INSTITUTIONAL SHAREHOLDERS PREFERENCES ON CORPORATE GOVERNANCE

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*THE THESIS IS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY OF THE UNIVERSITY OF PORTSMOUTH.
Abstract
The study examines the association between institutional shareholdings in FTSE ALL Share firms and corporate governance from 2006 to 2010. Institutions are believed to invest in firms with better corporate governance, to help meet their fudiary duties. The evidence is consistent with this view, that institutional investors do tilt their portfolios’ to firms with better governance. However, when examining ownership at various levels only block-ownership at ≤10% had a positive significant association to corporate governance. It was also found that institutional shareholder became more sensitive after the 2007-8 financial crisis. Finally, when exploring the association for different types of institution, it was found that investment advisors and hedge funds were the most sensitive to corporate governance.

The study provides a contribution to knowledge on institutional ownership, as it provides the first evidence on the institutional investor preferences on corporate governance within the UK and which elements are the most important to institutions.
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Abbreviations

AAER  Accounting and Auditing Enforcement Releases
CalPERS  The California Public Employees' Retirement System
CalSTRS  The California State Teachers' Retirement System
CAR  Cumulative Abnormal Returns
CBI  The Confederation of British Industry
CEBS  Committee of European Banking Supervisors
CEO  Chief Executive Officer
CFO  Chief Finance Officer
CREF  College Retirement Equities Fund
EMSA  European Security and Markets Authority
ERC  Earnings Response Coefficient
FRC  Financial Reporting Council
GL  Glass and Lewis
IRRC  The Investor Responsibility Research Center
ISC  The Institutional Shareholder Committee
LTIP  Long Term Incentive Plans
MM  Market Model
NAPF  National Association of Pension Funds
NED  Non Executive Directors
NYC  New York City Employees' Retirement System
OECD  Organisation for Economic Co-operation and Development
PIEs  Public Interest Enterties
PIRC  Pensions & Investment Research Consultants Ltd
PPE  Property plant and Equipment
RREF  Research Recommendations and Electronic Voting
SEC  Securities Exchange Commission
SOX  Sarbanes Oxley
SWIB  The State of Wisconsin Investment Board
Declaration

‘Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award’;

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Dissemination
The British Accounting and Finance Association (BAFA) – South East Area Group Conference December 2016. Does Corporate Governance matter to Institutional Investors?

The British Accounting and Finance Association (BAFA) – Auditing Special Interest Group Conference 5th May 2017 “Do Audit Quality factors matter to Institutional Investors?”

Portsmouth Business School Conference June 2017 “Do Audit independence factors matter to Institutional Investors?”
Chapter One

Introduction
1.0 Introduction

“It was the best of times and the worst of times” (Dickens, 1859 p1).

In 2006 to 2007 the economy was booming the FTSE 100 reached over 6600 in June 2007 (Capital I Q, 2018), GDP was predicted to increase by 1.9% in 2005 to 2.7% for both 2006 and 2007 (IMF, 2006). City bonuses were reaching record highs with bonuses accounting for a 3rd of finance and insurance sectors salaries between 2006 to 2007 (Office of National Statistics, 2017). In summary the economic environment looked healthy. Then on 14th September 2007, Northern Rock faced a liquidation crisis and became the first British bank to have a run for 150 years (Kingsley, 2012). The UK entered the period of recession, for six full quarters there was falling output from 2008 into 2009 (Gregg and Wadworth, 2010). The crisis was not confined to the UK; it was a global financial crisis. The crisis led to decreased confidence in the financial markets and the FTSE 100 fell to below the 3600 in March 2009 a drop of over 45% since June 2007 and then began to gradually recover. The crisis sparked a number of reviews of corporate governance of the banks and financial institutions (Walker, 2009; Kay, 2012). In short, the confidence in the UK financial system was damaged.

Agency problems have been cited as an issue for many years now (Berle and Means, 1932; Jensen and Meckling, 1976). The fundamental issue is the divorce between owner and manager of a firm, when this happens there can be a divergence of priorities for each group. These problems are exacerbated by the asymmetry of information. Directors can then take advantage of external shareholders and make suboptimal decisions for the company, which could include wasting resources on excessive pay (Jensen and Meckling, 1976; Mueller, 2006).

Good corporate governance could alleviate some of the agency issues. Where Armstrong, Guay and Weber (2010) defined corporate governance as

“the set of contracts that help align the actions of managers with the interests of shareholders, and we focus on the role information asymmetry plays in agency conflicts between these parties. In terms of the firm-specific information hierarchy, the literature typically views management as the best informed, followed by outside directors, followed by shareholders”. p 180.
Shareholder engagement can help improve corporate governance, by monitoring their compliance to ‘The Code’ (FRC, 2016a). However, the agency principal relationship has changed since the seminal work of Berle and Means (1932). As, individual shareholders are no longer the main beneficiary of UK shares, with current individual shareholders owning 12.3% of all shares in 2016 of UK quoted shares (Office of National Statistics, 2016).

Institutional investors are now the largest shareholder group in the UK (Office of National Statistics, 2016) and they are responsible for shareholder engagement on behalf of their principals. Thus making the investment chain longer.

Where institutional investors are defined by two key factors, they are professional (they are paid for their services) and are investing for the benefit of others (O’Barr and Conley, 1992). If the institutions are acting for the benefit of others, then they have a responsibility to monitor their companies in which they invest. Institutional investors are not individual groups acting in isolation; their activities overlap (Golding, 2003). Institutions are represented by the figure 1.
The institutions can range from banks, charities, non-investment companies, but the funds that they usually invest in are; pension funds, insurance companies, investment companies who consist of unit trusts (mutual fund) and investment trusts (Golding, 2003). Often the institutions will invest and manage their own funds so there is an overlap between fund managers and institutions.

The role of the institutional investors is important, as their engagement with investee firms has been formalised in the world’s first Stewardship Code for institutional investors in 2010 and then amended in 2012 (FRC, ND). Where the Stewardship Code encourages all institutional investors to publish a statement explaining their compliance with the Stewardship Code (FRC, ND).

1.1 Issues with Institutional Investors
The original agency problem was a simple one, between the agent and principal, however, the investment chain has grown. As can be seen in figure 2, there is an increased layer of complexity, which requires institutional investors to act in the best interest of their clients. Adding an extra layer to the relationship introduces additional agency problems, where the agents are watching the agents (Black, 1992).
Despite the institutional investors’ fiduciary duties to their principals, institutions have been criticised for their lack of engagement with investee firms (Walker, 2009). This was demonstrated by the 2008 financial crisis where only 10% of bank resolutions were voted against prior to the financial crisis, thus demonstrating their inability or unwillingness to restrain the management’s behaviour, which inevitably lead to the financial crisis (Walker, 2009).

It has been argued that engagement is costly for the institution and it is not always optimal to be actively monitoring the investments (Admati, Pfleider and Zechner, 1994). Institutions also may be concerned that a vote against a proposal may cause the share price to fall (Walker, 2009). In the market based systems like the UK and US, banks and other financial institutions take a major role in the capital markets and have an important role in firms’ corporate governance systems (Johnson, Schnatterly, Johnson and Chiu, 2010). However, are the principals as apathetic as the institutions that they have entrusted their investment with?

The ownership structure of the UK firms is increasingly complex this can be demonstrated by the Office of National Statistics (2010). In the 2010 share ownership survey they stated
that they could no longer identify which type of institution owned what securities for 16% of UK quoted companies, due to not being able to ascertain who the beneficial owner of shares held in nominee accounts or other aggregate funds. This results in a reduced possibility to have a collaborative engagement (Walker, 2009). This makes dialogue between agent and principal more difficult. Within corporate governance there is an importance placed upon the dialogue with investee companies, however this diffused ownership complicates the process. From figure 3 it can be seen it is not the agent watching the agent but the ‘The agent watching the agents watching the agents’.

**Figure 3 - Agents watching the agents, watching the agents**

The Walker Review (2009) identified that shareholders have the luxury of limited liability in respect of their investee companies, however when liquidity problems occurred in some of the UK banks, it was the UK taxpayer who effectively assumed unlimited liability and with this emphasises that shareholder did not discharge their responsibility as owners (Walker, 2009).

Then another complexity is the difference in institutions’ objectives. Some may be taking an active strategy and want little engagement and can easily disinvest and others may have longer strategies but have agency problems (Walker, 2009).
The Walker Review not only criticises the lack of engagement by the shareholder, but the sometimes unwillingness of the management to engage in dialogue. This has led to the Review recommending that the chair should be the primary focus for the dialogue, and it should be at least once a year with the major shareholder and any issues of concern should be communicated back to the rest of the board. The shareholder should however, not be using these meeting to second guess and micro manage the board (Walker, 2009).

1.2 Prior Literature
The aim of the study is to examine the relation between institutional ownership and corporate governance. There is an area of corporate governances which is under researched with only Bushee, Carter and Gerakos, (2013) and Chung and Zhang, (2011) having comparable research. Both of these studies used US data from the late 1990s to mid-2000, and found that there was a significant positive association between total institutional shareholdings and good corporate governance. The only UK study that is broadly comparable is by Hawas and Tse (2016) who finds major shareholdings are positively associated with good governance, where major shareholders includes, individuals, corporations and related parties. These studies are discussed in further detail in chapter 4, section 4.6.

There is little directly comparable research into institutional ownership preferences and the audit environment, with just Hawas and Tse (2016) and Chung and Zhang (2011) including elements of what constitutes as the audit environment. Both of these studies found no association between institutional ownership and their proxy for audit environment. Other research into this area focused on the reverse causality, how institutional investors influenced audit practices (Kane and Velury, 2004; Han, Kang and Ree, 2013; Adelop, Jarrow and Scott, 2012). None of the prior research has used the ISS (RiskMetrics) as the proxy or similar agency, thus presenting a gap in the research. This study is the first to use the off the shelf score. The element of the research is discussed in section 4.6.2.

Prior research has found that there is a positive association between institutional ownership and good board structure (Chung and Zhang, 2011; Hawas and Tse, 2016; Bushee et al, 2013). This is discussed in greater detail in section 4.6.3.
There is no evidence that institutional investors tilted their portfolios to firms that have good remuneration practices (Chung and Zhang, 2011). However, this area of the research is underexplored and there is very little research on whether institutional investors use remunerations policies as part of their investment decisions, despite directors’ remunerations being one of the reported in business press (Core, Guay and Larker, 2008). The dissuasion around directors’ remunerations can be found in section 4.3 and 4.6.4.

There is little acknowledgement in the literature of the impact the level of block ownership of institutional owners may have on the association with institutions’ preferences for good governance. The only study that investigates the differences is Kurshed, Lin and Wang (2011), who found that there was a negative association between block ownership and directors’ ownership. This study provides unique evidence on how the different levels of ownership changes how institutional investors changes their investment strategy based on governance information.

During the study period there was a considerable regulatory shift in response to the 2007-8 financial crisis (see chapter 2 more detail). There is evidence to suggest that there was a change in association between institutional ownership and good governance from before and after the financial crisis according to Hawas and Tse (2016) which is discussed in greater detail in section 4.6 of the chapter 4.

In research related to institutional shareholders there is a common view that institutions have the possibility of having conflicts of interests between effective monitoring of their investee companies, because of possible business relationships (Black, 1992; Payne, Millar and Glezen 1996; Kochhar and Levitas 1998; Chen, Harford, and Li; 2007). Thus, discussing institutions as a homogenous group may reduce the value of research that does not distinguish between the different types of financial institution. However, both Bushee, et al (2013) and Chung and Zhang (2011) did examine the association in ownership for different investor types and Bushee, et al (2013) found pension funds to be the most sensitive to governance changed, whereas, Chung and Zhang (2011) found all of the institutional types exhibited the same pattern as total institutional shareholders.
1.3 Motivation

This section discusses the motivation for the study.

The motivation for the study is that the UK provides a fertile ground for research on institutional ownership given the shareholder powers, as it can be argued that the financial crisis was a critical juncture for institutional investors in the UK (Hall, 1993; Braun, 2015; Chwieroth, 2010). As the UK had the first code of ‘best practice’ on corporate governance (Brennan and Solomon, 2008), it is plausible that the UK was fertile ground for a shift in practices for both actors involved in the governance process. An example of a regulatory shift in the UK is the introduction of the Stewardship Code (2010). Thus, it is argued that the UK provides a unique market for research into institutional shareholder preferences, as it is historically a leader of corporate governance practices.

The literature provides evidence that there is a strong association between institutional ownership and good corporate governance (Chung and Zhang, 2011; Bushee et al, 2013; Hawas and Tse, 2016). However, there appears to be some mixed and inconsistent evidence when it come from different types of institutional ownership (Bushee et al, 2013; Hawas and Tse, 2015; Chung and Zhang, 2011). Each type of ownership group; pension fund, insurance companies, hedge funds and banks, seem to have a heterogeneous preference on corporate governance arrangements of target firms depending on their cost-benefit analysis of their having an active presence in the firm. This depends upon whether the owner type is pressure sensitive or governance sensitive (Bushee et al, 2013).

There is currently very little literature on institutional share ownership and the board, and that which exists is either US based evidence (Chung and Zhang, 2011; Bushee et al, 2014) or UK research is for much smaller sample (Hawas & Tse, 2016). Thus, this study provides a new insight into this area.

In contrast to prior studies, this research uses a compressive measure for the proxy for good corporate governance, which was developed by RiskMetrics and is the market leader of governance ratings (Belinfanti, 2009), which is discussed further section 1.5. Using an off the shelf measure this is a cost effective way for institutions to monitor their investments corporate governance, this would be especially useful for investors who have a smaller stake in a firm. It provides a quick and easy measure to gauge a firms’ corporate governance
health and this would have been especially important pre and post-relevant regulation. This gives rise to another motivation for this study, to provide a unique perspective of how institutional investors use these proxy measure for corporate governance in making their investment choices. The study is important as it examines institutional preferences on corporate governance, whereas the majority of the research into this area (e.g. Hussainey and Al-Najjar, 2012) examines how institutional investors influence corporate governance. The reason why this direction of causality was taken was because of the tensions between institutional investors and corporate governance, previously discussed. In addition, it is the largest study of this kind using UK data with over 1470-year firm observations.

1.4 Aims and Objectives
The primary aim of this study is to examine the association between institutional shareholdings and good governance.

The study provides evidence for the following research questions:

- Do institutional investors prefer to invest in firms with good corporate governance?
- If they do, is there a particular element of good governance that is more influential?
- Do institutional investors’ preferences change when they have different levels of block-ownership?
- Given the study period, was there any changes in association between institutional preferences from pre-financial crisis, during the crisis and post crisis?
- Do different types of institutions have different preferences for good governance?

Formulating the hypotheses involved investigating the possible effects corporate governance has on institutional investors. This firstly involved examining the particular area of corporate governance and then how might the overall corporate governance influence the institutional investors. These hypotheses are based upon chapter four. Then finally an analysis of the type of institutions and how that could alter their preferences, based on chapter three’s findings.

The following hypotheses have been examined in the three empirical chapters, seven, eight and nine:
H1a – There is a positive association between total institutional ownership and audit score.

H1b Where block-ownership is greater there will be less association between institutional ownership and the audit score.

H1c - There is increase in the positive association between the institutional ownership from before and after the financial crisis of 2007 to the audit score.

H2a There is a positive association between total institutional ownership and the compensations score.

H2b Where block-ownership is greater there will be less association between institutional ownership and the compensation score.

H2c There will be increasing in positive association between total institutional ownership and compensation score from before and after the financial crisis of 2007-8.

H3a – There is a positive association between the total institutional ownership and the board score.

H3b -Where block-ownership is greater there will be less association between institutional ownership and the board score.

H3c There will be increasing in positive association between total institutional ownership and board score from before and after the financial crisis of 2007-8.

H4a There is a positive association between total institutional shareholder ownership and the overall corporate governance score.

H4b Where block-ownership is greater there will be less association between institutional ownership and the overall corporate governance scores.

H4c There will be increasing in positive association between total institutional ownership and overall corporate governance from before and after the financial crisis of 2007-8.

H5a There is a positive association with pension ownership and good corporate governance.

H5b There is a positive association with banks ownership and good corporate governance.
H5c There is a positive association with insurance firm ownership and good corporate governance.

H5d There is a positive significant association between hedge fund ownership and good corporate governance.

H5e There is a positive association between investment advisor ownership and good corporate governance.

1.5 Research Design

Ordinary least square (OLS) regressions were used to establish if there was an association between institutional shareholdings and good governance for FTSE All share companies, excluding financial institutions from 2006 to 2010. The study examines the association between institutional ownership and good governance.

Institutional ownership is the ratio of shares held by institutional shareholders in a firm. The study obtained five measures for corporate governance, where two proxies for overall corporate governance, CGQ Index and CGQ Industry, where each firm has a rating of 1 to 100, where 1 is bad and 100 is good. The two measures differ in the fact they are comparing against the companies’ industry as defined by S&P’s Global Industry Classification Standard (GICS) for the Industry score and the MSCI EAFE index for the Index score (Lyons, 2003). The remaining measures of corporate governance are from three sub-indexes; audit environment, board practices and remunerations. Each of the scores is graded from 1 to 5, where 1 is poor and 5 is good. The scores are developed by ISS (RiskMetrics), the scores use 55 elements of corporate governance, further details can be found in Appendix A. The scores are used rather than a self-constructed measure, as the information acquisition is costly to institutional investors, thus investors are more likely to use a summary measure like ISS (RiskMetrics). This measure therefore helps answer the research question, as if institutions are more likely to use a summary measure, then the association between ownership and governance is easier to show.
A regression analysis was used to establish if there was an association between institutional shareholdings and good governance. A number of control variable and dummy variables to ensure the robustness of the results.

The OLS regression with a fixed firm effect was used to examine the relationship between total institutional ownership and good governance, these tests were run again to establish the relationship between each type of investor. The logit regression was used to examine the association between each block-ownership with a fixed firm effect to add to robustness. To examine if there was a change in preference over the study period an interactive dummy was introduced into the OLS regression.

1.6 Contribution
A large proportion of the UK population are indirectly investing in the shares, either through their pension, life insurance or savings plans. Thus, they are affected by the choices that institutions make to invest their capital. The UK has gone under a period of great regulatory shift in recent years. Shareholders have been given increased powers to monitor their investee firms. These changes have been to be able to aid institutional investors to monitor and engage more actively in the stewardship of their investee firms (Wong, 2010). However, institutions were criticised for their lack of monitoring (Wong, 2010; Kay, 2012; Walker, 2009), despite there being little empirical evidence to support the view. This study in the UK to examines if institutional investors tilt their portfolios in relation to corporate governance practices. It is important as the public are reliant on the institutions to monitor the investments they make on their behalf.

Wong (2010) states that excessive portfolio diversification makes monitoring investee firms more difficult. This study has used ISS (RiskMetrics) measure for corporate governance, this is a simple score and can be used by investors who do not wish to use their time to monitor the investee firms themselves. Thus, this study is an improvement on past studies.

The study provides a unique review of UK shareholder preferences and corporate governance in an interesting period. There has been clear regulatory pressure for institutions to take more of an active role in the governance of the firms in which they invest in (Kay, 2012). There is little research into the relation between institutional share
ownership and good corporate governance, and especially in the UK. The only other UK study by Hawas and Tse (2016) uses a far smaller sample size, and most importantly examines major shareholdings, as oppose to institutional shareholders who have been the target of regulators. This study is important, as it add to the literature on how the financial crisis could be described as a critical juncture for institutional investors.

The study provides evidence that there is an association between good governance and institutional investment within the UK. Prior research has examined this broad area, however it is US based (Chung and Zhang 2011; Bushee et al, 2013). However, this prior research has not examined the relationship between institutional ownership and certain elements of corporate governance, whereas this study has examined the audit environment, board practices and remunerations.

The findings on the audit score are important and contribute to the growing body of research on institutional share ownership. Auditors were described by Michel Barnier as “The dog that didn’t bark” in response to the auditors’ role in 2007-8 financial crisis, which has since led to a number of regulatory changes made to the audit profession (Hooke, 2014). However, auditors were not the only ones criticised for their part in the financial crisis, but also institutional investors for their lack of engagement, by both the Walker Review in 2009 and the Kay Review in 2012. This combination of events sees a clear change in preference for the institutions.

