (.0632)	.2459 (.2381) (.0601)
BPPI	.2958 (.3030) (.0383)	.2993 (.3030) (.0369)	.3028 (.3030) (.0371)	.3078 (.3030) (.0310)	.3082 (.3030) (.0315)	.2993 (.3030) (.0374)	.3080 (.3030) (.0312)

Table (5.1) Continued

AAI	.2715 (.29167) (.0426)	.2757 (.29167) (.0396)	.2796 (.29167) (.0382)	.2832 (.29167) (.0372)	.2871 (.29167) (.0357)	.2756 (.29167) (.0402)	.2852 (.29167) (.0364)
BLOCK	32.32 (29.8) (16.78)	32.56 (30.88) (17.02)	36.49 (34.73) (17.10)	38.26 (37.4) (18.45)	38.17 (37.1) (17.08)	33.81 (31.58) (17.04)	38.21 (37.25) (17.75)
INSTITUTIONAL	23.76 (22.7) (13.53)	24.70 (22.68) (14.72)	28.33 (27.5) (15.19)	28.91 (26.75) (16.02)	29.34 (26.97) (15.81)	25.60 (24.33) (14.60)	29.13 (26.85) (15.89)
INSIDER	1.94 (0) (7.37)	1.85 (0) (7.36)	2.01 (0) (7.43)	1.97 (0) (7.35)	1.90 (0) (7.00)	1.940 (0) (7.37)	1.942 (0) (7.16)
OTHER	6.61 (0) (14.23)	6.01 (0) (13.39)	6.17 (0) (13.78)	7.38 (0) (14.72)	6.93 (0) (14.54)	6.26 (0) (13.77)	7.16 (0) (14.60)
SIZE	21.41 (21.22) (1.377)	21.61 (21.46) (1.406)	21.62 (21.46) (1.409)	21.16 (21.06) (1.407)	21.27 (21.10) (1.384)	21.55 (21.38) (1.397)	21.21 (21.07) (1.394)
PRICE	5.148 (3.80) (5.356)	6.533 (4.335) (6.391)	8.378 (6.28) (7.611)	7.289 (4.753) (7.394)	5.665 (3.533) (6.044)	6.701 (4.702) (6.645)	6.477 (4.161) (6.789)
TURN	2.17 (1.61) (2.67)	2.12 (1.75) (2.23)	2.45 (1.82) (3.78)	2.46 (1.85) (2.85)	1.90 (1.44) (1.87)	2.25 (1.68) (2.97)	2.18 (1.65) (2.42)

Table (5.2)
Pearson's Correlation Matrix

This table presents the Pearson's correlation matrix for the independent variables used in the empirical analysis for the period before and during the crisis. All variables are fully defined in Table (5.1).

Variables	CG_SCORE	BCII	BPPI	AAI	BLOCK	SIZE	TURN	PRICE
Pre-crisis								
CG_SCORE	1.0000							
BCII	0.6665***	1.0000						
BPPI	0.5515***	0.1699***	1.0000					
AAI	0.5938***	0.1841***	0.2140***	1.0000				
BLOCK	-0.0645	-0.1658***	-0.1144**	-0.0383	1.0000			
SIZE	0.0685	0.0187	0.0926*	0.0954*	-0.2746***	1.0000		
TURN	0.1710***	0.2012***	0.1350***	0.0914*	-0.0247	0.1201**	1.0000	
PRICE	-0.0157	0.0113	0.0067	0.0266	-0.1104	0.2389***	-0.1556***	1.0000
During-crisis								
CG_SCORE	1.0000							
BCII	0.6810***	1.0000						
BPPI	0.5660***	0.2005***	1.0000					
AAI	0.5567***	0.1126*	0.1575***	1.0000				
BLOCK	-0.0390	-0.0161	-0.1309**	-0.1087*	1.0000			
SIZE	-0.0678	-0.1052*	-0.0413	0.0267	-0.3041***	1.0000		
TURN	0.1438**	0.2133 ***	0.0639	0.0330	0.1005*	0.0288	1.0000	
PRICE	-0.1222**	-0.1453**	0.0122	-0.0167	-0.2526***	0.2270 ***	-0.1111*	1.0000

***, ** and * denote significance at the 1%, 5%, and 10% levels, respectively

Table (5.3)
Regression result of the impact of CG-Score on bid-ask spread in both pre and during crisis period

This table presents the regression results of information asymmetry and Corporate Governance score. Model 1 presents the results of the regression in the pre-crisis period while Model 2 presents the results during crisis period. All variables are fully defined in table (5.1). These models provide t-statistics or z-statistics which are in parentheses. It depends on the used regression fixed effect (t-statistics) or random effect (z-statistics). ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	SPREAD/pre-crisis Model (1)	SPREAD /during crisis Model (2)
intercept	.7819(3.73)***	-.3065(-2.78)***
CG_SCORE	-.3837(-2.43)**	-.0196(-0.29)
SIZE	-1.040(-4.13)***	-.5476(-9.79)***
PRICE	-1.468(-9.59)***	-.3997(-10.60)***
TURN	-.17617 (-3.07)***	-.0167(-0.59)
<i>R2</i>	<i>0.6878</i>	<i>0.6650</i>
<i>Observations</i>	<i>278</i>	<i>278</i>
<i>Groups</i>	<i>139</i>	<i>139</i>
<i>hausman test/ Prob > chi2</i>	<i>0.0000</i>	<i>0.3332</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Random effects</i>

Table (5.4)
Regression result of the impact of CG-sub indices on bid-ask spread in both pre and during crisis period

This table presents the regression results of information asymmetry and CG sub-indices. Model 1 presents the results of the regression in the pre-crisis period while Model 2 presents the results during crisis period. All variables are fully defined in table (5.1). These models provide t-statistics or z-statistics which are in parentheses. It depends on the used regression fixed effect (t-statistics) or random effect (z-statistics). ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	SPREAD/pre-crisis Model(1)	SPREAD /during crisis Model(2)
intercept	.2128(4.45)***	-.3347(-7.79)***
BCII	-.0727(-0.97)	.0207(0.67)
BPPI	-.1240(-1.69)*	-.0013(-0.04)
AAI	-.1338(-1.79)*	-.0841(-2.43)**
SIZE	-.9964(-4.08)***	-.5388(-9.79)***
PRICE	-1.466(-9.67)***	-.4033(-11.20)***
TURN	-.1736(-3.02)***	-.0148(-0.52)
<i>R2</i>	<i>0.6895</i>	<i>0.6658</i>
<i>Observations</i>	<i>278</i>	<i>278</i>
<i>Groups</i>	<i>139</i>	<i>139</i>
<i>hausman test/ Prob > chi2</i>	<i>0.0000</i>	<i>0.3976</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Random effects</i>

Table (5.5)
Regression result of the impact of block ownership on bid-ask spread in both pre and during crisis period

This table presents the regression results of information asymmetry and block ownership. Model 1 presents the results of the regression in the pre-crisis period while Model 2 presents the results during crisis period. All variables are fully defined in table (5.1). These models provide t-statistics or z-statistics which are in parentheses. It depends on the used regression fixed effect (t-statistics) or random effect (z-statistics). ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	SPREAD/pre-crisis Model (1)	SPREAD /during crisis Model (2)
intercept	1.062(3.2)***	-.6627(-4.27)***
CG_SCORE	-.3865(-2.43)**	.0055(0.09)
BLOCK	-.2084(-1.31)	.2167(3.12)***
SIZE	-1.060(-4.36)***	-.5239(-9.95)***
PRICE	-1.469(-9.75)***	-.3751(-10.02)***
TURN	-.1792(-3.19)***	-.0167(-0.61)
<i>R2</i>	<i>0.6922</i>	<i>0.6870</i>
<i>Observations</i>	<i>278</i>	<i>278</i>
<i>Groups</i>	<i>139</i>	<i>139</i>
<i>hausman test/ Prob > chi2</i>	<i>0.0000</i>	<i>0.2359</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Random effects</i>