Despite the interest by the regulators, there is still a gap in the research on this topic area. The impact of audit quality in the investment decisions of institutional investors has been sparsely researched. The majority of the research on auditing and institutional ownership focuses on how institutions can act as monitoring devices to improve audit independence (Mitra and Hossain, 2007; Lim Ding and Charenwog, 2013) or how institutional shareholders influence choice of audit firm (Kane and Velury, 2004; Han, Kang and Rees, 2013) and how institutional shareholder may encourage greater audit committee activity (Adelop, Jallow and Scott, 2012b). There appears to be no research that is directly comparable to this study, where the focus is on how important the audit environment is to institutional investors.
An important contribution is the results on the level of block-ownership and how that influences the preferences on corporate governance, contributes to the literature, as prior studies have not examined the block-ownership levels for overall corporate governance, the audit environment and remunerations (Chung and Zhang, 2011; Bushee et al, 2013). Only Khurshed, Lin, and Wang, (2011) have examined the association between institutional ownership and the board structure. The results show there was a clear change in preference for firms with smaller stakes. This is important for regulators, as this information would help them target different levels of block- holdings for the regulatory changes.

1.7 Chapter Structure
The thesis is divided into ten separate chapters. This section will outline the content of each chapter, beginning with chapter two.

Chapter two outlines the theoretical framework used for understanding the theoretical context. It reviews three main theoretical streams; agency theory, limited attention theory and critical juncture. It then goes on to summarises the historical developments in corporate governance and discusses the regulatory requirements of institutional shareholders. It then elaborates on the changes in corporate governance practices since the 2007-8 financial crisis.

Chapter three examines the role of institutional investors in the corporate governance of the firms they invest in. It does this by first outlining the different types of institutional investors that are reviewed in this study. Then it explains who the proxy advisors are and how institutional investors may use them for guidance on corporate governance issues. It discusses the role of activism for institutional investors and how it may differ.

Chapter four examines the literature on corporate governance and discusses the evidence for what is the optimal governance system, specifically discussing the following: board of director; managerial ownership; executive remunerations and the audit environment. From there it goes on to discuss the key literature on the association between institutional shareholdings and good governance.

Chapter five draws from the literature reviewed in chapters, two to four and develops the hypothesis that have been tested in this study. The hypotheses are based upon the three
sub categories of corporate governance, the audit environment, board remunerations and the board structure and then the overall corporate governance and the possible associations to institutional ownership. It then it explores the expected associations between the different types of institutional shareholders and their associations to each of these areas of corporate governance.

Chapter six is the research methodology, where the research philosophy standpoint is established. It then goes on to discuss the aims of the research and then how the research questions are going to be answered. It provides a detailed explanation of the proxies for corporate governance. The chapter presents the variables used in the OLS regression and justifies the approach taken.

Chapter seven is a detailed examination of the findings for the sub-scores, audit, remuneration and board. It discusses the meanings behind the findings and explain the reasons for the results, by drawing from the current academic research and the economic environment.

Chapter eight discusses the findings for the main corporate governance measures index and industry and concludes with a discussion of the results.

Chapter nine presents the results for the each of the types of institution; pension, bank, insurance, hedge fund and investment advisor. Then it discusses the implication of the findings.

Chapter ten is the final chapter of this thesis where the conclusion is presented. It firstly shows a summary of the findings, and then it explains how the limitations of the study affects upon the results. Finally, it discusses the implications of this research.
Chapter Two
Theoretical Review
2.0 Theoretical Review
The main theoretical arguments for the study are based upon agency theory (Jensen and Meckling, 1976), agency costs (Bushee et al, 2013) and the limited attention theories (Hirshleifer and Teoh, 2003). It is also argues that the financial crisis was a critical juncture for both institutional investors and corporate governance requirements.

This chapter examines these theories and discusses the corporate governance regulatory landscape and how it has evolved over recent years, in particular the UK Code on Corporate governance and the evolution of the Stewardship Code.

2.1 Agency Theory
The origins of corporate governance research paradigm are from the seminal work of Berle and Means (1932) on agency theory, which focuses on the divorce of ownership and management. Corporate governance has adopted an agency theory approach, generally focusing on resolving agency conflicts between shareholders and management (Jensen and Meckling, 1976). Corporate governance has been described by Armstrong, Guey and Webber (2010 p180) as a “set of contracts that help align the actions of managers with the interest of shareholders”. The issue for shareholders is the asymmetry of information, it is assumed that executive directors have the most information, then non-executive directors, and finally shareholders (Armstrong, 2010). Given this relationship, that corporate governance is designed to help alleviate some of the agency problems, it may be logical to assume that institutional shareholders would prefer to invest in firms with good governance. As, in essence the corporate governance helps firms act in the shareholders’ interests. However, the thesis is not concerned with shareholders per se, but institutional shareholders. Institutional shareholder could be argued to suffer with some of the same issues as directors, specifically their interests may not have aligned with the original principals. In this section there is a discussion on what motivations institutional shareholders may have to tilt their portfolios to firms with good governance, given the context that the institution is another agent.

One of the possible motivations for an institution to choose to invest in firms with good corporate governance, is that good corporate governance can improve a firms’ value
It is argued that institutional investors are motivated to have better performing portfolios and thus choosing firms with good corporate governance would be logical given their performance is judged upon their portfolios financial performance.

Another argument from a similar theoretical standpoint is that institutional shareholders should have a preference for good governance, as the likelihood of creative accounting is less in firms with good corporate governance (Xie, et al 2003; Badolato et al, 2014; Zhang et al, 2007, Farber, 2005). Thus, it could be expected to reduce the risk of an investee firm from being involved in a financial accounting scandal if it had good corporate governance. The motivation for the institutional investor is similar to the reasoning why they would want to invest in firms with better financial performance. Furthermore, institutional investors are could be risk-adverse, as there could be questions raised about the institution not fulfilling their fiduciary duties if the institution has invested in a firm that has been involved in a financial scandal and has had poor corporate governance.

Overall the key arguments for why institutional investors should tilt their portfolio to firms with good governance in the context of agency theory are that good governance improves financial performance and helps reduce risk, which may both damage the institutional investor’s portfolio value.

It is important to not underestimate the complexity of share ownership in modern society, as the investment chain has expanded, making it more difficult to identify the true owners of shares. The following section discusses the issues of agency monitoring costs for institutions and how this may influence their investment choices.

### 2.2 Agency Costs

Agency costs are the costs that arise from the separation of ownership and management (Berle and Means, 1932). Agency costs are the costs associated with managing the conflict of interests between the agents and the principal (Jensen and Meckling, 1976). Institutional investors have a duty to monitor their investee firms (FRC, 2010), however, there are costs associated with the monitoring and engagement with investee firms, these costs are agency costs.
The investment chain for institutional investors could be a significant challenge to their monitoring ability (Wong, 2010). The investment chain is the complexity of ownership, so for example; the principal could invest in a pension, the pension could employ a fund an external fund manager to invest and manage the investments. Thus, the pension fund itself has less contact with the investee firm. The ability of the original institution to actively monitor the investment is impaired. Thus, it could be argued that if institutions choose to monitor the investment actively then there will be significant costs. The UK Government also raised concern that there is fragmented and dispersed share ownership combined with the cost of comprehensive engagement with firms has resulted in ‘ownerless corporations’ as described by Lord Myner to the government (House of Commons Treasury Committee, 2009).

It has is argued that investing in firms with good corporate governance could reduce the monitoring costs of institutions (Bushee et al, 2013). As outlined in the previous section there are clear benefits for a firm having good corporate governance, which include better financial performance (Gompers, Ishii and Metrick, 2003; Core, Guay and Rusticus, 2006; Brown and Caylor, 2006 and Rusticus; Bebchuk et al, 2008), less earnings management (Xie, et al 2003; Badolato et al, 2014; Zhang et al , 2007, Farber, 2005) and fewer value destroying mergers and acquisitions  (Benson, Davidson III, Davidson and Wang, 2015). Thus if the firm had better pre-existing corporate governance then there is less need for active monitoring, therefore reducing the monitoring (agency) costs.

Bushee et al’s (2013) view that good corporate governance can be a substitute for monitoring investment is supported by the diversification of institutions portfolios (Wong, 2010). If the portfolio is diversified this would increase the potential monitoring costs, thus choosing to invest in firms with good pre-existing corporate governance may reduce the potentially high monitoring costs associated with diversification (Wong, 2010).
In addition, if an institution is unhappy with the investee firm there are only a few options:

1. Use shareholder activism to force change;
2. Accept the issues;
3. Sell the shares.

All of these options involve costs, shareholder activism may not be worth the benefit, as this method would require a lot of resources and there are free-rider issues (Del Guercio and Hawkins, 1999). Accept the issues, the issues could affect the company’s financial performance and this might be detrimental to the institutions’ performance. The final option to sell the shares but it could be argued that exit costs are high for institutional investors (taxes, commission) (Edmans and Holderness, 2017). With the issues of resolving conflict, it is a plausible theoretical argument to try and prevent such a situation, it may be advisable to invest in a firm with good corporate governance.

2.3 Limited attention theory

From the arguments presented in the previous section on agency costs, it was outlined that institutions have a number of issues that reduce their ability to monitor their investments, namely the diversification of their portfolios’ and complexity of the investment chain. On account of these issues it will mean there is potentially less time to monitor, thus they could use corporate governance as a proxy for monitoring. However, in order to do this, the institution must dedicate time to understand the firm’s corporate governance.

The limited attention theory states there are limits to investor attention, so information that is presented in an easily understandable, prominent would be incorporated into decisions, whereas when it is not it will not be absorbed (Hirshleifer and Teoh (2003). It might be expected that institutions will undertake limited investigations into the corporate governance of companies they invest in. As the majority of the corporate governance details are presented in the annual report, for example to review the independence of the non-executive directors an investor would to review the section in the annual report about the compliance to the The Code and then compare it to the previous year, to undertake this with a diverse portfolio would increase costs. If Hirshleifer and Teoh’s (2003) theory of
limited attention was applied, it might be expected that institutions would not engage in the detailed examination of corporate governance.

However, this study uses the ISS (RiskMetric) index for corporate governance, which has the largest global presences of all the proxy advisory services (Verdam, 2007). ISS gives each firm a score for overall corporate governance from 1 to 100 and for particular areas of corporate governance (audit, directors remunerations and board structure) a score of 1 to 5. These scores provide a summative measure of the quality of corporate governance. The ISS score was also available from Bloomberg so that institutional investors can easily access.

Due to the ease of access and simplicity of the governance score it is would be incorporated into decisions, as Hirshleifer and Teoh (2003) suggest that this is part of the criteria for decision making. This may be different to other more difficult to access measure of corporate governance.

2.4 Critical Juncture

A critical juncture has been defined as a critical situation that places institutions on a certain path which they find difficult to alter (Pierson, 2004). Economic crises have been described as a critical juncture (Hall, 1993; Braun, 2015). Hall (1993) explains the critical juncture as a policy paradigm as an interpretive framework that is shared by policymakers who outline the problem and the solutions. It is argued that an economic crisis allows an entry point for a new ideas and that the uncertainty of the actors allows new interpretative framework to help make sense of the economic crisis and help them reduce the perceived uncertainty.

The research presents the idea that from 2008 there is a critical juncture for institutional investors and corporate governance. It is accepted however that no matter how severe an economic crisis it does not produce an automatic response, however, crises can alter the balance of power and ideas (Chwieroth, 2010).

Prior to the financial crisis of 2007-8, the UK corporate governance regulations have used a shareholder-oriented perspective (Brennam and Solomon, 2008). Shareholders are the

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1 For example, the audit firm rotation policy, may or may not be included in the annual report, thus a detailed examination of the annual report would be required.

principal and directors are the agent. The focus of research and regulation is on how to improve this relationship and align the goals of directors to shareholders and improve transparency to reduce information asymmetry, and overall to reduce the conflict between the two parties. However, there was a lack of focus on institutional investors and their role in shareholder engagement. It was not until 2010 the UK introduced a Stewardship Code. It could be argued that the financial crisis of 2007-8 was a critical juncture for institutional investors as there was a general shift in policy paradigm, which allowed the Stewardship Code to come into existence. This situation required institutional shareholders to take greater responsibility for their investee firms. Theoretically, it is plausible that this critical juncture increased the pressure for institutional investors as a whole to take more notice of corporate governance, thus increasing their investment with firms with good governance.

The following section discusses the regulatory environment for corporate governance and institutional shareholders.

2.5 The UK Regulatory Environment
Governance systems have been distinguished by the type of ownership structure, with the UK being described as having dispersed ownership, similar to the US (Armour, Deakin and Konzelmann, 2003). This has contributed to the UK framework being primarily focused on the shareholder wealth model (Armour et al 2003). However, in the most recent green paper response to corporate governance reform, the Government have proposed greater stakeholder focus, recommending that there is a public register of companies that have 20% or more votes against the pay, thus strengthening their ability to monitor directors pay. In addition, the Government is going to continue monitoring the level of disclosure of voting by institutional investors (Department for Business, Energy Industrial Strategy, 2017a).

2.6 History of Corporate Governance in the UK
The UK’s corporate governance system has evolved since the early 1990s with a range of quasi-voluntary codes, originating from the Cadbury Committee in 1992, which established the comply and explain principle which has remained. The history of corporate governance regulation in the UK appears to follow a reactive approach, where there is a financial crisis and then the response is a change move in corporate governance. This was the case with
the Cadbury Report (1992) which followed the Maxwell and Polly Peck crisis. In 1995 the Greenbury Report focused on directors’ remunerations, and then the Hampel Report in 1998 amalgamated the Cadbury and Greenbury reports to form the Combined Code (1998) (Department for Business, Energy Industrial Strategy, 2017b). Companies must comply with ‘The Code’ or explain in their annual report the reason for non-compliance. The Hampel Committee was established to review the extent to which the objectives of the Cadbury and Greenbury Reports were being achieved (FRC, NDb).

The Combined Code was revised in 2003 Higgs Report (2003) on Non-Executive Directors; Tyson Report (2003) on the diversity of the board, Smith Report (2003) focus was on the audit committee, these were in response to Worldcom and Enron. In 2003 the revised code included changes to the board composition, where it was recommended that:

- at least half of the board (excluding the Chair) be comprised of non-executive directors;
- the non-executives should have a meeting alone at least once a year to discuss company performance;
- the non-executive directors should have knowledge, time, experience and skills to carry out their role with due diligence;
- there should be a senior independent director and shareholders should be able to express concerns too.

The 2006 Combined Code was adjusted to incorporate the findings of the Turnbull Report 1999 on internal controls, which was later reviewed in 2004-5. The 2006 Combined Code made the following changes:

- allow the chair to sit on the remunerations committee when they are independent at appointment;
- allow shareholders who are voting by proxy to be able to withhold their vote and require publication of the proxies lodged at the AGM;
- for the provisions of the code that required the companies to “make information available (provisions A4.1, B2.1 and C3.3)” this information should be on the website;
- set out the disclosure requirements in the listing rules (FRC, 2006).
The changes in regulations in 2006 Combined Code improved transparency, for example allowing proxy shareholders’ to be able to withhold their votes, this improves the transparency of voting and helps gauge the shareholder engagement.

There was a further review of the Combined Code in 2008 this reflected new EU requirements relating to Audit Committees and corporate governance statements. The changes to the code are:

- allow an individual to chair more than one FTSE 100 company;
- for companies below the FTSE 350, allow the company chairman to be a member, but not the chair of the audit committee when the chair was independent at the appointment (FRC, 2008).

The changes to the code were fairly minor in 2008, this may seem somewhat surprising given the economic conditions at the time. However, the review of the Code began in early 2007, before the financial crisis occurred. The major changes to the Combined Code were in 2010, after the ramifications of the financial crisis were more apparent.

In 2009, the Chancellor of the Exchequer requested a review of corporate governance following the global financial crisis; this resulted in the Walker Review 2009, which was incorporated into the newly named ‘The UK Code on Corporate Governance’ in 2010. The changes to the code were:

- the chair is responsible for leading the board;
- the board is responsible for the long-term success of the company;
- the annual election of all directors;
- the chair is responsible for ensuring an openness in the culture;
- the non-executive directors are responsible for developing strategy;
- the board should have a balance of skills, experience, independence, and knowledge of the company;
- directors should have time for their duties;
- a diversity of the board should be considered when making appointments;
- internal controls are covered by the board’s responsibility for risk;
the chair is responsible for ensuring that all directors are made aware of shareholders’ concerns (FRC, 2010b).

From business leader’s perspective the biggest issue was the annual election of directors, because of the myopia (Sanderson, Burgess and Masters, 2010), as it would mean that directors could be incentivised to meet short-term targets in order to maintain their directorship, rather than following longer-term strategies that could be value destroying in the short-term. Annual election was expressed as a concern mainly by institutional investors and their representative bodies (FRC, 2010b).

The UK Code on Corporate Governance has since been reviewed in 2012, 2014 and 2016. Currently, the regulation on corporate governances for UK companies originates from the Companies Act 2006, Listing Regulation, Takeover Panel, The Code 2016 and the Stewardship Code 2012 (Solomon, 2013). The main area of focus for the thesis is Corporate Governance and Institutional investors, thus this section shall focus upon ‘The Code’ and The Stewardship Code. The UK and the US have an Anglo Saxon style system, which places emphasis on the role of the owner in governing companies. However, the UK has traditionally adopted a less legalistic approach than that of the US. The Code is a set of principles on corporate governance that has evolved from the original Cadbury Code of 1992, however, the principle of comply or explain has remained. The premise behind comply or explain is that that one size does not fit all. However, since the financial crisis there has been growing pressure to move away from this style of corporate governance worldwide and a move to government interference in corporate governance, this shall be discussed in the section on a shift in practices.

In mid-2009 the Government criticised auditors’ role in the financial crisis, as the audit process failed to highlight the emerging problems in the banking sector, and an area of key concern was the lack of independence of the auditors, in particular, non-audit services (House of Commons Treasury Committee, 2009). After these criticisms the EU released a green paper on audit policy in October 2010, the green paper lead to the EU audit reforms in 2014, where there were restrictions on the type of non-audit services, the amount of non-audit services and the audit tenure restrictions (European Commission, N.D). Following
the financial crisis, there was a clear regulatory shift in auditing with increased regulation, as the trust in the audit profession was hampered.

2.7 The Stewardship Code
This section discusses the regulatory development that effects institutional investors. It firstly considers the Hampel Report (1998) and Myners Review (2001) and proceeds to examine the development of the Stewardship Code.

Within the Hampel Report (1998) pension funds, were targeted and it was suggested that pension funds should take a longer-term approach, as they often delegated their authority to fund managers and then put undue pressure on fund managers to maximise their short-term gains (Hampel, 1998).

Pension funds are the largest group of institutional investors. The trustees of the fund are the owners of the hold the shares in trust for the beneficiaries of the scheme, so this is not a standard form of ownership. In these cases, the actions of the trustees and their relations with the fund manager have an important bearing on corporate governance. It could be that trustees put fund managers under undue pressure to maximise short-term investment returns, or to maximise dividend income at the expense of retained earnings; and that the fund manager will, in turn, be reluctant to support board proposals, which do not immediately, enhance the share price or the dividend rate. The Myners Review (2001) stated that evidence to support this view is limited (particularly in relation to dividends), but it urged trustees to encourage investment managers to take a long view, as pensions are long-term holdings.

The Myner’s Review in 2001 of institutional investment in the UK (HM Treasury, 2004), highlighted the key problems:

- Lack of skills of decision makers;
- Lack of decision making structures;
- Incentives causing misalignment with the objectives of ultimate investors.

The review states that pension fund trustees are central stage and as they might not have the expertise or resources to make these decisions and the pension fund trustees often rely
on investment consultants. This is mainly done through a small group of proxy advisors who have a narrow range of expertise and little room for specialisation and the firms’ performance are not measured. Myners (2001) recommended that pension fund trustees adopted a voluntary code where the pension fund trustees complied or explained to whether they had applied a series of principles:

- clear transparent objectives and responsibility structures;
- specialist expertise for decision makers;
- performance measurement of advisors, managers and trustees;
- trustees should engage with investee companies where it is in their interest;
- the investment strategies and returns should be reported annual

(Myners, 2001; HM Treasury 2004).

The Myner Review (2001) believed that these proposals will help increase intellectual competition amongst pension fund trustees, which will lessen herd like behaviour and more varied investment approaches should be used.

The Stewardship Code was developed from the work of David Walker and the Institutional Shareholder Committee (ISC)\(^3\) code on responsibility on institutional investors (Solomon 2013). The ISC statement of principles was developed in 1991 and has evolved over the years. In response to the Myners Review (2001) ISC made changes to its statement of principles. In the ISC new principles 2002 it outlined the responsibilities of institutional investors, as they required institutions to state their policy on shareholder activism and how it is carried out. The tone of the ISC principles changed, as in the 2007 statement of principles no longer referred to ‘activism’ but ‘engagement’. Then in the 2007 ISC Report, the requirements for institutional shareholders were increased, by stating that their voting policy should be disclosed and reviewed regularly. Finally, in late 2009 the ISC issued the ISC

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\(^3\) ISC members in 1991 were the Association of British Insurers; the Association of Investment Trust Companies; the British merchant bank and security association, the National Association of Pension Funds; and the Unit Trust Association and in 2005 they were Association of British Insurers; the National Association of Pension Funds; and the Investment Management Association (Institutional Shareholders’ Committee, 2007, p1)
code on the responsibilities of institutional investors. This code was then incorporated into the Stewardship Code (Mallin (2009)).

The Walker Review (2009) was in response to the financial crisis. It concluded that the Combined Code was fit for purpose. The weakness in board effectiveness was more attributable to behaviour patterns than to organisation, with the major problem of lack of challenging executives before decisions were taken regarding risk and strategy. Boards should allocate more time to risk management than they have done previously, as this contributed to the failings. Institutions should engage more effectively with investee companies than they have in the past. Finally, there needed to be improvements to remuneration policies.

Walker (2009) recommended the implementation of a UK Stewardship Code on the conduct of institutional investors. These recommendations were acted on and the FRC published the first Stewardship Code in July 2010. The Code highlights the need for institutional investors to take a more active role in the monitoring their investments in which they invest in. The UK Stewardship Code states that institutions should ‘comply or explain’; any institutions that comply will have their names published on the FRC’s webpage. The general principles of the Code are disclosure of the institutions monitoring activities and the internal policies on their monitoring. As mentioned previously there have been alterations to the Stewardship Code in 2012 to include proxy advisors.

The idea that stewardship is important has started to gain global popularity with 21 other countries implementing their own stewardship codes (Manifest, 2017).

The introduction of a formal code for institutional investors highlights the growing demand that institutional investors take their fiduciary duty more seriously and suggests that there has been some neglect in their duty to engage in the investee companies’ corporate governance. Their engagement is essential with the Anglo Saxon ownership structure, which relies upon the dispersed ownership groups to take action and effectively monitor the investee firms. However, is this light touch, self-regulation enough to satisfy the principals in the post financial crisis world? According to the Edelman Trust Barometer (2017), the UK’s trust in institutions (including, Businesses, Government, Media and NGO) is evaporating, with growing dissatisfaction. The UK government believe the decrease in trust
in UK business is partially because of excessive directors’ remunerations (Department for Business, Energy Industrial Strategy, 2017b p8). There is growing discord amongst governments across the world that are moving to methods that are more draconian to monitor corporate governance. The change in regulatory practices of corporate governance is going to be discussed in the following section.

2.8 Summary
The chapter has defined the theoretical framework of the study, by presenting a discussion into agency theory, agency costs, limited attention theory and the critical juncture. The regulatory environment has changed over the years and there has been a significant regulatory shift after the financial crisis, with the greater empowerment of shareholders over directors’ remunerations. There has been increased pressure on institutional investors and firms to improve their practices, with the formalisation of the institutional investors duties in the first Stewardship Code (FRC, 2012) and regulatory changes that require greater audit independence (European Commission, N.D).

Overall it has been argued that institutions should be motivated to invest in firms with good governance, as it reduces the monitoring costs involved in institutional ownership and the complexity of diverse portfolios and lengthy investment chains. In addition, it has been argued that the motivation of institutional investors should have changed as the financial crisis was a critical juncture for institutional shareholders and corporate governance requirements.

The proceeding chapter reviews the literature on institutional shareholders. It examines the following types of institutional investor; pension funds, banks, insurance, hedge funds and investment advisors. It discusses the literature on the use of proxy advisory services and the levels of shareholder activism and any influences upon the activism.
Chapter Three

Institutional Shareholders
3.0 Institutional Shareholders

Institutional shareholders are professional asset managers, who act on behalf of a principal. According to the Stewardship Code (2012) institutional investors include pension funds, insurance companies, investment trusts and other collective investment vehicles. For the purpose of this research, the primary focus is on the following groups:

- Pension Funds
- Banks
- Insurance
- Hedge Funds
- Investment Advisors

In this chapter, these groups are defined and discussed. The chapter also presents the literature on the use of proxy voting advisors and how institutional investors use their services in section 3.3. Shareholder activism is examined in detail, there is a review of the literature on how shareholders have conflicts of interests, the level of activism and how activism can influence a firm in section 3.4. The chapter then explores the research on the level of shareholder protection in section 3.5 and finally the institutional shareholders trading patterns in section 3.6.

The Table 1 shows the breakdown of UK share ownership from the Office of National Statistics (2012), it can be seen that the largest of share ownership group in the UK is from outside the UK, with the majority of these are from North America accounting for almost 56% of this group. In the 2010 report on share ownership, it is stated that 40% of the shares in the UK stock market were from pooled investments (Office of National Statistics, 2012), this is an indication of a complex investment chain in UK stock market.
### Table 1 Beneficial ownership of UK shares by value in percent

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<tbody>
<tr>
<td>Rest of the world</td>
<td>30.7</td>
<td>41.5</td>
<td>41.2</td>
</tr>
<tr>
<td>Insurance companies</td>
<td>21.6</td>
<td>13.4</td>
<td>8.6</td>
</tr>
<tr>
<td>Pension funds</td>
<td>21.7</td>
<td>12.8</td>
<td>5.1</td>
</tr>
<tr>
<td>Individuals</td>
<td>16.7</td>
<td>10.2</td>
<td>11.5</td>
</tr>
<tr>
<td>Unit trusts</td>
<td>2</td>
<td>1.8</td>
<td>6.7</td>
</tr>
<tr>
<td>Investment trusts</td>
<td>1.3</td>
<td>1.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Other financial institutions</td>
<td>2.7</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Charities, church, etc.</td>
<td>1.4</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Private non-financial companies</td>
<td>1.4</td>
<td>3</td>
<td>2.3</td>
</tr>
<tr>
<td>Public sector</td>
<td>0.1</td>
<td>1.1</td>
<td>3.1</td>
</tr>
<tr>
<td>Banks</td>
<td>0.6</td>
<td>3.5</td>
<td>2.5</td>
</tr>
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### 3.1 Costs of Institutional Ownership

Agency costs arise from outside ownership, so if a company is 100% owner-managed there would be none (Jensen and Meckling, 1976). The Concentration of ownership leverages up legal protection (Shleifer and Vishney, 1997). Minority interest shareholders need to spend more on monitoring management behaviour than the majority shareholder, as minority shareholders’ interests are not aligned with the majority shareholders (Jensen and Meckling, 1976).

The UK has a dispersed share ownership similar to the US, however, the majority of the world does not have such dispersions (Morck and Steier, 2005). For example, Germany has concentrated share ownership. This has a beneficial effect on corporate governance, as it is found that firms with large shareholders were associated with higher director turnover (Franks and Mayer, 1994), demonstrating their power. Japan also has concentrated ownership and firms with large shareholders reduce discretionary spending, such as advertising, R&D and entertainment expenses, by Japanese management (Kaplan and Minton, 1994; Kang and Shivdasani, 1995)
There are costs attached to having large investors as they have their own interests, so what they want may be at the expense of other investors or employees. Managers could attempt to divert cash flows to themselves by paying themselves special dividends and no other investor, or exploiting special relationships with other companies that they control. There seems to be a link between large voting premiums and the exploitation of minority interest. Shleifer and Vishney (1997) suggest that poor corporate governance and minority interest protection in countries like France, Italy and Germany mean there is a smaller general public ownership. However, this is not the case in Japan as they have higher general public share ownership and low investor protection, Shleifer and Vishney (1997) explain this by arguing that this may be because of the cultural differences, which result in the Japanese being less reliant on regulation on minority interest, where Japanese institutions have low powered incentives or reputations and implicit contracts in Japan.

3.2 Types of Institutions
This section presents the different types of institutional investors that have been examined in this study.

3.2.2 Pension Funds
A pension fund is a fund that is there to facilitate and organise employees/companies’ pension contributions. It is a long-term investment. At the end of its term, people/companies expect to receive a pension at the end of their employment. Pension was once the largest institutional investor in the UK stock market (Golding, 2003 and ONS, 2016).

Pension fund ownership has dropped from 15.7% in 2004 to just 3% in 2016, with the biggest drop being between 2008 (12.8%) to 2010 (5.6%) (Office of National Statistics, 2016). This is a drop which is due to pension funds moving away from UK equities to overseas equities and gilts and fixed interest investments (The Purple Book, 2010). According to Cheffins (2008) the general fall in ownership, is partially contributed to pension trustees’ anxiety about the rising life expectancy and the liability that accompany this and in 2005 the companies sponsoring these plans had to show the liabilities on their balance sheet for defined benefit pension schemes, with the pension industry showing at a deficit, rather than a historical surplus (Tilba and McNulty, 2013). The ownership concentration of
pension funds has also decreased so that it is easier for pension funds to dispose of their investments without putting additional downward pressure on the shares (Cheffins 2008).

There are different types of funds; individuals can choose a pension fund to invest and the institution will act on their behalf; employees and employers contribute towards a company pension fund that is administrated by an outsourced pension fund; or in a larger organisation, the company can choose to administer the employees’ pensions (Myner Review, 2001).

Most trustees are responsible for deciding the investment strategy of the pension fund unless they are wholly insured funds. The trustees should consider the type of investments, the risk profiles, and suitably of the funds and their ability to meet future liabilities. The fiduciary responsibility of pension fund trustees is to choose investments that are of the best financial interests of their members (Pensions Regulator, 2007). Most pension trustees must draw up a statement of investment principles stating what they are going to do. This should include their policy on the following according to Pension Regulator, 2007:

“choosing investments; the kinds of investments to be held, and the balance between different kinds of investment; risk, including how risk is to be measured and managed, and the expected return on investments; realising investments; the extent, if at all, you take account of social, environmental or ethical considerations when taking investment decisions; and using the rights (including voting rights) attached to investments if you have them.”

Pension funds measure performance in quarters; this is odd as the nature of the investment is long-term (Clarke and Hebb, 2004). Fund managers are measured against either their peers or an index (Golding, 2003) in quarterly meetings and tend to look at the last 3 to 5 years’ performance (Myner, 2001), this is a fairly short-term perspective, given a pensions nature, even though according to Myner (2001) fund managers believed that good short-term performance will equal good long-term performance. If the pension funds do not deliver, there can be legal and financial ramifications. In 1998, Unilever pension fund suffered a massive 10.5per cent underperformance against its benchmark in 1997. Unilever sacked Merrill Lynch Investment Management investment and they wanted damages of £100 million for alleging negligence. In 2001, a settlement was agreed for £70 million. It is
unusual odd that Merrill let the case progress and did not settle out of court, as it was found there were lax controls and managers were allowed to take risks (Golding, 2003). Pensions are usually passively managed (Myner, 2001). Fees are either set on an ad valorem basis (the greater the growth in the portfolio the greater the fee) or a benchmark and outperformance target is set (Myner 2001).

When the trustees of a pension are selecting fund managers, they would normally recruit an investment consultant to advice on this. One of the measures of success the consultants will look at will be the level of dispersion. This is the difference between the returns on each fund the fund manager manages, a high dispersion is considered bad (Golding, 2003).

The investment chain is long in pension funds, as the majority of small-medium pension funds outsource their asset management (Ambachtsheer, Fuller and Hindocha (2013). The investment chain for pension funds is long, as can be seen from figure 4 below:

**Figure 4 Investment Chain**

Retirees/Current employees → Pension Trustees → Investment Consultant → Fund of Fund → Asset Manager → Company

Source: Wong (2010), Why Stewardship is proving elusive for institutional investors? The Harvard Law School Forum on Corporate Governance and Financial Regulation, Figure 3, p104.

This shows that there are potential issues for pension funds to exercise necessary control, as the length of this investment chain could reduce the sense of responsibility the pension funds have (Wong, 2010).

Pension funds are described as pressure resistant institutional investors (Brickely, Lease et al, 1988), as they do not have a business relationship with their investee firms and are unlikely to be pressured by the investee firms. This could suggest that pension firms are in an active position to force change, thus would not necessarily need to invest in firms with pre-existing good corporate governance. However, the counter argument is that pension funds have a server investment chain (Wong, 2010), which may hamper their desire to seek change despite their ability to force change because of their lack of business relationships.
3.2.4 Banks
For the purpose of this research, banks are defined as “a company in which a majority of their revenue is derived from banking services including commercial and personal” (Bloomberg, 2013). Commercial banks are institutions that take deposits from customers and give loans to individuals and businesses. In addition, they also provide underwriting services, investments and leasing operations (Kidwell, Blackwell, Whidbee and Peterson, 2006). Investment (commercial) banks often offer the services of portfolio management services and manage investment vehicles (Arnold 2010). There is evidence that banks tend to prefer to invest in companies with A+, A and A- ratings by S&P in the US in 1988, and their preference for A grade stocks is stronger than other institutions (Del Guerico, 1996). Del Guercio find there is a positive correlation coefficient between S&P ratings and market capitalisation; this means that it is difficult to determine if the reason for investing is the size or the rating. Del Guerico acknowledged that Banks might just want to invest in larger companies possibly because of indexation or liquidity of the stocks.

Banks have been classified as ‘pressure sensitive’ institutions because of the potential relationship they have with firms they invest in, as there is a potential business relationship and because of this, may not act as objectively or as forcibly as they might do if this possible business relationship did not exist (Brickley, Lease et al. 1988; David, Kochhar et al. 1998, Johnson, Schnatterly, Johnson and Chiu, 2010).

3.2.3 Insurance
The insurance market consists of long-term life insurance funds, insured pension scheme trusts that are held by one insurance company and have a guaranteed level of returns (ABI 2010). Virtually all well-known UK life insurance firms have an investment management subsidiary which manages the investment of the vast majority, if not all of the group’s life and general insurance funds (Stapledon 1996).

The original business of life insurance is a long-term investment with reasonably predictable cash inflows and outflows. Thus, insurance funds took a longer-term perspective, in absence of pressure from unaware and presumable unconcerned policyholder for performance (Golding, 2003). Life insurance funds behave like pension funds, cash inflows and outflows are reasonably predictable. In principle, insurance companies hold a higher proportion of their assets in fixed interest than pension funds, due to the need to match specific, known
pay-outs in their life funds with gilts. Life companies historically favoured property. Insurance funds can take a longer-term perspective, in absence of pressure from unaware and presumable unconcerned policyholder about performance. However, all this only applies to the original business of life insurance – to their life funds. More pressure to have transparency performance record has altered the balance of funds under management. Therefore, on average it does not differ that much from pension funds. Insurance funds tend to invest their own capital, unlike the pensions who often use investment advisors (Badrinath and Wahal, 2002). Despite the similarities to pension funds, insurance firms have been described as pressure sensitive investors, as they may potentially have relationship with the companies they invest in as they may want to sell their products to the companies (Brickley, Lease et al. 1988; David, Kochhar et al. 1998, Johnson, Schnatterly, Johnson and Chiu, 2010), whereas pension funds are described as pressure resistant (Brickely, Lease et al, 1988). This is a key difference, as this relationship with the investee firm, may alter the approach the insurance firm would deal with corporate governance issues.

3.2.1 Hedge Funds
According to the Financial Conduct Authority, hedge funds are a type of alternative investment fund that can invest in a variety of assets and can use a wide variety of investment strategies ranging from highly concentrated portfolios to complex strategies that require a high degree of turnover (Financial Conduct Authority, 2015). According to the survey, the majority of new funds into hedge funds comes from other institutional investors (Financial Conduct Authority, 2015). In the US hedge fund activism became very popular in the 2000s and the hedge funds became a powerful group in influencing corporate governance (Amour and Cheffins, 2012). Briggs (2007) argues that hedge fund activism used “wolf pack” tactics and become a positive influence over corporate governance. “Wolfpack” tactics are when there is a coordinated effort to seek change, as the lead activist tips off other institutions whom they have a prior relationship with and then these institutions invest and join in the activism (Wong, 2016). The changes that the coordinated hedge funds sought, ranged from maximizing shareholder wealth to the removal of directors from the board (Wong, 2016).

Boyson and Mooradian (2011) examined hedge fund activism from 1994-2005, find that the active hedge funds tended to target firms that are relatively small, have poor recent stock
performance and low growth opportunities, with a large cash position, high book to market
and low Tobin’s Q, but strong operations performance such as high return on assets and
cash flows as a percentage of assets. From Boyson and Mooradian (2011) data it is evident
that out of the 365 changes sought by the hedge funds 205 were in relation to corporate
governance. This helps provide evidence that active hedge funds are concerned with the
corporate governance of the firms they invest in. Boyson and Mooradian (2011) find that
corporate governance reforms lead to both a short-term improvement in share
performance and long-term in operating performance providing evidence that corporate
governance is related to firm performance.

Bratton (2007) investigates the success of active hedge funds from 2002 to 2006; active
hedge fund is defined by whether the hedge fund is classified as active by the press, based
on the funds’ demands, their tactics and results of their interventions. Bratton (2007) finds
that the activists’ targeted good firms with bad managers, with common features of poor
corporate governance identified as; staggered boards, lack of independent directors, poison
pills and excessive share option plans and other poor incentive schemes. However, these
elements were not the only reason for the activism, as Bratton explains that value is the
main aim of hedge funds and governance is more of a tactical role, as it adds credibility to
the hedge funds and is argued that good governance reduces agency costs that will help
improve performance.

activism is measured by the submission of the Schedule 13D and 13D/A. The Schedule 13D is
required by the SEC when an investor owns more than 5% within 10 days of reaching this
limit for a publicly traded company with the intent to influence the firm’s management and
13D/A is the amended version of this form, where there are changes in their intent
influence. In the study period, Klein and Zur (2009) find that the most frequently cited
reason for submitting the 13Ds (41 of the 151) is to change the board of directors’
composition. It is shown that the submission of the 13D Schedule the market reacted
positively with significant positive abnormal returns of 12.60% around the date of the filing
of the 13D when the reason for action is changing the board of directors. In addition, hedge
funds had a very good success rate over the study period with a 75% success rate in wanting
to change the companies’ corporate governance. Bebchuk, Brav and Jiang (2015) found
similar results to Klein and Zur (2009) when reviewing the effect on long-term performance of hedge fund activism from 1994 to 2007, with it showing to have a positive effect on Tobin’s Q in the following five years compared to its industrial peers, however Bebchuk, Brav and Jiang (2015) did not dissect and analysis the effect of the type of intervention.

3.2.5 Investment Advisors

“Investment entity that manages investor’s assets in return for a fee. This service includes investment recommendations, securities analysis and management” (Bloomberg, 2013). An Investment advisor is an American term and is determined by Investment Act 1940 and an investment advisor must register with SEC if their turnover is above $100m. Despite this study being UK based, the institutions have been classified under the type of investment advisor, as Bloomberg uses this as a classification. Given the globalisation of investments, UK institutions would have had to register under SEC because of their investment overseas. Also, according to The Office of National Statistics (2012) over 40% of the investments in the UK are made by overseas firms, and the breakdown shows that around half of those are from North America, therefore around one quarter of UK shares are owned by North American firms, thus a lot would be subject to US regulations. Another reason for using the category ‘Investment Advisor’ is that it makes the research more comparable, to prior research using US data.

Investment advisors include unit trusts (mutual funds). A unit trust is an open-ended investment that can be bought as a unit and this gives the investor a basket of investments. They are considered to be a medium to long-term investment because of the set-up charges (Arnold 2004). Although many individuals own unit trusts, they are largely/completely owned by management companies or an associate company (Stapledon 1996).