Table (5.6)
Regression result of the impact of different types of block ownership on bid-ask spread in both pre and during crisis period

This table presents the regression results of information asymmetry and different types of block ownership. Model 1 presents the results of the regression in the pre-crisis period while Model 2 presents the results during crisis period. All variables are fully defined in table (5.1). These models provide t-statistics or z-statistics which are in parentheses. It depends on the used regression fixed effect (t-statistics) or random effect (z-statistics). ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	SPREAD/pre-crisis Model (1)	SPREAD /during crisis Model (2)
intercept	.7823(3.78)***	-.3412(-3.12)***
CG_SCORE	-.3678 (-2.38)**	-.0121(-0.18)
INSTITUTIONAL	-.1157(-1.63)	.0775(2.28)**
INSIDER	-.5693(-4.23)***	.0627 (1.02)
OTHER	-.0034(-0.04)	.1107(3.28)***
SIZE	-1.078(-4.40)***	-.5207(-9.25)***
PRICE	-1.515(-10.30)***	-.3794(-10.26)***
TURN	-.1901(-3.50)***	-.0193(-0.68)
<i>R2</i>	<i>0.7087</i>	<i>0.6875</i>
<i>Observations</i>	<i>278</i>	<i>278</i>
<i>Groups</i>	<i>139</i>	<i>139</i>
<i>hausman test/ Prob > chi2</i>	<i>0.0000</i>	<i>0.2393</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Random effects</i>

Table (5.7)
Regression result of the impact the interaction between ownership and CG
on bid-ask spread during crisis period

This table presents the regression results of the interactive effect of CG and block ownership on information asymmetry. All variables are fully defined in table (5.1). This model provides z-statistics which is in parentheses. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	SPREAD /during crisis
	Model(1)
intercept	-.8173(-3.10)***
CG_SCORE	.1152(0.66)
BLOCK	.3266(2.04)**
CG_SCORE *BLOCK	-.0782(-0.71)
SIZE	-.5250(-9.97)***
PRICE	-.3766(-10.01)***
TURN	-.0172(-0.63)
<i>R2</i>	<i>0.6886</i>
<i>Observations</i>	<i>278</i>
<i>Groups</i>	<i>139</i>
<i>hausman test/ Prob > chi2</i>	<i>0.2470</i>
<i>Method of estimation</i>	<i>Random effects</i>

Table (5.8)
Regression result of the impact the interaction between the types of block ownership and CG on bid-ask spread during crisis period

This table presents the regression results of the interactive effect of CG and two types of block ownership on information asymmetry. All variables are fully defined in Table (5.1). This model provides z-statistics which is in parentheses. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	SPREAD /during crisis Model(1)
intercept	-.3578 (-3.36)***
CG_SCORE	-.0012(-0.02)
INSTITUTIONAL	.0889(1.08)
INSIDER	.0642(1.04)
OTHER	.2845 (2.65)***
CG_SCORE * INSTITUTIONAL	-.0090(-0.18)
CG_SCORE * OTHER	-.1145 (-1.87)*
SIZE	-.5248 (-9.32)***
PRICE	-.3801(-10.38)***
TURN	-.0201(-0.72)
<i>R2</i>	<i>0.6924</i>
<i>Observations</i>	<i>278</i>
<i>Groups</i>	<i>139</i>
<i>hausman test/ Prob > chi2</i>	<i>0.2476</i>
<i>Method of estimation</i>	<i>Random effects</i>

Table (5.9)

An additional regression result of the impact of different types of institutional block ownership on bid-ask spread in both pre and during crisis period