The evidence seems to indicate that unit trusts prefer to invest in riskier stocks with high volatility (Falkenstein, 1996) and lower grade stocks than banks do (Del Guerico, 1996). Unit Trusts (mutual funds) tend to have generally below 1% ownership in shares, the managers are rewarded for good share price performance, and corporate governance alterations may produce better returns in the long run, but may not result in higher returns for the fund managers’ performance review periods (Belinfanti, 2009)
Solomon and Solomon (1999) provide evidence to suggest that unit trusts are neutral towards shareholder activism even though the majority (72% surveyed) have a person responsible for corporate governance issues in investee companies (Solomon and Solomon 1999 pp293). On the positive side of corporate governance, unit trust managers were in favour of disclosing their voting policies and they were in favour of long-term relationships with the investee companies (Solomon and Solomon (1999). Solomon and Solomon’s survey sample consisted of 95% of managers from the same six unit trusts, thus limiting the generalisability of the results. Contradictory evidence is that Chou, Ng and Wang (2007) found that:

“Funds with good governance practices tend to monitor the Corporate Governance actives of a firm more by voting against manager’s proposals when such proposals are viewed not in the best interest of their funds. On the other hand, such governance issues play a less significant role in the voting decision of funds with bad governance practices” p22-23.

The evidence of Chou et al (2007) could be the case for not just mutual funds, but other types of investment advisor.

Chou et al (2007) findings could indicate that the funds that Solomon and Solomon surveyed did not have very good governance themselves. Mutual funds exercise a substantial amount of their voting power with the use of proxy voting advisors, where ISS advised 34 of the top US mutual funds (Belinfanti, 2009), this could account for why they appear to be actively opposing the votes. Given mutual funds tend to have a short-term investment, small stake ownership, the resources to adequately monitor each investment would make it more profitable to use a proxy agent. In the US, since 2003 the SEC has required Mutual Funds to disclose their voting activity, thus increasing the demand for the use of proxy agents. Therefore, when examining Unit Trusts/Mutual Funds shareholder activism, it could be measuring the proxy agents’ views, not the actual fund. The general view from academics, policy-makers, mutual funds and proxy agents is that it would be wholly impractical for funds to research every company they invested in without increasing costs substantially (Belinfanti, 2009).
3.3 The Proxy Voting Advisor

Proxy voting advisors are not new. ISS, the proxy voting market leader, was established in 1985 (Belinfanti, 2009), PIRC in 1986 (PIRC, ND) Manifest and 1995 (Manifest, ND), however, their increased popularity has been mostly since the early 2000s after the failures of Enron and WorldCom. In the US, the growth has been mainly attributed to the SEC requiring mutual funds to disclose their voting annually in 2003. This led to a swell in demand for proxy agencies in the US (Belinfanti, 2009).

It is commonplace for institutions to employ a proxy voting advisor to review its investments’ corporate governance and offer advice on how to vote at the AGM. Large proxy voting advisors include Manifest, PIRC, ISS, Glass, and Lewis. With the increasing international diversity of investments by institutions, the greater the use of proxy advisors and corporate governance ratings (European Commission, 2011, Verdam, 2007). ISS is a US proxy voting advisor and has the largest global presence and in 2003 ISS joined forces with NAPF in the UK which resulted in the RREF (Research Recommendations and Electronic Voting), where RREF recommendations are based upon NAPF’ governance policies (Verdam, 2007). The UK market leader is PIRC that specialises in proxy advice (Verdam, 2007).

There can be a conflict of interest between the proxy voting advisors and their clients, as they may “provide services to both to the investor and to the issuer or the proxy advisor is owned by an institutional investor or by a listed company to whom, or about whom, the proxy advisor may be providing advice.” (EMSA, 201, p9). However, it is only whom ISS provides both governance consultancy and proxy advice services (Belinfanti, 2009; Weterings (2010), whereas Glass Lewis, Proxy Governance, Egan-Jones and GovernanceMetrics International only provide proxy advice services (Weterings (2010). The proxy agents bare none of the risk associated with their recommendations, the risk is borne by the institution that employed them. Belinfanti (2009) argues that “Under classic agency theory, this separation of decision and risk should not be tolerated without effective control procedures” p406. This viewpoint demonstrates why there have been modifications of the Stewardship Code (2012) to encompass proxy agents. The proxy advisory services have no fiduciary duties towards their corporate clients (Belinfanti, 2009).
There could be some competition issues within Proxy Agencies, as at the present state the industry shows signs of an oligopoly (EMSA, 2013). The role of proxy agencies is questioned in the Green paper on corporate governance in 2011 (EMSA, 2013), this demonstrates the importance of the role in stewardship the proxy advisors have.

Verdam (2007) cites research from SEC Business Roundtable December 2003 that “40 per cent of votes cast by institutional shareholder for US-listed companies for shares in US-listed companies are in conformity with ISS’ recommendations” p5. In addition, 15-20% of ISS’ clients automatically vote with ISS recommendations. Verdam (2007) highlights the practicalities of voting against the ISS recommendations, firstly the institution has paid for their advice, so why would they vote against ISS recommendations and in addition there is the cost of extra research involved in voting against and secondly there is the possibility of having to explain to the beneficiaries why they went against ISS recommendations. In essence, the view is that if an institution employs an agent, they are likely to use the advice they pay for. Choi, Fisch and Kahan (2010) provide a different view; from their tests, it is found that ISS do have an influence over the voting for reappointment of directors. However, not as much as much as commonly believed, were from various tests on 2005 and 2006 data on directors’ nominations for S&P 1500 companies the ISS influenced 6%-10% of shareholder votes. Where the other proxy agencies examined: Glass Lewis, Egan Jones and Proxy Governance had less of an influence. Larker, McCall and Ormazabal (2012) found similar results with ISS influencing 8.84% (8.40%) mean (median) for say on pay when controlling for other variables. However, both Choi et al (2010) and Larker et al (2012) examined the means of voting for a proposal after the voting agency issued a negative vote, as can be seen in Table 2:
TABLE 2 VOTING PROPOSALS

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<tr>
<td>ISS</td>
<td>76.14% (ISS For 96.44%)</td>
<td>68.68% (Positive vote from ISS 93.4%)</td>
</tr>
<tr>
<td>Glass Lewis (GL)</td>
<td></td>
<td>76.18% (Positive vote from GL 93.7%)</td>
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The proxy advisory service industry indeed has signs of an oligopoly with a limited choice of advisors, and most research demonstrates this by studying only ISS, however, from Choi et al’s (2010) research, it is found that there were differences in the recommendations given. For example, when recommending for voting against director nominations, Glass Lewis was the most prolific with 18.8% of their recommendations for withholding vote compared to, ISS 6.8%, Proxy Governance and Egan Jones 11%. Although Larker et al (2012) state that the say on pay recommendations ISS and Glass Lewis in 79% of cases for 2011 their recommendations coincided.

There has been some concern about the transparency and the general quality of proxy advisors’ advice and the EC raised the question of whether there should be regulation over proxy advisors (European Commission, 2011). However, the final proposals by EMSA (2013) stated there is no need to overburden proxy advisors with regulation, but suggest that there should be a uniform practice. The EMSA suggest that there should be a soft law where there should be a ‘comply or explain’ standard for proxy advisors. The redrafted Stewardship Code (2012) has placed proxy agencies as a part of the Stewardship Code’s remit and institutions need to state how the proxy agents’ advice is used, however, this move has been criticised by ISS founder Bob Monks (Sullivan, 2012).

It could, however, be argued that the market should be able to effectively monitor the proxy agents so that only the best survive. Currently, ISS is the market leader in the US and PIRC for the UK, it could just be a case of the emperor’s new clothes where the institutions are just using them as a mark of quality because they are the market leader, and not really examining their recommendations. In the US there is very little competition against ISS,
except for Glass Lewis, although unlikely to pose a threat to ISS (Belinfanti, 2009). Both PIRC and ISS were the first proxy agents in their country of origin, both benefit from the consumer switching costs, thus also limiting the possibility of market forces checking the agents (Belinfanti, 2009). Certainly, for ISS there is very limited disclosure on the governance scores, which makes it very difficult to effectively monitor.

Overall, the role of the proxy advisor makes the traditional view of agency theory from Berle and Means (1932) more outdated. In the current environment of corporate governance and corporate responsibility it is difficult to assess the effectiveness of institutions engagement, thus highlighting the need for further research into institutions and their appetite for good governance of the investee companies, especially in the wake of the recent financial crisis, where the lack of governance and monitoring of internal controls is present (Walker, 2009). It is clear that financial institutions use proxy agencies for corporate governance, as it makes their choices easier. This argument supports the theory that shareholders have limited attention (Hirshleifer and Teoh, 2013) and use simple easier measures of corporate governance to feed into their decision making on corporate governance.

3.4 Shareholder Activism
This section presents the literature on shareholder activism, by first outlining the rights of the shareholders in the UK, then the following sections are broken down into the following sections;

- conflicts of interests, which outlines the conflicts of interests the institutional investors have that influence their monitoring;
- levels of actives, which examines the different levels of shareholder engagement;
- activists influence on corporate governance, this section examines how effective shareholder activism;
- block-ownership, this part discusses how activism is influenced by the level of institutional ownership;
- activism and financial performance, in this section the literature is presented on how and if the financial performance is influenced by activism.
In 2003 shortly after the Myners Report (2001), there was an increase in confrontations between institutions and directors (Cheffins 2008). Cheffins (2008) cites that directors felt that institutions were acting more like trade unions in the sense of being ‘back seat drivers’ and interfering with the direction of UK large companies. It is unclear if this attitude still persists with the 2012 so called ‘Shareholder Spring’ now being questioned by KPMG’s recent report that states “shareholder dissent on pay was lower in 2012 than 2011 (KPMG, 2012)

The influence shareholders can have on a firm depends partially on their voting rights. The UK requires shareholders to be given 21 days’ notice for an AGM. It can be longer if permitted by the article of association. Shareholders with above 5% of the voting rights can call a general meeting. Shareholders can require the company to circulate the resolutions to be voted on if the shareholders represent 5% or more of the voting shares, or 100 shareholders have a right to vote can request this. The company must allow shareholders to vote by electronic means when the firm is on the main UK stock market. Therefore, it is possible to appoint a proxy through a website (Summerfield and McKenzie, 2015)

Even when voting occurs, it is difficult for shareholders to get their way as according to Black (1992) corporations have many strategies, such as:

- Combining the vote, so the shareholders have one vote on two areas, an example was where firms combined a popular area, such as a dividend increase with a less popular area.
- The shareholders give 5 months’ notice to directors of proxy when management only give shareholders 1 months’ notice for proxy votes.
- They can give workers shares, who generally vote in favour of directors
- The costs are high for shareholders and give little benefit, but smaller shareholders benefit from this. The more the shareholders own the more likely they are to be active

3.4.1 Conflict of Interest
Conflicts of interests can arise between institutional investors monitoring abilities of their investee firms. As there can be conflicts of interest between institutional investors and the investee firm. The potential sources of conflict can come from the pressure in which the
investee companies can exert over their institutional shareholders, as there can be the possibility of director interlocking and threats to potential and/or current business relationship (Black, 1992; Payne, Millar and Glezen 1996; David, Kochhar and Levitas 1998; Chen, Harford, and Li, 2007). For example, an insurance firm invests in company X, the insurance firm does not agree with the remuneration policy of company X, however, they do not want to vote against it at the next AGM, as this will mean company X will not use them for insurance. Given this relationship, when investors are given the opportunity to engage with the directors, institutions may be quite submissive. Black (1992) thought these cultural factors may be at play within the agency relationship, and this should consider this in an argument about the use of agency theory and institutions.

This section outlines the arguments for certain institutes to be more susceptible to greater conflicts of interest. This is an important aspect of the thesis, as it helps to outline the possible differences between the types of institutional investors.

David et al (1998) differentiated the institutional investors into three groups: ‘pressure resistant’, ‘pressure sensitive institutions’, and ‘pressure indeterminate institutions’. ‘Pressure resistant institutions’ are classified as an institution that is not influenced by the company they are buying shares in, such as pension funds, mutual funds, who can interfere in corporate governance without the fear of retribution. ‘Pressure sensitive institutions’ are insurance companies, banks and non-trusts as they can have a relationship with the company they have invested in, for instance, banks will gain income from lending to these companies, insurance companies may be the insurance provider for the company they are investing in, hence they may be more sensitive to the investee firm and less likely to pressure the company. ‘Pressure indeterminate institutions’ are the residual category, corporate pensions, brokerage houses, investment counsellors any group whose motives could not be clearly defined.

Payne, Millar and Glezen (1996) find evidence that there is a significant positive association between the percentage of bank ownership and voting for antitakeover provisions, compared to other institutions that have a significant negative association between percentage ownership and voting for anti-takeover provisions, as did block-holders. This provides evidence to support David et al (1998) that banks are pressure sensitive.
3.4.2 Levels of Activism
Shareholder activism is a scale, not all activism is equal, as can be seen from the Figure 5 below, that shows the levels of shareholder activism that can occur, ranging from no action to regular dialogue and voting:

**Figure 5 Range of Shareholder Activism**

This section discusses the level of activism of shareholders.

The 2014 National Association of Pension Funds (NAPF) report on NAPF engagement found that 94% of respondents agreed that institutional investors, including pension funds, played an active enough role as owners, 53% believed that institutional investors have played an active enough role as stewards and 55% of respondents agreed that engagement adds value to the fund (NAPF, 2014). Since the Stewardship Code of 2010, there have been 82 Asset owners have formally signed up to the code, and 63 out of the 82 are pension funds. This suggests that the vast majority of the asset managers that have signed are pension funds. The ISC principles are the predecessors to the Stewardship Code 2010 and Martin and Nisar (2007) reviewed the compliance to the principles by fund managers. It was found that nearly all asset managers have a clear statement on engagement, despite an apparent lack of commitment to the ISC principles. Martin and Nisar (2007) suggest that this could be because fund managers take different approaches to meet the ISC principles. These findings suggest that UK institutional investors are considering stewardship as part of their role in investing. This could however, more recently been linked to the EC Shareholder Rights Directive in 2007 and amended for implementation in September 2018 (European Commission, 2017).
The level of activism appears to differ from type of institution, as McCahery, Sautner and Starks (2008) survey from the Netherlands and the US found that hedge funds were the most active group by far, when asked if would take coordinated corrective action against the investee firm, however this was not asking if they did take action just if you would take action and hedge funds were the most likely to consider corrective action.

Gillian and Starks (2000) found that shareholders had minimal success in proxy votes on corporate governance, as the majority of shareholder proposals made on corporate governance issues from 1987 to 1994 as reported by the Investor Responsibility Research Centre (IRRC) (2042 shareholder proposals submitted at 452 companies), were rejected. However, if the proposal were re-submitted they were more likely to be accepted. Various investment groups, pension funds, sponsored all of these proposals. Only 463 (23%) were submitted by institutional investors. Of this 36% were by New York pension funds, 19% by California pension funds (CalPERS and CalSTRS), 26% union pension funds and 13% by CREF and the reminder by other state funds. The success rates did differ between investment groups, as co-ordinated groups were the most successful, then institutional investors followed by individuals.

There is an issue about investor engagement and insider trading. As, if a shareholder starts a dialogue with the firm and there is too much dialogue, the investor could be accused of insider trading (Black, 1992).

3.4.3 Activism influence on corporate governance
This section presents the research evidence on how shareholders have influenced corporate governance. The thesis focuses upon the reverse causality of how governance influences investment choices of institutional investors. However, by exploring the literature on the success of activism it became apparent that there is a mixed success and when there was a greater success it was through private campaigns (Becht, Franks, Mayer and Rossi, 2006; Smith, 1996; Gillian and Starks, 2000). Private campaigns could be perceived as costly, thus with greater diversification of portfolios (Wong, 2010), it could be considered costly to

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4 Where co-ordinated groups were defined as a group of individuals such as the United Shareholders Association (USA) or by investment groups.
engage in shareholder activism and could be perceived as easier to invest in firms with good pre-existing corporate governance.

Becht, et al (2006) and Smith (1996) both reviewed institutions that targeted failing firms to exert change. Smith (1996) used 51 of the 78 companies that CalPERS (Californian Pension Fund) targeted, who also had high institutional ownership as well as failure. Becht, et al (2006) used Hermes UK Focus Fund who want to seek significant changes in the company’s strategy, including replacement of CEO’s or the chairman, disinvestment, reductions in capital expenditure and changes to policy pay-outs. Hermes invested in only 41 companies from 1998 to 2004, where they kept the investment for a median of 517 trading days.

Becht, et al (2006) find that their investment outperformed relative to a variety of benchmarks, especially in companies that were targeted for board changes. Smith (1996) found that it did increase share price, but does not have a significant effect on operating performance. It appeared there was a net gain of $19m over the years of 1987 to 1993 (for the 34 firms with sufficient data) while the cost was approximately $3.5m ($500,000 per year). Although Smith (1996) found that 72% of the targeted firms either adopted or made changes to governance structure to warrant successful resolution.

The monitoring of success is quite difficult to measure as a lot of pressure is exerted behind closed doors and without access to the institutions level of private monitoring, it is harder to ascertain their success. Gillian and Starks (2000) cited this as a problem when it is found that when shareholders announced a proxy vote on poison pills it was met with negative abnormal returns. Gillian and Starks argued that this is because the majority of votes do not work and it is a signal that management is unwilling to change. Becht et al (2006) and Smith (1996) research supports this view, as they were both examining activistisms with the information of the institution. Solomon and Solomon (1999) find that 84% of the UK Unit Trust managers surveyed (60) said that they have tried to influence a decision through private meetings.

Del Guercio and Hawkins (1999) find that from a group of six pension funds in the US (CalPERS, CREF, CalSTR, SWIB and NYC) were heterogenic in their motivations for shareholder activism. The funds that were internally managed did not want their activism to be public and only took their activism to the shareholders as a last resort. Del Guercio and
Hawkins (1999) gave the reason that if the funds are internally managed, there are benefits to keeping information private. As, if the fund manager approaches the investee company about possible changes to the company and then the company makes the changes. When the market finds out about the changes, the share price should rise. Thus, the fund manager can buy more shares before the share price rises and sell at a higher price. Once the market knows about the changes then free rider problems occur.

Del Guerico, Seery and Woidtke (2008) examined the “just vote no” campaigns by institutional investors, which were defined as an organised attempt by activists to vote no against a certain proposal. The campaign would be done by e-mail, letter, press release and internet communication in the US. It was identified that there were 112 just vote no campaigns from 1990 to 2003. It was found that the majority of campaigns were because of, the broad base campaign (74%), dissatisfaction with the board (59%), lack of independence and proper oversight (23%), and the governance issues (18%). The characteristics of the firms targeted are scrutinised for similar characteristics and no significant difference is found in board size, board member stock ownership, institutional ownership or the percentage of firms which the CEO is chair. However, it is found that firms targeted have a significantly lower proportion of insiders on the board than control firms. The impact of the “just vote no” campaign was positive on CAR for days -1 to 0 at 0.85% (10% significant) from the cleaned observed sample of a reduced 48, because of problems finding the precise day of the announcement. Operating performance improved most significantly in firms that were targeted for overall dissatisfaction of performance and board have the largest increase, whereas firms that were targeted for corporate governance issues have no significant increases. Voting against the board in a “just vote no” campaign has an impact on the composition of the board, as within the year of a campaign there is a significant impact on forced CEO and Chair change and the largest impact on forced change is when the no campaign is because of general dissatisfaction with the board or management or both (Del Guerico et al, 2008).

Karpoff, Malatesta, Walkling (1996) finds that firms that have poor financial performance attract more governance proposals, however, no substantial evidence is found to conclude that the proposals impact the firms’ value or financial performance.
Brav, Jiang, Thomas and Partnoy (2008) finds that hedge fund activism in the US between 2001 to 2006 created positive abnormal returns when hedge funds targeted companies. Where there is an 8.54% abnormal returns for the sale of the company and 5.95% abnormal returns for change in business strategy over a -20 to +20 day period Brav, et al (2008). However, this could be because hedge funds targeting “value” firms with low market value to book value, which are profitable with good cash flows. In addition, Brav et al (2008) finds that firms with high market capitalisation are not targeted, whereas firms with a high level of institutional ownership are targeted. However, when examining the effect on targeting firms, for corporate governance changes there is positive abnormal return, however insignificant. Despite this, general activism has a negative effect on directors, as the average pay fell by $1m after the action and the CEO turnover rate increases by almost 10%.

3.4.4 Block-holdings
This section discusses some research on how firm monitoring is effected by the level of firm ownership.

Chen, Harford and Li (2007) assess the monitoring ability of institutions to test if there is a difference between the type of institution and the level of ownership. Chen et al (2007) uses the announcement of poor M&A proposal, as the proxy for monitoring. Where poor merger and acquisition proposals were defined by the firms’ performance after the merger took place, including Cumulative Abnormal Returns (CAR) -1 day to +1 days around the announcement for a negative effect, however, because of the noise in the model they also test long-term stock returns as well. Finding that institutions with longer-term horizons and are independent are less likely to announce poor M&A proposals or accept them. Where independent institutions’ were defined as; independent investment advisors, investment companies and public pensions, and those categorised as “grey” are; banks, insurance, and other institutions’. Firms with investors with stakes of 5% or more Chen et al, (2007) found that it had no effect on CAR, however, it did have a positive effect on ROE after the merger. Chen et al, (2007) state the proportion of costs decrease with the size of the

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5 between Jan 1st 1984 to Dec 31st 2001, from the Securities Data Company (11,043) deals
6 In other studies, i.e. David, Kochhar & Levitas (1998) grey was described as ‘pressure sensitive’ who had possible conflicts of interest due to the potential/actual business relationship with the investee firm.
institutional stake and length of time invested. The longer a firm has been invested in the more influence it would have (Chen et al, 2007). Where the grey investors need to promote their interests and short-term investors do not monitor effectively. It is not only the type of investor that has an influence on success, it is also the fund itself, as Del Guercio and Hawkins (1999) found that companies targeted by CalPERS, a US Pension fund, on antitakeover provisions are significantly more likely to experience a change in control than their matched comparison firms.

Both Duggal and Millar (1999) and Chen et al (2007) find no evidence of total level of institutional ownership and monitoring using CAR. However, Chen et al (2007) critiqued their own work and said the CAR using MM did have noise and institutions could be argued to be better informed. Pound (1989) developed an efficient monitoring hypothesis that suggested that there was a positive relationship between corporate value and institutional share ownership, McConnell and Servaes (1990) found this to be true.

Overall the evidence suggests that monitoring by larger investors benefits the value of a firm (McConnell and Servaes, 1990; Chen, et al 2007).

3.4.5 Cost benefit of monitoring
This section discusses the cost benefit of monitoring of for investors.

Admati, Pfleider and Zechner (1994) support the evidence by developing a model to find the equilibrium for how much you should invest in a company before the institution should monitor. As there are costs associated with monitoring and there is an optimal level of investment, essentially if an investor does not invest that much there is little point in monitoring because of the free rider problem.

This is could be demonstrated by the findings of Brav, et al (2008) discussed in section 3.4.3 where it was found that activism created positive abnormal returns for hedge funds. This may have been because of the large stakes in the firms they were seeking change from, and the hedge funds gained positive returns for their efforts.

There is a cost benefit to monitoring and those with larger stakes reap more benefit from active monitoring than those with smaller investments (Admati et al, 1994).
3.4.6 Activism and financial performance
This section examines the literature on the impact that shareholder activism has on financial performance.

Erengburg, Smith and Smith (2016) use a sample of underperforming and overperforming companies, defined whether the firm was at the top (overperforming) or the bottom (underperforming) of the quintile from large listed public companies in the US for the t-1. With this sample, Erengburg et al (2016) evaluates whether institutional ownership changed over the study period. To assess the differences in the type of institution the relationship of holdings was significantly different from the control group. It is found that from the starting position where the companies were defined as over/underperforming there is a positive association between institutional ownership and the over performing group. However, over the study period the relationship changes between the type of group, it seems that active hedge funds and the largest block-holder shareholder both increases the percentage holding in underperformers more than over performers. Suggesting these groups invest in poorly performing firms, maybe in the expectation to reap greater gains, by targeting firms with a greater possibility for capital growth. Active pension funds however, do not significantly reduce their holdings in firms that subsequently fail; in fact, pension ownership is negatively associated with subsequent performance. Erengburg et al (2016) find that block-holders are not a homogenous group in relation to performance.

Hutchinson, Seamer and Chapple (2015) examined Australian firms from 2006 to 2008, where institutions are categorised institutions in a similar fashion to Almazan, Hartzell and Starks (2005) into pressure sensitive and pressure resistant groups, where pressure sensitive were any institution that could have potential business relationship (including banks and insurance companies) and pressure resistant (including pensions, other investment firms and hedge funds). Hutchinson et al (2015) found that there was a positive association between the pressure resistant group and performance (ROA) and no significant association for the pressure sensitive group. Hutchinson et al (2015) explained the results by stating that only institutions without a business relationship are able to persuade firms to monitor suboptimal risk-taking, or that pension funds are more likely to monitor the performance
more carefully and pressure sensitive firms are less likely to pressure firms because of the repercussions of losing business. In a similar study, Muniandy, Tanewski and Johl (2016) for Australian public listed firms from 2000 to 2012, again categorising institutions into sensitive and resistant institutions, it was found that pressure resistant group helped improve performance over the short-term, but did not in the longer term, whereas pressure sensitive the relationship was not clear. Muniandy et al (2016) created a third group ‘Nominee and trustee investment firms’ who own shares on behalf of a beneficiary, the third group played an important role in creating value in the longer term, as they had a positive impact on firm performance, as measured by share returns. Muniandy et al (2016) explained that the nominee and trustee group were more likely to employ portfolio managers who would utilize their investing ability and are focused on market performance, to help improve performance.

Overall the evidence suggest that firms perform better when they have less pressure sensitive investors (Muniandy, et al, 2016; Hutchinson, et al, 2015) and activism is more beneficial when poorer performing firms are targeted (Erenburg, et al, 2016)

3.5 Shareholder Protection
The whole principal-agency relationship has given rise to shareholders wanting rights to ensure their investments are more secure. In fact, where shareholders have more legal/regulatory rights it is beneficial to the firms’ value (Shliefer and Vishney, 1997; La Porta et al, 2002). This is not a surprising relationship, as the shareholder (principal) is the risk holder, and anything to lessen the risk of agency problems occurring this will help increase the firms’ value.

There are startling differences between the rights of lenders and shareholders. Shareholders do not get a promise of how much they can expect in return, they get a discretionary dividend, they cannot liquidate their investment at a given date, and they have no claims over certain assets (Shleifer and Visney, 1997). The only real right is that they can vote, and this is not universal, where there are certain classes of shares and shareholder votes are only of real use if they are concentrated (Shleifer and Vishney, 1997).
“One of the fundamental questions that the equity contracts raises is how – given the weakness of control rights without concentration – do firms manage to issue equity in any substantial amounts at all?” Shleifer and Vishney (1997 p 765)

Shleifer and Vishney (1997) asked whether investors are disinterested in actively managing their investments, and prefer investee firms’ to manage the firm well, without any interference. Jensen and Meckling (1976) express a similar view by asking why there are even shareholders who do not manage a company if it is all bad for them. If the managers do not consider their interest, why invest at all? However, in countries with greater dispersed ownership, like the UK and US, there is better minority interest protection and this is related to higher Tobin’s Q (La Porta, Lopez-De-Silanes, Shleifer and Vishney, 2002). La Porta, Lopez-De-Silanes, Shleifer and Vishney (2002) seminal work showed that those countries with better protection have higher Tobin’s Q than countries with low protection. They explained these results by suggesting that people are more willing to invest as their investment is more secure and there is less expropriation of minority shareholders in countries with better investor protection, which again may explain these results. In addition, the higher cash-flow ownership by the entrepreneur is associated with less expropriation of minority shareholders. Their sample is of 539 largest 20 firms by market capital in 27 different countries and shareholders who controlled over 10% of the votes and exclude financial firms, as their valuation is not comparable to other types of firms. They justified the choice of the 20 largest firms as they would be the most liquid as it is hard to find the benefit of investor protection for corporate valuation since large firms have access to substitute mechanisms for limiting their expropriation of minority interests, including things like public scrutiny, foreign shareholders, exchange rules. They took the ownership structure from several years, however, they justified this as they state that ownership tends to be quite stable. The majority of European countries’ corporate governance have gone under major changes since the 1990s (Martynova and Renneboog, 2010). The minority investor rights were defined by La Porta et al (1997) as follows;

1. The ease of voting for directors
2. The freedom of trading shares during a shareholder meeting
3. The possibility of electing directors through cumulative voting mechanism or proportional representation of minorities on the board
4. The existence of a grievance mechanism for oppressed minority shareholders, such as a class action lawsuit or appraisal rights for major corporate decisions
5. The existence of a pre-emptive right to new security issues by the firm
6. The percentage of votes needed to call an extraordinary shareholder meeting

This has been criticised as being based on the US model and counties who have a similar system got higher scores and were thus thought of as having better minority interest protection, which was related to Tobin’s Q (Martynova and Renneboog, 2010). If this criticism was expanded, the research could be said to show that countries similar to the US have higher valued firms.

One of the main legal protections is shareholder voting. However, in many countries they cannot vote by post and must be at the AGM in person, making it expensive and a disincentive to attend meetings. In OCED countries, it is generally believed that the shareholder is the main group to protect as their investment is sunk, unlike an employee, who can move jobs (Shliefer and Vishney, 1997). In the US shares with voting rights trade at a small premium, (Shliefer and Vishney, 1997 cited Lease, McConnell, and Mikkelson 1983; 1984, DeAngelo and DeAngelo, 1985; Zingales 1995). Zingales (cited from Shliefer and Vishney, 1997, 1995) showed that the premium increased when control over the firm was contested. It was not just the US other places had larger premiums, such as Israel 45.5%, Sweden 6.5%, Switzerland 20%, Italy 82%. It was viewed that the larger the premium the larger the implication that management can divert the funds to themselves.

### 3.6 Institutional Trading Patterns

It is important to understand what institutional investors deem as important features of investee firms’, when they are making their investment choices. This study primary focus is upon whether institutions tilt their portfolio’s to investee firms with good corporate governance, however, it is important to understand what other factors will influence their investment decisions, as these factors will need to be considered in the control variables of the study.
The duration of ownership could have an impact on the level of association between institutional ownership and corporate governance for different types of institution. As can be seen in Table 3 the most active traders are Investment advisors and the least are private foundations.

**Table 3 Portfolio turnover by institutional type**

<table>
<thead>
<tr>
<th>Institutional Type</th>
<th>Percentage portfolio Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment advisors</td>
<td>14.5%</td>
</tr>
<tr>
<td>Insurance Companies</td>
<td>11.7%</td>
</tr>
<tr>
<td>Investment Companies</td>
<td>11.5%</td>
</tr>
<tr>
<td>Banks</td>
<td>8.1%</td>
</tr>
<tr>
<td>Public Pensions</td>
<td>6.8%</td>
</tr>
<tr>
<td>Colleges and Universities</td>
<td>5.6%</td>
</tr>
<tr>
<td>Private Foundations</td>
<td>3.1%</td>
</tr>
</tbody>
</table>


Institutional investors are professional investors, so it should be little surprise that there is a positive relationship between a firm’s performance and change in institutional ownership, where this is primarily due to institutions’ selling activity, as more institutions sell poorly performing both in terms of earnings and returns (Lang and McNichols, 1997).

The US has the highest portfolio turnover of shares by institutions. Countries that follow a similar capitalism model to the US in there, also have high portfolio turnover (Dupuy, Lavigne, Nicet-Chenaf, 2010). In Dupuy et al, (2010) there is a ranking of the highest portfolio turnover by institutional type based on the Thompson One Bank Ownership database in 2005 and it appears to have changed with the following ranking from the most active to the least; Hedge fund; investment advisor; endowment; brokers; banks; pension; private equity and insurance.

The majority of the evidence suggests that institutional investors invest in larger firms (Gompers and Metrick, 2001; Hussain, 2000; Fernando et al, 2006; Falkenstein, 1996). Institutions in the UK are more likely to invest in firms that have a high analyst following and firms that have a high analyst following tend to be larger, thus institutions follow larger firms with institutional following (Hussain, 2000). Hussain (2000) suggests it could be either institutions are the major users of financial analysts or institutions prefer to follow firms
with a good level of analyst following, or alternatively it could be because of legal risk, as institutions have a fiduciary role and seeking advice from an analyst shows tangible evidence of this. However, institutional investors tend to invest a wider variety of stocks, unlike individual investors who are more prone to buying shares that have had a lot of media attention (Barber and Odean, 2008), although attention is not quite the same thing as the analyst following.

Gompers and Metrick (2001) find that between 1980 and 1996 institutions had a preference for investment in companies that are; larger, high liquidity and had relatively low returns during the previous year. The spectrum database under the following: bank, insurance, investment company (mutual fund), investment advisor (large brokerage firm) and other including pension and university endowments defined institutions. Institutions strong preference for large stocks accounted for nearly 50% increase in the share price relative to small company stocks. Gompers and Metrick (2001) suggest that this change could explain partially the disappearance of historical small stock premium. Institutional preference for large liquid shares may differ from individuals because of the large positions institutions hold as if they hold small shares this could cause a downward pressure on share price when they sell, and often the preference for large companies may be a proxy for liquidity (Gompers and Metrick, 2001).

Similarly, Fernando et al (2006) find that institutions exhibited a preference for larger and more liquid firms. Fernando et al (2006) find there is a positive association between institutional ownership and share prices. Fernando et al (2006) found that institutions exhibited a preference for larger and more liquid firms when share prices rose (fell) then institutional ownership rose (fell). It was also found that firms that increase their market capitalisation the institutional ownership fell, the bid-ask spread was not significant that suggested liquidity is not driving the reason for institutional preference. It is found that higher institutional ownership, higher quality, fewer analysts providing earnings forecast and lower ex-post uncertainty of firm value choose higher share prices when they split their shares. Firms that are classed as higher quality had lower turnover and bid-ask spread. There is a positive relationship between stock returns and quality. Fernando et al (2006) suggested that institutional investors prefer higher share prices, as this means fewer transaction costs, and high share prices is an indication of a firm’s quality.
Again, Falkenstein (1996) finds similar results when examining two years of mutual funds’ holdings of NYSE and finds preferences for stocks with high liquidity, information flow and volatility.

However, Badrinath and Wahal (2002) finds that institutions preferred smaller firms with high risk. Where Badrinath and Wahal (2002) finds that Institutions act as momentum traders when they enter stocks but contrarian traders when they leave or make no adjustment. This is unlike Gompers and Metrick (2001) who finds there is little evidence for momentum trading amongst institutions. Badrinath and Wahal (2001) did find that there is a significant difference between institutional types, this was found as when new securities are added to institutions portfolios there was considerable variation in all return lags estimates. The largest was for mutual funds and then followed by two clusters, the first included investment banks and brokers, insurance companies and money managers and investment advisors. The second cluster was banks, colleges and foundations, and pensions who have lower estimates for momentum trading. Showing that sensitivity of change in holding to past returns is significantly higher for investment advisors and mutual funds than for pension funds and backs. Cready (1994) finds that institutional investors invest more in firms with low dividends.

Duggal and Millar (1999) examines the level of institutional ownership and checked to see whether companies with higher levels of institutional investors has good different bidder returns to the average firm. It is found that there was no evidence to show that having high levels of institutional ownership meant they are better informed or monitored any better as there was no evidence of increased returns. In their results, it first seemed the case when they regressed the Institutional ownership to bidders’ gains and found a positive relationship. However, when Duggal and Millar (1999) took into consideration: bidders’ size, level of insider ownership and whether the company was on S&P index and regressed these factors to bidders gain and institutional ownership, there was no relationship. This implies that the initial positive regression was just because of the other facts, not the institutional ownership level. This is hard to test as the largest majority of shareholding was by Institutional investors, and previous research suggested that there are negative abnormal returns for acquiring companies, and thus the acquiring company if average would have
high institutional ownership already therefore negative returns. This would suggest that institutional investors are not very good at monitoring companies’ behaviour.

From the literature presented in this section institutions can be said to exhibit a preference for larger firms (Gompers and Metrick, 2001; Hussain, 2000; Fernando et al, 2006; Falkenstein, 1996), higher analysis following (Hussain, 2000), more liquid firms (Gomper and Metrick 2001 and Fernando et al, 2006) and there is some evidence that institutions’ prefer lower dividends (Cready, 1994). However, it is acknowledged that these preferences differ from institution to institution with different levels of turnover (Dupuy et al, 2010; Lang and McNichols, 1997).

3.7 Summary
This chapter has covered the literature on institutional shareholders and how there are differences between the type of owners. Activism is an important tool used by shareholders to force a change in companies and it appears to have varying degrees of success. There appears to be an issue with institutions who have potential business relationships having conflicts of interests that make activism problematic.

The main issues are the cost of engagement for shareholders in monitoring their investments, where it was found that the larger the stake a shareholder has the greater the benefit of engagement (Chen et al, 2007). This may suggest that it is more likely that institutions that have a smaller stake in a firm are more likely to use a proxy advisor. Even when there is greater cost-benefit of engagement there are differences between the institutions depending on the institutions’ conflict of interest with the investee firm (Black, 1992; Payne, Millar and Glezen 1996; David, Kochhar and Levitas 1998; Chen, et al 2007).

In relation to the level of engagement the use of proxy advisory agents, like ISS has increased popularity (European Commission, 2011, Verdam, 2007), it could be argued that institutions may use the proxy advisory agents to gauge the level of corporate governance in investee firms before the institutions invest. Given the only real influence shareholders have is the vote (Shliefer and Vishney, 1997), then the increased use of the proxy agents, could imply that the level of active engagement amongst most shareholders is poor.
The following chapter examines the literature on corporate governance, by first presenting the literature that discusses the ideal governance structure. Then the most important element of the following chapter is the literature that combines the institutional shareholders and corporate governance, and the findings of similar research on how shareholders tilt their portfolios to companies with good governance.
Chapter Four

Corporate Governance
4.0 Corporate Governance
This chapter outlines the perceived best practice for corporate governance, based upon ‘The Code’ 2016 (FRC, 2016a) and ISS (RiskMetric) indices for corporate governance and discusses the research evidence to support these assumptions. The chapter discusses corporate governance guidelines, regulations and generally perceived best practices (The Code, 2016) have arisen from the agency principal problem, where directors may not be acting in the best interest of shareholders. The final element of this chapter combines the literature on corporate governance presented in chapter two on regulations and chapter three on institutional investors with this chapter to discuss how good corporate governance influences shareholders.

4.1 Board of Directors
The board of directors are responsible for the direction of the company. The board is critical to the firm and how it is structured and in governing the direction of the firm (Cadbury, 1992). This section discusses the research on the optimal board structure; it covers the possible dominance of the CEO, the recruitment and retention of directors, the presences of independent directors and the directors’ commitment.

4.1.1 Dominance of the Board
The Code (FRC 2016a) outlines some key principles that UK companies need to comply with or explain why they are departing from them. There should be a split role for the CEO and chair, so no one person can dominate the whole company, where the CEO is responsible for the direction of the company and the chair is responsible for the direction of the board. Johnson, Magee, Nagarajan and Newman (1985) found that the sudden death of the founder of a company had a positive impact on the share price. Johnson et al (1985) explained this by suggesting that it could be because of founders’ influence over the company and their ability to set their pay. However, the impact of the death may not have been the only factor to influence the positive share price movement, as Johnson et al (1985) found that often founders also had large ownership stakes in the firm, thus the share price movement could have been because of this too.