This table presents the regression results of information asymmetry and different types of block ownership. Block institutional investors is classified into BLOCK1 and BLOCK 2. Model 1 presents the results of the regression in the pre-crisis period while Model 2 presents the results during crisis period. All variables are fully defined in table (5.1). These models provide t-statistics or z-statistics which are in parentheses. It depends on the used regression fixed effect (t-statistics) or random effect (z-statistics). ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	SPREAD/pre-crisis Model(1)	SPREAD /during crisis Model(2)
intercept	0.7771 (3.79)***	-.3342 (-3.07)***
CG_SCORE	-.3639(-2.38)**	-.0168(-0.25)
BLOCK1	-.0596 (-0.94)	.0289(1.05)
BLOCK2	-.1068(-1.52)	.0714(2.16) **
INSIDER	-.5829(-4.01)***	.0586(0.94)
OTHER	-.0092 (-0.11)	.1082(3.29)***
SIZE	-1.079 (-4.34)***	-.5221(-9.40)***
PRICE	-1.515(-10.24)***	-.3800 (-10.29)***
TURN	-.1903(-3.49)***	-.0198(-0.71)
<i>R2</i>	<i>0.7089</i>	<i>0.6866</i>
<i>Observations</i>	<i>278</i>	<i>278</i>
<i>Groups</i>	<i>139</i>	<i>139</i>
<i>hausman test/ Prob > chi2</i>	<i>0.0000</i>	<i>0.2944</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Random effects</i>

Table (5.11): Robustness Checks

This table presents the results of robustness checks. Model 1 gives the fixed effect regression results when LEVERAGE is added as an additional independent variable. Model 2 gives the fixed effect regression results when using trading volume instead of turnover ratio. Model 3 gives the fixed effect regression results when VOLATILITY is added as an additional independent variable. All variables are fully defined in Table (5.1). T-statistics are in parentheses. ***, ** and * denote respectively significance at the 1%, 5% and 10% levels.

Variables	SPREAD Pre-crisis Model(1)	SPREAD Pre-crisis Model(2)	SPREAD Pre-crisis Model(3)
intercept	.7528(3.57)***	.7960(3.76)***	.7090(3.50)***
CG_SCORE	-.3792(-2.39)**	-.3837(-2.42)**	-.3942(-2.57)
SIZE	-1.287(-4.00)***	-.9320 (-3.88)***	-1.053(-4.18) ***
PRICE	-1.413(-8.80)***	-1.458(-9.56)***	-1.314(-7.60)***
TURN	-.1684(-3.13)***		-.1803(-2.90) ***
VOLUME		-.544(-2.96)***	
LEVERAGE	.1726(1.56)		
VOLTALITY			-.1731(-2.08)**
<i>R2</i>	<i>0.6957</i>	<i>0.6920</i>	<i>0.6985</i>
<i>Observations</i>	<i>278</i>	<i>278</i>	<i>278</i>
<i>Groups</i>	<i>139</i>	<i>139</i>	<i>139</i>
<i>hausman test/ Prob > chi2</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>
<i>Method of estimation</i>	<i>Fixed effects</i>	<i>Fixed effects</i>	<i>Fixed effects</i>

Chapter Six: Conclusion

Chapter Six: Conclusion

The primary theme of this thesis, which connects the three essays, is Corporate Governance (CG). The thesis consists of three related but different papers on CG effectiveness in UK. In this thesis, CG in both periods before and during crisis is examined in terms of its effect on attracting block shareholders (essay one), its role in reducing agency cost and improving firm performance (essay two), and its effect on reducing information asymmetry (essay three). It provides an insight into CG in UK before the financial crisis 2005- 2007 and during the crisis period 2008-2009 and hence provides more understanding of the changing role of CG and its effectiveness during this turbulent period.