There are two arguments about duality of the CEO and chair, one that if the CEO and chair are the same, there is less balance to the board of directors (Jensen and Meckling, 1976),
also there is potential to be misused the power, and splitting the roles helps prevent too much control vested in one individual Lipton and Lorsch (1992). The counter argument is that the duality in leadership enhances the ability of the leader to make faster decisions in a fluid business environment (Yang and Zhao, 2014). Jensen and Meckling (1976) suggested that with separation of CEO and chair, it limits the extent that there are managerial entrenchment and opportunism. Duru, Iyengar and Zampelli (2016) finds that in a study based on data from the US from 1997 to 2011 that CEO duality has a negative and significant impact on operating performance, when there is a smaller proportion of independent directors on the board, moreover, when the proportion of independent board directors rose it mitigated the negative effects of CEO duality. However, other research has found different results with Boyd (1995) identifying no association between CEO duality and firm performance. Boyd (1995) however finds with further examination of the type of business/environment there was significance association, with firms operating in environments with scarce resources (e.g. steel industry) there is a positive association between firm performance and CEO duality, this is the same as when Boyd (1995) examines firms with complex business environments which also has a positive association. However, Boyd’s (1995) data is from 1980 and 1988, and there were many revisions to ‘The Code’/Combined Code since then, thus the results from older research may need to be treated with caution. Baliga, Moyer and Rao (1996) find similar results to Boyd (1996) that duality is not detrimental to business performance. Baliga et al (1996) examine the impact the announcement of changes in duality has on share prices, where it is expected that a change from duality to non-duality should have a positive effect and where non-duality to duality would have a negative effect, however, neither impacted the share price significantly. Baglia et al (1996) also test for the impact of the change in duality on operating performance in the short-term and again the results are insignificant, however, the long term operating performance did show the positive effect of a change in duality, although the results were weakly significant. Although at the time of study there was almost no major firm in the US in 1988 had an independent outside chair (Brickley, Cole and Jarrell, 1997) where over 80% of firms had duality of CEO (Yang and Zhao, 2014) this might mean that evidence from the different decades may yield different results, as there are more cases of independent outside chair in the US now. Larker and Tayan (2016) find that from the top 92 firms and bottom 95 firms in the S&P 1000 in 2015 that 61% of these firms have CEO duality,
where the top 100 firms had 69% duality and smaller firms has 53% duality. The results were similar in a more recent study by Cornett, Marcus, Saunders and Tehranian (2007) who finds there is no significant relationship between ROE and CEO duality with data from the S&P 100 firms from 1993 to 2000.

Finkelstein and D’Aveni, (1994) find that CEO duality is less likely to occur in high performing firms with vigilant boards, where vigilant boards are classified by the proportion of outside directors, for chemical and computer industry from the Fortune 500 companies in 1984 and 1986. Consistent with these results, Elsayed (2007) finds that when corporate performance in a sample of Egyptian firms is poor, CEO duality is more likely, as a means to improve corporate performance.

Yang and Zhao (2014) support the view that dualities benefits/costs depend on the business environment, as the exogenous shock of the 1989 Canada-United States Free Trade agreement is tested. Where Yang and Zhao find that duality firms outperform non-duality firms by 3-4% when their competitive environments changed, suggesting that duality saves the costs of information and helps make speedier decisions. Whereas, Sharma (2004) find that duality of CEO had a positive association to the likelihood of fraud and when firms have high institutional ownership this also has a positive association to the likelihood of fraud.

The evidence in favour of splitting the roles of CEO and chair is somewhat mixed on how it influences performance. It was suggested that the benefit of having CEO duality is that decisions are made quicker (Yang and Zhao, 2014), as when there is an economic shock firms’ with duality recovered quicker. Both Duru et al (2016) and Boyd (1995) find that duality has a positive effect on performance, however, Boyd (1995) find this is for more complex firms. Others find that there is no signification association between CEO duality and performance (Baliga et al, 1996; Cornett et al, 2007). However, Sharma (2004) find that when there is CEO duality there is a positive association with the number of frauds. When there is CEO duality corporate governance tended to be poorer (Finkelstein and D’Aventi, 1994; Elsayed, 2007).

Overall, the problem of CEO dominance when the role of CEO and chair are not split identified in The Code (FRC, 2016a) are not present in the academic literature on CEO duality and firm performance (Yang and Zhao, 2014; Duru et al, 2016; Boyd 1995; Baliga et
al, 1996; Cornett et al, 2007), however, CEO duality has a negative effect on over corporate governance and instances of fraud (Finkelstein and D’Aventi, 1994; Elsayed, 2007; Sharma; 2004).

4.1.2 Former CEO on board
It has been suggested that the presence of a former CEO on the board may hamper the performance of the predecessor, as the former CEO might hinder the predecessors’ ability to make strategic changes or try to deviate from what the former CEO did (Quigley and Hambrick, 2012). Quigley and Hambrick (2012) find when the former CEO leaves there is a sudden change in performance in four areas: resource allocation, divestitures, executive recruitment and executive departures. ROA tends to change significantly from pre-succession levels when the former CEO leaves, suggesting that keeping the former CEO only has a temporary effect on financial performance. Zhang and Rajagopalan (2004) find when there is a crossover between the former CEO and the new CEO appointment has a positive effect on the firms performance and where there are more internal candidates the likelihood of relay succession is lower, as it is thought that firms that appoint with many internal candidates tend to have designated the new CEO as an heir.

Fahlenbrach, Minton and Pan (2011) find that firms, which has a more successful and powerful CEO, are more likely to be reappointed to the board multiple times. Having a former director on the board meant comparatively better ROA than benchmarked firms for the following two years.

The empirical evidences of keeping CEOs on the board can be perhaps summarised that CEO continuing presence on the board may be negatives, as Quigley and Hambrick (2012) suggest, however, Zhang and Rajagopalan (2004) suggest a CEO relay is good for understanding of the company, where a relay is not a continuing presence and Fahlenbrach et al (2011) states performance is better for two years, but not any longer.

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7 Quigley and Hambrick (2012) study was based upon 181 successions in high technology firms find that former CEO presences does hamper financial performance
8 examined data from 204 CEO successions from 1993 to 1998.
4.1.3 Succession Planning
Succession planning can help an organisation for a number of reasons. Shen and Cannella (2003) state that there are three major reasons succession planning is useful:

1. Helps the successor prepare for taking charge and enables the successor to gain the skills to take on the position as CEO.
2. Reduces the potential agency problems, such as incumbent CEO refusing to retire.
3. Back up if the incumbent CEO is unable to fulfil their responsibly (e.g. death)

Shen and Cannella (2003) find that there is a positive effect on the share price of the announcement of a promotion of the heir apparent, and there is a negative effect when the heir apparent is not promoted, but leaves. These results are explained by this being a sign that the incumbent manager is entrenched, and that possibly refusal to leave, thus the heir apparent leaves instead and this is greeted negatively by the stock market. However, when the heir apparent is promoted it suggests that the incumbent CEO is not entrenched.

4.1.4 Nomination Committee
It is argued that when CEOs were involved in the selection of new directors, firms appoint fewer independent outside directors and more directors with conflicts of interest. The share price reaction to an independent director is significantly lower when the CEO is involved in director selection (Shivdasani and Yermack, 1999)\textsuperscript{10}.

4.1.5 Related Party Transactions
Related party transactions are frequently viewed as creating a conflict of interest for directors. There are two schools of thought; conflict of interest view and efficient transaction view (Gordon, Henry and Palia, 2004). Conflict of interest view states that it erodes the shareholders’ ability to monitor the agents. Whereas, the efficient transaction view is that trust that has been built up between the agent and related party means they can share private information, thus making it possible for directors to make the best choices for the shareholders, however, to have the benefit it assumes that the directors are actually acting in the best interest of the company. Conflict of interest view portrays related party transactions as detrimental to the business, whereas an efficient transaction does not.

\textsuperscript{10} based on data for a three-year period from 1994 to 1996 from the 1995 Fortune 500.
Gordon et al (2004)\textsuperscript{11} questioned whether corporate governance mechanisms could have prevented these transactions occurring and whether they harm the shareholders. Kohlbeck and Mayhew (2010)\textsuperscript{12} find that in a comparison between firms that disclosed related party transactions and those that did not there was significantly lower Tobin’s Q and marginally lower subsequent stock returns than related party firms. The data was from before the changes made by the Sarbanes-Oxley Act and the bank on related party loans.

Henry, Gordon, Reed, and Louwers (2012) searched 1,302 Accounting and Auditing Enforcement Releases (AAER) from the SEC from October 1999 to December 2006 and only 31 were related party transactions. The cases are referenced in 148 AAER, so this only represents about 11% of the infractions. In comparison to non-related party transaction, the frauds have less of an impact on the financial statements. The evidence suggests that related party transactions do not necessarily lead to fraud, as the majority of these enforcements are loans to related parties and payments to company officers for goods or services that were either not approved or non-existent.

Overall the evidence suggests that related party transactions hinder value (Kohlbeck and Mayhew, 2010), however, related party transactions do not lead to fraud (Henry et al, 2012).

\subsection*{4.1.6 Election of Directors}
It is recommending that directors have held up for election annually (FRC, 2010b). The issues with annual election were discussed in chapter 2, section 2.7. However, to recap the premise for annual election is that it helps shareholder remove poorly performing directors and also it prevents staggered boards, which can be perceived as a takeover defence. An alternative view is that annual election make directors become too focused on short-term targets, so they are able to maintain their directorships (Sanderson et al, 2010), which could hinder the firms’ long-term performance.

\textsuperscript{11} Used a sample of 112 US firms from 2000 and 2001 from EXECUCOMP and found that around 80\% of companies had at least one disclosure of a related party transactions.

\textsuperscript{12} Had data from 1194 firms from S&P 1500 for 2001
Brown and Caylor (2006) find that annual election of board members is one of the seven corporate governance factors that drove an increase in Tobin’s Q. Suggesting that firms with an annual election perform better than those without one did.

Despite hostile takeovers being highly disruptive and costly and rarely used in the US and UK they receive a lot of academic attention (Becht et al, 2003). Takeovers are an important role in removing poorly performing incumbent managers, as their mere presence acts as a deterrent for incumbent managers to neglect their responsibilities to maximise shareholder wealth. However, this argument pre-supposes that target management are attempting a takeover to create shareholder value (Sudarsanam, 1991), which is not always the case (Manne, 1965). Despite this argument, it is widely acknowledged that takeover defences remove shareholders’ rights and ability to exercise a judgement about the merits of an offer (Sudarsanam, 1991). It is economic to be able to dispose of your investment through takeover (Manne, 1965). Takeovers allow the reduction of the information monopoly by the incumbent management, as the acquirer has information about the target (Becht et al 2003). Becht et al (2003) argue that takeover defences help the target obtain a fair price for shareholders. It is important to note that there is potentially greater protection against hostile takeovers in the US than in the UK (Short and Keasey, 1998). For example, according to Sudarsanam (1991) poison pills are rarely used in the UK. Black and Coffee (1994) believe that the lack of use of defences is to do with institutional shareholder opposition.

Lipton and Rosen (1991) develop a counter-argument that the threat of a hostile takeover is not always beneficial, they give anecdotal evidence of Donald Trump attempting to takeover AMC Corporate despite AMC’s chair being considered one of the best. The Suggestion that takeovers are not always used in the best interest of the shareholders. Lipton and Rosen (1991) also suggest that there should be quinquennial election of directors, rather than the one yearly election that is often purported to be the best model in the UK and US. Lipton and Rosen (1991) argued that the annual election is too short-termist, as the directors would be able to make decisions for the long term if the election period was to be longer.

Evidence from Guo, Kruse, and Nohel (2008) research into the impact of de-staggering boards find that from their sample of 188 US firms that 65% of the de-staggering were from

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13 The data was from 1987 to 2004.
2003 to 2004. This showed there was a growing trend in firms introducing annual election of directors. Despite Lipton and Rosen’s (1991) compelling arguments for increasing the election period, Guo et al (2008) find that when firms that announced they are going to change to the annual re-election of directors with immediate effect, this has significant positive CAR. Compared to firms that announced annual election over a phased period, there is a weakly significant negative CAR.

Cohen and Wang (2013) examined 1,649 Delaware incorporated firms in 2010 where 49% had staggered boards. In 2010, as there were two court rulings: 8th October 2010 and the other 23rd November 2010. The 8th October 2010 there was the Airgas Bylaw ruling, which allowed the shareholders of Air Products to obtain approval at the AGM at the end of September 2010 that the next annual meeting would be January 2011, which was only four months away, where the shareholders had the opportunity to vote on the directors’ appointment. The Airgas bylaw was in response to the hostile takeover of Airgas by Air Products. Airgas shareholders were in favour of the takeover; however, the directors were not. Airgas had a staggered board, which meant it was difficult to control outright. Therefore, Air Product firstly nominated three directors to be appointed to the board at the September 2010 AGM. Air Product manage to get the Airgas bylaw where the shareholders approved the moving of the AGM to four months’ time, where Air Products could replace the rest of the board. The importance of this is that it significantly weakened the takeover defences of firms with staggered boards. The decision was appealed by Airgas, but Chancellor William Chandler rejected the appeal on 8th October 2010. Airgas appealed the decision and it went to the Supreme Courts. On the 23rd of November 2010 the ruling was in favour of Airgas, essentially closing the door on the weakening of takeover defences. It is found that firms with staggered boards and most likely to be affected (i.e. AGM soon) has a positive relative returns after the Chancery Court ruling and negative relative returns the Supreme Court ruling, are highly unlikely to have arisen from random sampling variation. This evidence, therefore, supports the view that staggered boards delay director replacement and is viewed as decreasing shareholder value.

The evidence supports that the market prefers annual election (Guo, et al 2008; Cohen and Wang, 2013). However, this evidence may suggest the markets are not in favour of takeover defences, not that they actual erode value.
4.1.7 Board Turnover
Board turnover is the frequency in which the directors are replaced or leave. From a
corporate governance perspective, it is important that directors can be removed if they are
not performing, as according to ‘The Code’ 2016 “All directors should be submitted for re-
election at regular intervals, subject to continued satisfactory performance” p5.

Franks and Mayer (2001) find that the average board turnover is 11.2% and supervisory
board turnover was 12.6% for 1989-1994 for German listed companies. The sample was split
between loss makers and non-loss makers over the 6 years. They find that board turnover is
13.5% for loss makers and 9.8% for non-loss makers and the difference is significant at 5%
level. For the supervisory board, it is 13.1% loss makers and 12.3% non-loss makers. There is
very little difference between firms of concentrated or diverse ownership. Eisenberg et al
(1998) find consistent evidence where past performance increased the appointed and
departure of directors but did not affect the size of the board. Jensen and Murphy (1990)
find that directors are more likely to leave after a bad year than a good year; this is
consistent with Frank and Mayer (2001) and Eisenberg et al (1998). CEOs seem to bear little
risk of being dismissed and being openly sacked is infrequent (Jensen and Murphy, 1990),
taking the evidence it is probable that the directors feel pressure to leave when the
company is not performing.

4.1.8 Independent Directors
Outside independent directors are more independent of the firm, however, there is
potentially less knowledge than insiders (Bushman, Chen, Engel and Smith, 2004). According
to ‘The Code’, section B.2.1 one individual should not dominate the board (FRC, 2016a). If
the board has a balance between independent directors and executive directors, it should
reduce the probability that CEO dominance can occur. However, when CEOs are considered
a scarce rare commodity, this increases their bargaining power and thus, in turn, tends to
reduce the proportion of impendent directors on the board (Adams, Hermalin and
Weisback, 2010). The presence of independent directors provides expertise and they are
able to give advice to the board without the same fear of reprimand as executive directors.
The executive directors have greater potential conflicts in their incentives to monitor, as
there is a lack of independence from the CEO and the possible impact on private benefits
In the UK it is recommended that the board should be balanced between Independent Non-Executive Directors (NEDs) and Executive Directors. NEDs “should constructively challenge and help develop proposals on strategy” (FRC, 2016a section A.4). The NEDs should add some impartiality to the board. Independent is defined by ‘The Code’ 2016 section B.1.1 p10-11, as the NED does not have any of the following characteristics:

- “has been an employee of the company or group within the last five years;
- has, or has had within the last three years, a material business relationship with the company either directly, or as a partner, shareholder, director or senior employee of a body that has such a relationship with the company;
- has received or receives additional remuneration from the company apart from a director’s fee, participates in the company’s share option or a performance related pay scheme, or is a member of the company’s pension scheme;
- has close family ties with any of the company’s advisers, directors or senior employees;
- holds cross-directorships or has significant links with other directors through involvement in other companies or bodies;
- represents a significant shareholder; or
- has served on the board for more than nine years from the date of their first election.”

Simply placing independent directors on the board does have its problems. As independent, NEDs are part-time directors and often have multiple directorships so they may not have the time or the interest in understanding the organisation that they are serving (Lipton and Lorsch, 1992). These concerns have been addressed within the UK Code on Corporate Governance (2016) as independent directors must disclose their other commitments to the board. In addition, any executive director can only have one non-executive directorship or chairmanship in a FTSE 100 company (FRC, 2016a). Despite these concerns, Adrian, Wright and Kilgore (2015) find that from a survey of directors and shareholders on the important attributes for corporate governance and it Adrian, et al (2015) find that the most important

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14 Recent surveyed the Australian Institute of Directors (46 respondents) and the Australian Shareholder Association (230 respondents) between 2012 and 2013.
element is the CEO not having duality and secondly the proportion of independent NED on the board. These results suggest that shareholders and directors do consider the independence of the board important.

Zalata and Roberts (2016)\textsuperscript{15} find that there is evidence that there is a negative association between the proportion of independent NEDs and the amount of reclassification of re-occurring expenses and unexpected core earnings, suggesting that independent NEDs reduce reclassification. There is evidence that presence of independent outside directors has a positive effect on a firms’ corporate governance (Kini et al., 1995; Mehran, 1995; Xie, Davidson III, DaDalt 2003; Cornett et al’s 2007). Where Kini et al’s (1995) research that the proportion of outside directors increases post-merger and insiders decrease. When defining insiders as directors who are full time and who are employees of the company. The literature acknowledges that there are issues about defining some directors as outsiders, as they may have close family ties and actually be insiders, however this is an estimate of the desires of the acquiring company and clearly it is seen as a good thing to have more external influence over the board (Kini et al (1995) Kini et al, 1995; Mehran, 1995; Xie, Davidson III, DaDalt 2003; Cornett et al’s 2007). Bhagat and Black (2002) find conflicting evidence in their longitudinal study of the US shares that when low profitability firms increase the independence of their board it does not help improve long-term performance. Bhagat and Black (2002) find that firms with more independent boards did not perform better than firms with less independent boards. Similarly, Vafeas and Theidirou (1998) study on 250 UK firms from 1994, are unable to show a link between independent board members and financial performance.

Mehran (1995) find that when a firm has a higher level of outside directors the executives are paid a greater proportion of their remunerations through equity and this is found to have a positive impact on performance. Although Black (1998) states there was no clear evidence that the presence of outsider directors has a positive impact on performance.

Xie et al (2003) find that independent outside directors and non-independent outside directors have a positive effect on the amount of non-discretionary current accruals that are used in S&P 500 companies during the early to mid-90s, showing that their monitoring helps

\textsuperscript{15} Studied the UK from 2008 to 2010 with 713 firm year observations.
reduce the level of creative accounting. However, the outside directors become less effective the longer the tenure (Xie et al, 2003).

The level of independence of outside directors was positively associated with ROA in Cornett et al’s (2007) study. So, much so that by an increase of one independent director increases ROA by an average of 0.88%, Cornett et al concluded that “independent directors appear to align the interest of managers and shareholder, thereby reducing agency conflicts and enhancing ROA” (p1786).

In summary the majority of the research reviewed in this section indicates independent directors have a positive effect on the firm, with Kini et al, 1995; Mehran, (1995); Xie et al (2003) and Cornett et al’s (2007) finding that the when the proportion of independent directors increased, so did performance. Zalata and Roberts (2016) found that with more independent directors there was fewer earnings management. However, Bhaght and Black (2002), Vafea and Theidirou (1998) and Black (1998) found no evidence that independent directors improved the performance. Thus, on balance, the evidence suggests that the higher proportion of directors either improves performance or has a neutral effect.

4.1.9 Board Size & Meetings
This section reviews the literature on the optimal board size and how board meetings can be affected by the board size. Lipton and Lorsch (1992) state that the optimal board size is 10 or less as if the board is too large it is more difficult to create cohesion between the board members. They also believe that the length and frequency of board meetings can be an issue, as if they are too short or infrequent then this will erode the cohesion between the independent directors. The Code (FRC, 2016a) also supports Lipton and Lorsch (1992) view by stating that the board should not be too large or unwieldy. The following part of this section discusses the evidence on the optimal board size and meeting frequency.

Firstly, presenting the evidence in favour of a smaller board size, Yermack (1996), Dalton, Daily, Johnson and Ellstrand (1999), Eisenburg et al (1998) all found that smaller boards are more effective at corporate governance, as they find that smaller boards have better firm values. Where Yermack (1996) use Tobin’s Q for a proxy for performance and find that the

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16 from a sample of 452 large US industrial companies between 1984 and 1991
there is a negative relation between board size and Tobin’s Q, supporting the views of Lipton and Lorsch (1992). Dalton et al (1999) did a meta-analysis of previous studies and finds a greater relation between board size and financial performance for smaller firms, where Dalton et al (1999) explained these results by stating that “smaller firms do not have as many competition coalitions as their larger counterparts” p679. Eisenberg et al (1998) find that Finnish small firms have a negative relation between board size and returns on investment compared with their industry peers. All of these studies supported Lipton and Lorsch (1992) view that a too large board damages the firm.

In Kini et al (1995) study of board sizes of firms ante and post a takeover\textsuperscript{17} the board size decreased from 11.6 one year prior to the takeover to 9.84 two years post takeover. This could suggest that the new management believe that larger boards are not beneficial to the firm.

In support of Lipton and Lorche’s (1992) view that increased meeting frequency and length improve the cohesion of the independent directors, thus improving the monitoring, Xie et al’s (2003) found the with increased frequency of board meeting the lower the use of discretionary current accruals.

Lipton and Lorche’s (1992) provides a simplistic argument that large boards are harmful, however other research shows that complex firms can benefit from a larger board size (Coles, Daniel and Naveen, 2008; Xie et al, 2003). Where, Coles et al (2008) examine Tobin’s Q to board size and split the firms into simple and complex firms and found that simple firms have a negative relation between board size and Tobin’s Q, where complex firms have a positive relation between Tobin’s Q. Cole et al (2008) found that for complex firms the larger boards were associated with the higher number of outsiders. Where, Xie et al (2003) find that the larger the board size the fewer cases of using discretionary current accruals, they suggest that is that larger boards bring more experience, thus can monitor better, thus reduce the number of discretionary accruals.

Boone, Field, Karpoff, and Raheja (2007) examined the increase in board size over time; they find that from a firm’s initial IPO board size increased by 0.13 members per year for the first

\textsuperscript{17} between 1962 to 1980 on either the New York Stock Exchange or the American stock exchange
ten years and little after this point. Boone et al (2007) also find that firms that are more diverse, has directors that are more independent and the board was bigger. Cole et al (2008) explain that complex firms need a larger board because of their advisory needs and this is why there are more outsiders on the board. There could be some criticism of their definition of complex as they use a form of factor based scoring where it was based upon the number of business segments, firm size and leverage to capture the intensity of advising needs and if they are above the median they are complex and below simple. This is a very simplistic way of defining the firm as it is a continuous scale, not just simple or complex and the measures are a little crude.

Walker Review (2009) the ideal board size is between 10-12, however, Walker (2009) also acknowledges the issues of more complex firms require a larger board. Walker (2009) suggests that in the financial service sector companies should not feel the pressure to increase the board size of the company. For example, if a NED with financial Industry experience has served for nine years they will no longer be considered independent. However, their financial Industry experience should not be retained, as the increased size of the board will be more detrimental than the reduction of independence balance to the board. Walker believes that there is a greater need for more experience within financial services compared to other industries, as financial services firms have to apply more complicated accounting standards, that are subject to a greater degree of subjectivity, thus are easier to manipulate. This view is supported by the evidence of Xie et al (2003).

Whereas, both Cornett et al (2007); Zalata and Roberts (2016) find no evidence to support the view that larger boards are harmful. Where Cornett et al (2007) find there was no significant association between ROE and board size. Zalata and Roberts (2016) find that the board size has no significant association with re-classification of non-recurring expenses and unexpected core income.

Dolton et al (1999) argue that large boards are not a corporate governance failure, as they find that there is no relation between the board structure (insider/outsider ratio) and the size of the board, this research attempts to show that outsiders do not influence the board size.
The majority of the research suggest, a smaller board is beneficial (Yermack, 1996; Dalton, et al 1999; Eisenburg et al, 1998), however there is a growing body of research that suggests that more complex firms can benefit from a larger board, due to the need for greater expertise (Coles, Daniel and Naveen, 2008; Xie et al, 2003; Walker Review, 2009).

4.1.10 Directors Dedication
Directors are supposed to have enough time to discharge their respective duties responsibly (FRC, 2016a). One of the proxy measures for directors’ dedication is the number of directorships they hold, as it is assumed if a director has too many other directorships cannot fulfil their role within the firm. The Code 2016 states that full time “executive directors should not have more than one non-executive directorship in a FTSE 100 company nor the chairmanship of such a company” p 12 section B.3.3. The argument in favour of having a limit on the number of directorships is based on agency theory and those non-executive directorships can distract the executive director from their responsibilities (Geletkanycz and Boyd, 2011). However, it could be argued that having outside directorships gives CEOs experience of different approaches, but does not have to expose the company to the risks of these experiences (Geletkanycz and Boyd, 2011).

This next section reviews the literature on the impact multiple directorships has on firm performance. Geletkanycz and Boyd, (2011)\textsuperscript{18} find that CEO outside directorship did not have a positive nor negative effect on performance, where performance is defined as five-year average return on assets and return on sales. Outside directorships are more beneficial to firms operating in a low growth industry, whereas high growth industries there is no significant relationship between firm performance and outside directorships. Geletkanycz and Boyd (2011) justified the results by arguing that firms operating in low growth industry are required to have a wider skill set, thus the firms gain more when the CEO has more outside directorships.

Perry and Peyer (2005) \textsuperscript{19} find that the cumulative abnormal return for the 3 day period around the press release/proxy filing date for the sending firm is -0.20% and not significant and nor is it significantly negative when the sending firm’s executive already holds two or

\textsuperscript{18}Used a sample of 460 firms listed in 1987 Fortune 1000.
\textsuperscript{19}examined the impact on the announcement of executive directors accepting outside directorships in the US from 1994 to 1996 on the so called sending firm, (the firm that employs the executive).
more directorships. Perry and Peyer (2005) that when directors from firms with independent directors and directors with share ownership gained another directorship, then the firm had positive abnormal returns. However, in firms with less independent directors and less director share ownership, there are negative abnormal returns. These results suggest that the market perceives more directorships as beneficial in firms with good corporate governance, this could be because it would allow the directors to gain more experience and knowledge that could help the firm. However, if the firm has poor corporate governance it could be argued that the extra work the director is undertaking is harmful to the firm because the director has less time to be spent on directing the firm.

Perry and Peyer (2005) review the type of company the executive director is going to be serving on as the additional directorship effects the returns of the sending companies. Finding that when the receiving firms are financial firms, in a similar industry and/or is a firm that has greater relative growth opportunities then the reaction is positive, however, when it is the CEO that joins an outside board and the sending firm outperforms the median firms in its industry there are negative returns.

Kiel and Nicholson (2006) find in an Australian study that there is no significant relationship between performance and the number of directorships for the largest 173 firms from ASX from July 2003 to June 2004.

Ferris, Jagannathan and Pritchard (2003) find that there was no evidence that there is a greater chance of security fraud litigation when the directors serve on multiple boards for US firms on COMPUSTAT with at least $100m total assets for 1995.

Fich and Shivdansani (2006) find that the majority of outside directors have three or more directorships and when the majority of directors in a firm have more than three board positions there is a significantly lower market to book ratio. This suggests that multiple board positions are detrimental to shareholder value. In a similar study Cashman, Gillian and Jun (2012) find consistent findings with the S&P 500 from 1999 and 2008, however, when Cashman et al (2012) extended the sample to include non S&P 500 companies they find that there is a positive association with directors’ busyness and financial performance.

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20 found that from the 1992 Forbes 500 list from 1989 to 1995.
However, Benson, Davidson III, Davidson and Wang (2015) find that there are cases when multiple directorships of CEOs have a positive impact on the firm. They review M&A bid-premiums and find that when the CEO of the acquiring firm is busy there were lower bid-premiums, suggesting that the CEO dedicate their time to the negotiations. However, when the majority of directors sat on three or more boards the relationship does not hold.

Kaczmarek, Kimino and Pye (2014) find that from the UK listed financial and utility firms over a 10-year period that when more than a half of the directors hold three or more directorships the financial performance is hindered.

Another proxy for whether the directors are carrying out their duties is attendance at meetings. Jiraporn, Davidson III, DaDalt and Ning (2009) find, based on US firms from 1998 to 2003, that directors with more directorships have poorer attendance at meetings. Lin, Yeh and Yang (2014) find the same relation when examining Taiwanese companies from 2006 to 2008. Although Baccouche, Hadriche and Omri (2014) find conflicting results from the 110 French listed companies from 2008 to 2010 examined, where it was concluded that attendance at board meetings are positively associated with multiple directorships.

To extend the argument further, given that there is little empirical evidence to support the view that multiple directorships are bad for financial performance, then it poses the question of whether poor attendance a bad thing? It appears from the research that lack of attendance at meetings is detrimental to the financial performance (Vefeas, 1999; Chou et al, 2013; Brick and Chidambaran, 2010; Lin, Yeh and Yang, 2014; Al-Najjar 2012).

Vafeas (1999) find, from 307 firms from the Forbes compensations survey of 1992, covering the 1990 to 1994 period, that board meeting frequency helps improve a firm’s value. Finding that after a firm had experienced share price decline there is an increase in board meetings and in the years following, improved operating performance.

Chou, Chung and Yin (2013) find that when examining the Taiwanese firms that only the CEO’s attendance at meetings had a positive impact on firm performance as measured by ROA. In addition, there is a negative significant relationship at the 10% level for domestic institutional ownership and meeting attendance, so the higher the domestic institutional ownership the poorer the attendance at meetings. In fact, when Chou et al (2013) did
further analysis of attendance at meetings it there is a positive association with significance of 1% level for domestic and foreign institutional ownership and directors sending a delegate to represent them at the board meetings. This suggests that institutional ownership does not have a positive effect on board attendance. Chou et al (2013) suggested this could be because of the dispersal of ownership; however, it is important to consider the possible cultural differences of Taiwan and the UK.

Brick and Chidambaran (2010) find that from a six-year period from 1999 to 2005 for 5228 observations from the US firms, that board activity has a positive impact on firm value. Where board activity is measured by two variables log of board meetings and the log of the independent directors and the number of times the board meets per year and firm value is measured by Industry adjusted Tobin’s Q.

Lin, Yeh and Yang (2014) find firms with higher board attendance are associated with improved accounting performance as measured by EPS and ROA; however, the relationship does not hold when examining market performance, as measured by annual stock return.

So, how beneficial are board meetings? Al-Najjar (2012) find that board size and independent directors are positively related to board meetings, however, there is a negative relation between board meetings and audit committee meetings, this is to say the more the board meets the less the audit committee meets. This is consistent with the view that there is a delegation of duties according to Al-Najjar (2012). In addition, the study finds that more meetings are associated with higher leverage ratios and free cash flows.

Overall there is mixed evidence on how multiple directorships are damaging to the firm as a body of evidence suggests that multiple directorships simply have no effect on performance or security fraud (Kiel and Nicholson, 2006; Geletkancyz and Boyd, 2011; Jagannathan and Pritchard, 2003). However, other studies find it depends on the number of directorships and the level of impact on a firm, with Fich and Shivdansani (2006), Cashman et al (2012) and Kaczmarek (2014) finding there is a negative impact on value when there are over three directorships. Benson et al (2015) also find three directorships being a cut off for the positive effects they find on the bid premium. Thus suggesting, multiple directorships are

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21 Using UK data of 120 firms from 2003 to 2008
not harmful when three and below. Others find that the effects of multiple directorships differ across different types of firms (Perry and Peyer, 2005; Ferris et al, 2003).

4.2 Managerial Ownership

One of the methods to reduce the agency problems is to increase managerial ownership, as it would align the goals of the shareholders to managers. So logically, there should be a relationship between a company’s financial performance and the level of managerial ownership. This section examines the literature on the impact management ownership has upon value and corporate governance.

Morck and Shleifer (1988) find that there is a positive relationship between Tobin’s Q and board ownership of between the ranges of 0% to 5%. They explain these results by suggesting that the positive relationship between Q and 0% to 5% board ownership is because managers are motivated to gain a larger share in the firm. Surprisingly, Morck and Shleifer (1988) find that between 5% to 25% managerial ownership, there is a negative relationship between a performance and ownership. This was explained by entrenchment of incumbent management arising from effects such as the status of the founder, voting power, increase in the length of tenure (as the longer the director is there the more likely they are to have a large stake in the company), low employment of professional managers, and dominance of insider over outside directors on the board. In the range of 25-30% there is a positive relationship, it is suggested that the positive relationship maybe because the board can reject any outside challenge and that the increase in Q for the very high ownership maybe due to pure convergence of interest. One of the limitations of this research is that their data source ‘The Corporate Data Exchange’ identifies shareholders who are members of the board, but does not identify any with less than 0.2% ownership. Morck and Shleifer (1988) state that it is still valid as the percentage value is more important than dollar ownership as it represents the interest they have more effectively, however, this could be questionable. Morck and Shleifer (1988) recognise that Tobin’s Q has a lot of noise, but feel that it is the most suitable measure. Short and Keasey (1998) find similar results in the UK for 1988 to 1992 where entrenchment occurred at 12% to 41% rather than at 5% to 25%.
Morck and Shleifer (1988) also assess the different types of directors and their influence on the performance. They assess the difference between ‘outside directors’ and ‘inside directors’. To test this, the sample is split to the two ‘top officers’ who were usually the chair and the president (CEO), however if the company has one person occupying the same role or there was just one position of combined chair and president, they just used one. The other part of the sample was the called ‘outboard’ who was anyone else on the board. The results were similar to the whole sample. Morck and Shleifer (1988) suggested ‘outside’ board members are just as capable as become entrenched as the top board members are, and they are both motivated by the financial incentive. The effects of the founders’ ownership and the corporate performance were also tested; the founder is classified as someone who is related to the founder or the actual founder. The older firms (incorporated before 1950) have a negative effect and for new firms (after 1950) have a positive effect on Q. It was suggested that this maybe because the newer founders may have an entrepreneurial role in the company.

McConnel and Servaes (1990) studied share ownership of insiders (officers and directors), individual atomistic\textsuperscript{22} shareholders, block-holders (5% or more ownership) and institutional owners and the relationship it has with Tobin’s Q for 1976 and 1986 in the US. Finding that there was a positive curvilinear association with insider ownership and Tobin’s Q in both years and institutional block-holders, but there is no relationship between block-holders or atomistic shareholders.

From the research on share ownership of managers it appears the benefit of ownership is curvilinear (McConnel and Servaes, 1990; Short and Keasey, 1998; Morck and Shleifer, 1988), so when ownership is much higher the managers and shareholders interest align.

\textsuperscript{22} Where a atomistic shareholder is a shareholder that acts on their own.
4.3 Share-Ownership

This section discusses the impact of concentrated ownership upon a firms’ corporate governance.

Franks and Mayer (2001) find that there was very little difference between the effects of concentrated ownership and dispersed ownership on board turnover in German quoted companies. However, they do find that concentrated bank ownership had a greater effect on board turnover than concentrated family ownership, when the company was making a loss. This could be because of family serving on the board.

Denis, Denis et al (1997) find that top executive turnover increases when outside blockholder ownership occurs and decreases when managerial ownership is higher\(^23\). Where the top executive is defined as the CEO or if the firm did not have a CEO then the chair, if not the president is third choice.\(^24\). The data for ownership and board data was taken from the start of the period, this was justified as it would avoid potential endogeneity problems associated with sampling ownership and board data each year, the example given was, “if both top executives turnover and block purchase are more likely in poorly performing firms, our tests might result in a spurious relation between block ownership and top executive turnover.” In the study, it is assumed that there is constant ownership of firms that have not had top executive changes and when the firms do change top executive the ownership is recalculated, this means that there are errors in the variables.

The evidence suggests that block-ownership has a positive effect on board turnover, so when block-ownership is higher the greater board turnover, (Denis et al, 1997; Morck and Shleifer (1988), suggesting that block-owners help improve board quality, by helping to remove poorly performing directors.

\(^{23}\) using data covered by Value Line Investment Survey (Value Line) as of year-end 1984, by used data covered by Value Line Investment Survey (Value Line) as of year-end 1984.
\(^{24}\) The sample consists of 5,545 firm-years involving 1,394 from 1985-1988. In the sample, it was necessary to identify non-routine changes; this involved removing retirement, death and ill health. There was a problem identifying retirement, as the press was not always clear. In order to minimise the problem people between 64-66 were classed as retired. After the removal of this group the sample of 338 non-routine top executive changes.
4.4 Executive Compensation

According to ‘The Code’ 2016, directors should be paid enough to attract the appropriate people, there should be a significant amount of pay linked to performance and they should not be involved in setting their own pay. Shleifer and Vishney (1997) state that incentive contracts seem like a good idea in theory as they should motivate directors, however, there is the opportunity for the directors to negotiate these incentives, so to make it efficient it is necessary to have a strong remunerations committee linked to promoting shareholder interests. UK listed companies should have a remunerations committee consisting of independent directors to prevent directors from having control over their pay (FRC, 2016a). Managerial pay is not the only way that management can obtain compensation, it can be done through consumption of perks such as; launch parties, corporate jets, miscellaneous expenses on company income statement (Mueller, 2006). SEC and IRC regulations disallow insider directors to serve on the compensation committee (remuneration committee) Anderson and Bizjak (2003).

In the UK CEO compensation has been on the rise from 2005 with an average compensation for FTSE 350 firms excluding unit trusts from an average £2,263,200 in 2005 to £3,138,290 in 2012, there was only a small dip in CEO compensation in 2008 and then only two years later they recovered back to pre-financial crisis levels (Alissa, 2015), as can be seen in Figure 6.
From Figure 6, it can be seen that there has been a growth in dissatisfaction amongst shareholders, as the amount voting against CEO compensation package, has risen by 62% from 2005 to 2012. However, the percentage of votes cast against executive compensation is still well below 10%.

Core, et al (2008) state that executive remunerations are one of the most widely reported headlines in the business press. Core et al (2008) study over 11,000 press articles around CEO compensation from 1994 to 2002 from the CRSP database, finding that negative press coverage is strongly related to excessive annual pay rather than raw pay. This is where excessive pay is the difference between actual compensation and expected compensation, where expected compensations are based on a range of economic determinates (firm size, growth opportunities, stock returns, accounting returns and industry controls). These results suggest that the media have a sophisticated view of executive remunerations rather than sensationalism. However, there is little evidence that there was much impact on excessive
CEO compensation or CEO turnover. The media also appeared to react more negatively when there are more options exercised.