In the first essay, block shareholders are of particular importance because they can engage in corporate monitoring, have the potential to reduce the agency problem, and improve corporate performance. Therefore, in essay one the effect of CG on block shareholdings of listed non-financial firms in the UK from 2005 to 2009 is examined. Moreover, whether this relationship has changed before and during the recent financial crisis is also investigated. The study reveals a significant positive relationship between CG and total block shareholdings for the period from 2005 to 2009. It is also found that board composition and independence are the only CG sub-index that affects total block shareholdings. Moreover, the results show that only institutional block shareholders consider CG to be an important part of their investment decisions. Further analysis suggests that different sub-indices of CG appear to affect different types of block shareholdings. The results also provide

evidence that the relationship between CG and block shareholdings changes from insignificant before the financial crisis to significant during the financial crisis, suggesting that block shareholders believe CG was particularly important during times of financial trouble. Overall, the results underline the significance of CG to block shareholders' investment decisions. This means that firms with good CG mechanisms tend to be more attractive to block shareholders. Collectively, the above evidence suggests that firms need to maintain and sustain good CG mainly board independence to enlarge its shareholder base and raise new capital. It further suggests that Companies' efforts to improve CG practice will increase their ability to be attractive to shareholders and this should enable further growth.

In the second essay, the focus was on examining whether there is a difference of the effect of CG on performance of UK non-financial firms before and during the financial crisis. Therefore, in this study, two main questions were raised: the first, does CG act as an effective mechanism in improving firm performance? And, the second, if so; does agency cost mediate the effect of CG on firm performance? The second essay therefore sought to not only fill the gap in the literature about the effect of CG on firm performance during crisis period in UK, but also to empirically examine the mediating role of agency cost before and during the crisis period. By using a sample of 139 non-financial firms from the FTSE 350, the results, consistent with agency theory, found a significant positive relation between CG and firm performance in the pre-crisis period. In addition, the Accountability and Audit Index (AAI) was found to be the only CG-sub-index that appeared to affect firm performance in the pre-crisis period, thus indicating

an important role for accountability in the pre-crisis period. Overall, the result provides the evidence that agency cost completely mediate the relationship between CG and firm performance. However, during the crisis period, no evidence is found of the effect of CG on both agency cost and performance. Therefore, it can be argued, based on these results, that the previous argument that CG failure contributed to the financial crisis is rejected. At the same time, however, it was expected from CG to play a major role during this turbulent time in reducing agency cost and improving firm performance.

The third essay, as indicated before, is devoted to information asymmetry. Information asymmetry has been under focus in a great deal of the finance literature. The current essay, therefore, examined the effect of CG on the level of information asymmetry. The essay sought to examine the effect of CG in reducing information asymmetry as measured by bid-ask spread in both before and during crisis. Also, the effect of block ownership on bid-ask spread was examined. Moreover, this essay investigated whether CG helps to alleviate the negative impact of block ownership by examining the effect of the interaction between block ownership and CG on bid-ask spread. Using a sample of 139 FTSE 350 non-financial companies, the results indicate the important role of CG in reducing information asymmetry only in the pre-crisis period. However, contrary to the expected role of CG during crisis period, CG was found to have no effect on mitigating information asymmetry. Further results revealed that both board practice and process index and accountability and audit index were effective in reducing information asymmetry in the pre-crisis period. However, during the

crisis period, only accountability and audit index appeared to have a significant negative impact on information asymmetry. In addition, block ownership was found to have a significantly positive relationship with bid-ask spread in the crisis period, but no effect was found in the pre-crisis. It was also found that different types of block ownership have different effects on bid-ask spread. It was found that insider block ownerships have a negative impact on bid-ask spread in the pre-crisis period. However, during crisis period both institutional block shareholdings and other block shareholdings were found to have a significant positive effect on bid-ask spread, this implies that they are perceived as having private information. This means in particular that block shareholders can influence the extent of disclosure to maximise their private benefits and this in turn increase information asymmetry problem. More interestingly, the result showed that there is no role for CG in reducing the negative impact of both total block ownership and different types of block ownership during crisis period. Overall, the findings point to the fact that block shareholders during crisis period are more able or better positioned to take advantage of their private information. In turn, this implies the failure of CG mechanisms during this unstable condition in mitigating information asymmetry.

To sum up, CG has been a very significant issue during the recent years, especially after the blame directed at CG for being one of the causes for the recent financial crisis. In essay one, CG proved to be important in attracting block shareholders during the crisis period, which implies the need for good CG to rebuild investors' trust during unstable periods. This means in particular that

where there is a good CG, investors are more likely to make rational investments decisions based on companies' CG especially in unstable conditions. However, CG does not appear to have any effect in attracting block shareholders in the pre-crisis period indicating that block shareholders consider CG in their investment decision only in crisis period rather than in normal times. In essay two and three, although CG proved to be effective in mitigating information asymmetry, reducing agency cost, and improving firm performance in the period prior to the crisis, no evidence was found during crisis period. This implies that CG failed to affect agency problems or firm performance. Hence, essays two and three contributed to the prior literature by shedding light on the role of CG in reducing agency problem and improving performance. The combined empirical results of essays two and three provided the evidence of the effectiveness of CG in solving agency problem and hence reducing information asymmetry and agency cost that in turn improve firm performance in the pre-crisis period only.

Thus, as the overall results indicated that block shareholders consider CG to be more important during crisis period, in order to attract more shareholders and increase shareholders base, there is a need for more reforms of CG during financial crises. Such reforms will enable companies with good CG to improve firm performance and improve the information environment, and in turn, this will rebuild investors' trust in financial markets. The findings point specifically to an important issue which is the need to re-evaluate CG not only in stable periods but also during turbulent times with a view to assessing its ability to perform well in such different conditions. Finally, the findings direct the attention to ownership

concentration as an important CG mechanism. Therefore, understanding the investment preferences of block shareholders is important for firms aiming to increase their shareholder base and benefit from monitoring by block shareholders. Therefore, companies should follow the recommendations of walker report (2009) which give more attention to institutional shareholders: communication and engagement. *“There should be a dialogue with shareholders based on the mutual understanding of objectives. The Board as a whole has responsibility for ensuring that a satisfactory dialogue with shareholders takes place” (Walker report, p 82).* In the same vein, understanding the problem associated with block ownership will also help in designing an effective system for investor protection which in turn will promote market confidence.

The three studies which greatly contribute to the existing literature by taking into consideration some significant and novel questions and by recommending pathways for potential research, they also have important regulatory implications. Most importantly; they draw more attention to the issue of CG effectiveness and the role of block ownership in listed UK companies especially during crisis period. The results of essay one therefore have implications for companies; they are useful for management of listed companies in managing relationships with block shareholders. By doing this companies will comply with the recommendation of the walker reports with regard to its relation with major shareholders.

Moreover, the findings of the research, therefore, will have regulatory implications from different angles. First, the non-significant effect of CG on agency cost, information asymmetry, and firm performance during crisis period indicates the inefficiency and ineffectiveness of CG in solving agency problems and enhancing shareholders interest. This will have significant implications for regulators and policy-makers; specifically, regulators and policy makers should draw on these results to revise the regulations of CG that will help and support companies in their efforts to improve CG practices and, mainly, board effectiveness. These empirical results suggest the need for more imaginative and innovative improvements in CG as far as regulators are concerned. Regulators should also draw on these results to revise some of the regulations of CG and to formulate appropriate CG control mechanisms to protect the interest of shareholders. The walker report 2009 in the same vein provided recommendation regarding the function and performance of the board of directors. This, in turn, will help and support companies in their efforts to improve CG practices and attract more shareholders.

Second, the significant positive effect of block ownership on information asymmetry requires careful consideration and more regulatory improvements in different areas of CG especially with regard to disclosure, which in turn will ensure higher protection for shareholders. In the same vein, policies have to be developed in a way that encourages block shareholders to improve disclosure and transparency instead of using their private information to exacerbate the information asymmetry problem. Indeed, it is open to regulators to choose to

focus more directly on CG mechanisms that currently fail to have the desired effect in reducing information asymmetry.

Finally, these results also indicate for the regulators that even in a strong regulatory environment, like UK, the effectiveness of governance mechanisms should be tested regularly to assess any potential improvements that are needed (Gisbert and Navallas, 2013).

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