**Figure 7 Proportion of Votes cast against directors’ remuneration for the UK**

![Proportion of votes cast against directors remuneration for UK FTSE 350 CEO remuneration packages](image)


Alissa (2015) did not find an association between votes against CEO Director Remuneration packages for UK FTSE 350 firms from 2005 to 2012 and total cumulative institutional ownership. In addition, Alissa (2015) finds no evidence that shareholders were sensitive to financial performance and are prepared to vote against excessive pay. CEO turnover was positively associated with firms where votes were cast against the remuneration packages. Both Alissa (2015) and Ertimur, Ferri and Muslu (2010) find that activist shareholders target firms with high CEO pay, however, support for the activism is higher when the pay is deemed ‘excessive’, suggesting that shareholders’ voting are more sophisticated than the activists’ target. These findings provide evidence that there are similarities between the UK and US market. Daily, Johnson, Ellstrand and Dalton (1998) find that the higher levels of affiliate directors did not lead to higher level of CEO compensation and was irrelevant against all three measures of pay, non-contingent, contingent and total pay for US

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companies using data from 1992 and 1993. Affiliate directors were defined as directors who have a personal/business relationship with the firm or subsidiaries and non-executive directors who have been appointed during the tenure of a focal firm’s incumbent CEO, so they are beholden to the CEO. The three measures of compensation are defined as non-contingent pay included salary and other annual cash compensation. Contingent pay is defined as; stock options; bonuses and other long-term incentive schemes that they called contingent pay; and combination pay was total pay. In a later study by Anderson and Bizjak (2003) again in the US, find that there is little evidence that greater remuneration committee independence affects executive pay. The SEC and IRS where the IRS in 1993 stipulated two or more outside directors need to sit on the remunerations committee. Anderson and Bizjak (2003) study focus on the time period before the regulations were implemented and finding that CEO that sat on the remunerations committee does not act opportunistically in terms of pay structure and actually, they received less fixed pay and total pay. In addition, there is an examination of how pay differed when the remunerations committee consisted of solely independent members compared to mixed membership, and there is no significant difference in relation to pay packages. In the similar UK, studies both Gregory-Smith (2012) and Conyon and Peck (1998) find little evidence that the level of independence of the remuneration committee is related to the level of CEO pay. Gregory-Smith examined FTSE 350 companies between 1996 and 2008, whereas Conyon and Peck (1998) used data from FTSE 100 from 1991 to 1994. Gregory-Smith finds that there is a clear link to pay and performance when CEO pay is used as the dependent variables with there being an association between total shareholder return and pay. Other control variables are used and the results find an n shaped relationship between ages that where the optimal age is 50. In addition, finding that there is a negative association between large outside ownership and CEO pay, so when outside ownership is greater CEO pay is less. Suggesting that large outside ownership is a substitute for management controls. Conyon and Peck (1998) again find little evidence to support the view that top management pay is negatively associated with the level of the independence of the remunerations committee. Conyon and Peck (1998) also find that some more shocking results that the existence of a remuneration committee was positively associated with higher pay; however, it could be because larger firms were possibly more likely to have a remunerations committee and they tend to pay more (Jensen and Murphy, 1990; Mueller, 2006).
To summarise all of the reviewed literature suggests there is little or no evidence that the independence of the remuneration committee is associated with less pay for directors (Daily, Johnson, Ellstrand and Dalton (1998), Anderson and Bizjak (2003) Conyon and Peck (1998) Gregory-Smith (2012).

4.4.1 Pay to performance
Managerial salaries are related to the size of the company rather than performance (Mueller, 2006). However, Jensen and Murphy (1990) have conflicting evidence, as in their study it was found that a positive relation between the pay of the top-level executive and firms’ performance. Where Jensen and Murphy (1990) define performance as the change in shareholder wealth from the beginning of the period, using market value multiplied by the inflation-adjusted rate of return on the common stock. Jensen and Murphy (1990) find that although bonuses represent 50% of CEOs’ salaries, such bonuses are awarded in a way that is not highly sensitive to companies’ performance. Bender (2003) find that within two FTSE 350 utility companies that the performance targets are changed in order to meet the criteria for the directors to receive bonuses; this is not really the desired intention of performance related pay. However, this research is only based on two companies and only 11 people were interviewed. Finding that there is a positive association with directors’ equity ownership and a firms’ performance (Mehran, 1995), thus suggesting that share payments help align the interest of directors.

Incentives pay may have unintended consequences of increased the pressure to manipulate the accounts as well (Shleifer and Vishney, 1997; Dechow, 1996). However, there is less chance of manipulating the accounts if there is strong governance (Dechow et al, 1996). Stock options are a way to incentivise management, their popularity was partly due to being hard to value and not an obvious manipulation (Mueller, 2006).

4.4.2 Size of firm
Jensen and Murphy (1990) find that CEO’s in large firms while owning a smaller fraction of their firms’ common stock, tend to have higher dollar investment in their firms’ shares than smaller firms. This is demonstrated by the ranking of firms by size (market value) and find that the top 1/25 of the sample had $1.85 per $1000 of pay performance sensitivity compared to the bottom ½ of $8.05 per $1000 for CEOs. Mueller (2006) states that there is
less status attached to running smaller companies, as you will not get to appear on
Bloomberg Television if you the CEO of a small company. In addition, there is an issue with
empire building, and that is there is less room for a mature company to grow and therefore
is more probable the pursuit of growth would damage the shareholder value, in contrast to
a young company, where growth may be more beneficial.

4.5 Audit
This section will discuss the role of external audit and the audit committee and how they
influence corporate governance. The external auditor is responsible for giving an
independent opinion upon the financial statements of whether they are free from material
misstatement. The audit committee should monitor the integrity of the financial
statements; review internal controls; monitor the effectiveness of the internal audit
function; make recommendations about appointment/rotation of auditors; and, monitor
the external auditors’ independence; and, report back to the board on how this has all been
done (FRC, 2016a).

4.5.1 Audit Committee
‘The Code’ recommends that the audit committee has at least one member with some
recent relevant financial experience (FRC, 2016a). Xie et al (2003) find that audit committees
with a member with financial experience and/or corporate background is associated with a
reduction in the level of earnings management, it is suggested that if a member has financial
experience/corporate background they are better able to monitor the financial statements
than those who lack financial or corporate background (Xie et al, 2003). Independent
directors make better monitors of integrity of the financial statements as there is a negative
relation between the amount of independent directors on the audit committee and on the
board of abnormal accruals (Klein, 2002). The importance of financial experience and in
particular accounting experience, not just general financial experience, in reducing internal
control issues is highlighted in Zhang, Zhou and Zhou (2007). Internal control weaknesses
were defined by SOX 302 and SOX 404, when finding that companies with poor internal
controls were more likely to have an audit committee with less financial experience and in
particular accounting experience. Consistent with this evidence Badolato, Donelson and Ege
(2014) studied 29,073 firm years from 2001 to 2008 and find that a firm with an audit
committee with both financial expertise and a high relative status are associated with earnings management, as measured by accounting irregularities and abnormal accruals that have been announced through law suits at the SEC and Department of Justice. The relative status of the audit committee is defined by firstly looking at the ‘raw’ audit committee, which included; the non-audit committee independence and the positions the members had (i.e. CEO, CFO) and then comparing it to the management of that firm and the other independent directors that were not on the audit committee. Finding that over the study period that amount of financial experience improved and the percent of independent directors, however the relative status deteriorated. Badolato et al (2014) did critic their study by explaining there is some bias in the data for the relative status, as firms that have higher financial risk are more unlikely to attract better audit committee members.

The evidence reviewed in this section suggest that firms with an audit committee member with financial experience has a positive effect on the incidence of earnings management and internal control issues (Xie et al, 2003; Badolato et al, 2014; Zhang, et al 2007) and firms with independent directors on the audit committee have less earning management issues as well (Klein, 2002). Thus, the evidence supports the Code’s (2016) requirements for independent directors and financial expertise.

4.5.2 Audit fees
The UK has recently implemented the EU directive on Auditing, where non-audit fees have been capped 70% of average fees from 17th June 2016 (FRC, 2016b). In the UK, the auditors’ remunerations should be disclosed in the annual report (The Companies Regulations, 2008. No 489) this gives transparency to the reader. Excessive non-audit fees are a worry because of the perceived lack of independence that it may bring, as the audit firm may become over reliant on the client, their role as an external verification of accounts becomes hazy as they may be unable to present an unbiased view, thus giving the green light to directors to present an untrue view of the financial situation of the firm. However, academics have provided mixed evidence that non-audit services lead to this with some finding no evidence of impaired independence (Callaghan, Parkash & Singhal, 2009, Defond, Raghunandan, and Subramanyam 2002, Geiger and Rama, 2003; Ghosh, Kallapur and Moon 2006) and other finding non-audit fees impaired independence (Frankel, Johnson, and Nelson, 2002; Francis and Ke, 2006). Empirical research into the impairment of independent is going to be flawed...
as they all use a proxy for independence, such as not giving a going concern audit report
audit report and the presences of earnings management (Callaghan et al, 2009, Defond et
al, 2002). Defond, et al (2002) find there to be no evidence of an association between that
distressed US listed firms and for the proportion of non-audit fees and total audit fees and
the non-issuing of going concern audit reports between February 2001 and June 2001.
Callaghan et al, (2009) find similar results where there no association between going
concern opinions and non-audit fees, based again on US data. Geiger and Rama (2003) again
find similar results for US firms from February 2001 to September 2001 that had issued
going concern opinion and a control group, and again there is no association between
financial distress and non-audit fees. However, Frankel et al (2002) find there is a positive
association between non-audit fees and with small earnings surprises and the magnitude of
discretionary accruals, while audit fees are negatively associated with these earnings
management indicators. No association between total audit fees and any earnings
management was indicated. Results were not driven by any particular auditors. Frankel et
al’s (2002) research is again only from February 2001 to June 2001, so maybe period
specific. In the US, disclosure of non-audit fees was made mandatory in 2001. Francis and
Ke (2006) assessed the impact of the disclosure on Earnings Response Coefficient (ERC),
which is regressing the cumulative abnormal returns against the quarterly earnings. Finding
that there is a negative reaction to the disclosure when the proportion of non-audit fees to
total audit fees is higher, suggesting that the market perceived high non-audit fees as an
impairment of auditor independence. Ghosh et al (2009) again use the ERC approach, where
they find no evidence of a relation between perceived audit independence, as measured by
non-audit fees to total fees for data from 2001 to 2006, the same as Francis and Ke (2006).
Ghosh et al (2009) extend their study and also examine the proportion of the non-audit fee
from the client against the audit firms’ revenue and found there is a negative association,
suggesting that the market reacts negatively when the fees are economically important to
the audit firm.
In support of the argument that non-audit fees do not influence independence, it is found
that when audit fees are large so are non-audit fees, which implies larger or more complex
firms use more non-audit services (NAS). In addition, when the company has good corporate
governance in form of more NEDs on the board, they have higher non-audit and audit fees,
and CEO/chair duality has no relation to audit fees (O’Sullivan, 2000). While excessive NAS can lead to loss of independence due to fee dependency, clearly some forms of NAS are more of a threat to independence than others from other perspectives e.g. self-review. Ethical Standards have reflected that over the years, banning some and permitting others.

4.5.3 Audit Rotation
Under UK current audit requirements for public interest entities (PIE) the engagement partner for the audit of a listed company should not normally serve for longer than five years, although the audit committee can allow the engagement partner to stay on for an extra two years, this must be disclosed in the financial statements. Once the engagement partner has been rotated they cannot return to the client until after five years (FRC, 2016b). Senior audit staff should have their engagement reviewed where they have served for seven years continuously (FRC, 2016b).

The premise to audit rotation is the concern that auditors become too familiar with their clients and losing their objectivity over time. Conversely, the argument against firm rotation is that audits gain valuable knowledge of their clients over time (Casterella and Johnson, 2013). The EU has made the mandatory firm rotation for all PIEs, the UK has adopted these rules and there is mandatory firm rotation after 20 years and can be extended to 24 years if it is a joint audit (Companies Act, 2006, Sections 487 and 489). However, Zhang, Zhou and Zhou (2007) research suggests that independence does not always benefit the firm, find that firms who have more independent auditors are more likely to have poor internal controls. In addition, firms with recently changed auditors are more likely to have poor internal controls.

The audit rotation empirical research suffers from the same problems as fee research as again independence needs to be measured.

4.5.4 Audit Ratification
The majority of firms in the US give their shareholders the right to vote on audit appointment (Dao, Raghunandan and Rama, 2012; Cunningham, 2017). Having the right to vote empowers shareholders on the auditor appointment process (Dao et al, 2012). Finding that firms that gave shareholders the right to vote for the audit appointment were subsequently less likely to have restatements and higher abnormal accruals (Dao et al,
In addition, finding that there is a positive association between voting against the reappointment of the auditors and the level of non-audit fees and the level of institutional ownership (Mishra et al, 2005; Cunningham, 2017).

In the UK, there is only a small window of time when the auditors have been appointed but not ratified by the shareholders. According to the Companies Act 2006 §485, part 3-4 the directors can appoint an auditor without the approval of the shareholders during the year, but it must be approved at the following AGM.

4.6 Corporate Governance and Institutional Ownership

This section reviews the literature on institutional ownership and its association with the quality of corporate governance of a firm. There is limited research on whether the corporate governance of a firm influences institutional ownership, with only Chung and Zhang, (2011) Bushee et al, (2013) providing evidence specifically on institutional ownership and Hawas and Tse (2016) more broadly examining major shareholders. This section outlines the only directly comparable research to the thesis. It will begin with a detailed examining the research methodologies used in these studies and a comparison of their findings.

Chung and Zhang (2011) and Bushee et al (2013) are both US based studies, whereas Hawas and Tse (2016) are UK. They all study slightly different timeframes with Chung and Zhang (2011) using a sample of 12,093 firm year observations listed on NYSE, AMEX or NASDAQ between 2001-2006, Bushee et al (2013) using a sample of 15,892 firm year observations and has directors’ information for approximately 1800 firms between 1995-2004 and Hawas and Tse (2016) from 2005 to 2009 for FTSE 350 with 695 firm year observations. All of these studies excluded financial firms.

All of the studies devised an index to proxy for corporate governance quality. Chung and Zhang (2011), again used two indices both based on the ISS index, the first used 51 of the 61 provisions while the second index only used 36 of the 61 provisions. Bushee et al (2013) used data from the Investor Responsibility Research Center (IRRC); they construct two indices, one relating to the board characteristics and the other relating to shareholder rights. Hawas and Tse (2016) proxy index consist of 26 elements that related to, board
composition and independence; board practices; accountability and audit; relations with shareholders, this index is more closely aligned to compliance to the Combined Code from 2003. Whereas, Chung and Zhang (2011) and Bushee et al (2013) indexes had more of a North American focus. For example, both have interlocking directors as part of their index, whereas Hawas and Tse (2016) have the proportion of independent directors, but do not specifically address interlocking directorships. Given the importance of North American investors in the UK stock market (Office of National Statistics, 2010), it could be argued that Hawas and Tse (2016) index could have been improved by making their index more global rather than just UK based. All of these studies use their own self constructed index (Chung and Zhang, 2011; Bushee, et al, 2013; and Hawas and Tse, 2016), this does not take into consideration their limited attention that institutions may have (Hirshleifer and Teoh, 2013), thus an institution may not pay full attention to all these areas of corporate governance.

Chung and Zhang (2011) find that there is a positive association between total institutional ownership and good governance, with both variations of their index. Bushee, et al (2013) only find a significant association between their index that related to the board characteristics and no significant association with the investor rights index. Hawas and Tse (2016) find a positive association between major shareholders and their governance index. Where major shareholders would have included, directors’ ownership; individuals; corporations and any other shareholders with ownership levels above 3%, so the results are not directly comparable.

There are theoretical concerns with Hawas and Tse (2016), as using major shareholders, as including directors’ ownership is quite different from institutional ownership. Bushee et al (2013) argue that institutions use corporate governance to monitor a firm. Where, it has been argued that management can become entrenched when they own between 5-25% of share in a firm (Morck and Shleifer, 1988) and when management is more than 25% the managers interest become aligned with the other shareholders, however theoretically it could be argued where managers have share ownership at 25% and above would not need to consider corporate governance, as they would control the firm. Thus, combining these two groups may result in the findings are less meaningful than when the groups are split out.
None of these studies examine the level of ownership and how that may impact the association between ownership and corporate governance (Bushee et al, 2013; Chung and Zhang, 2011; Hawas and Tse, 2016). Despite Bushee et al, (2013) arguing that good governance could be used as a way to reduce monitoring costs, it could hypothesize that when an institution has a greater stake then the need to monitor may require resources to more actively monitor, thus reducing the benefit of good governance.

Bushee et al (2013) could be criticised for their proxy for corporate governance being too narrow and focusing mainly on shareholder defences for one of their indexes and the other mainly focusing on the board of directors, thus reducing the use of the findings, as it does not truly represent corporate governance as a whole.

4.6.1 Corporate Governance and Institutional Ownership Type
It could be argued that not all institutional investors have the same motives and attitudes towards investments, for instance, pension funds are less active than insurance company (Stapledon, 1996). This is also shown in Johnson and Greening’s (1999) research into the relationship between corporate social responsibility and the type of shareholder. Corporate social responsibility is defined as a combination of people and product quality, where quality is defined by being responsible to the environment and the community that they operate in. Finding that investment managers did not significantly affect the corporate social performance for either people or quality. This supports their hypothesis that the investment managers have a myopic investment horizon and intervention would eat into their short-term investment. Pension funds have a marginally positive effect on the people dimension of corporate social performance; however, it was only significant at 10% and has a positive and significant effect on product quality. Johnson and Greening (1999) explained this as a result of pension funds having long-term investment horizons, pension fund manager’s salaries being less dependent on short-term gains and pension funds also have a preference for dialogue with companies rather than proxy votes.

Chung and Zhang (2011), Bushee et al (2013) and Hawas and Tse (2016) all divided ownership into shareholder type, to examine if there were any key differences. Chung and Zhang (2011) use the following categories; banks; insurance companies; investment companies; independent investment advisors; others including pensions, foundations. The
total ownership for each group was then regressed against both governance scores and the control variables, and it was found that all of the types of institution had a positive significant association to the governance score with 51 variables used. Hawas and Tse (2016) follows a similar approach to Chung and Zhang (2011) who categorised the major shareholder into groups, however, Hawas and Tse (2016) used different groups; Pension Funds and Insurance; Other Institutions. The categories were far broader than both Chung and Zhang (2011 and Bushee et al (2013). Hawas and Tse (2016) found that only ‘other institutions’ have a positive significant association with good corporate governance. However, one criticism might be that Hawas and Tse (2016) combined Pension and Insurances into one group, whereas previous research has often categorised instructions by the term ‘pressure sensitive’ and ‘pressure insensitive’ (David et al, 1998; Muniandy, et al, 2016; Hutchinson, et al 2015; Almazan, et al 2005). Insurance has been categorised as pressure sensitive due to potential business relationships, while pensions have been categorised as ‘pressure insensitive’, and this means that these two groups could be acting quite differently and thus, any differing corporate governance preferences maybe masked in their results.

Bushee et al’s (2013) approach differed from Chung and Zhang’s (2011) and Hawas and Tse (2016), as they began by identifying who the actual institutional owners are (e.g. Barclays) and then labelled them as governance sensitive if their portfolio consisted of companies with good corporate governance. Then it examining to see if these institutions belonged to a certain group (i.e. banks). Whereas both Chung and Zhang (2011) and Hawas and Tse (2016) firstly categorised the institutional into different types. Chung and Zhang’s (2011) primary objective was to examine whether each institution has a positive relationship between good governance and ownership, which they find, however they were not examining the differences in preferences. Where, the list of sensitive institutions is not from one particular group, but a higher number are from banks and pensions Bushee et al (2013). This is what Bushee, et al (2013) expected because of their greater fiduciary responsibility. From the examination of Chung and Zhang’s results find that the institutions that have the largest impact on corporate governance are in order of importance; banks; independent investment advisors; investment companies; other institutions, pensions funds, foundations, university endowments; and insurance companies. Both papers agreed that banks prefer
good governance, but only Bushee et al (2014) find that pension funds also had a preference. This may be due to Chung and Zhang (2011) grouping of pension funds with other institutions, thus making it impossible to truly identify their preference.

Chou, Ng, et al. (2007), find consistent evidence from the US in 2004 that mutual funds were not corporate governance sensitive, with only 21% of their sample that is governance sensitive, this included 14% that were sensitive for well governed companies and 9% that were sensitive to badly governed companies. It also did not make a difference for how well the funds are governed and their corporate governance preferences. Chou, Ng et al (2007) use the Morning Star Rating for the governance of the mutual fund as a proxy for the governance and the G index (Gompers) and the Entrenchment index for proxies for corporate governance.

McCahey et al (2008) find that from their survey on corporate governance preferences of institutional investors that most important internal mechanisms are ranked as follows (with the percentage being the number of institutions who ranked it as important):

1. Equity Ownership by executives (87%)
2. Majority of independent directors (86%) and use of equity-based compensation (86%)

External mechanisms are ranked as follows:

1. Transparency about the holding of large shareholders (85%) and high free float (85%)
2. Ownership concentration (80%)

Where hedge funds find equity ownership by management the most important mechanism, where mutual funds ranked ownership by management and transparency about large shareholders, as their most important elements. Insurance companies valued high free float the most, whereas and pensions funds ranked board independence the most important.

Faccio and Lasfer (2002) examined the impact of pension fund ownership had upon corporate governance departures, as defined by the then Combined Code. They devised a sample of 289 UK firms from 1995 to 1996, where one is a group with pension fund holdings of 3% and above and the other is a control group. Finding that when there is little evidence
to support the view that pensions fund ownership influences the board structure. These results may be explained by Hoskinson, Hitt, Johnson and Grossman (2002) who find that pension fund managers preferred internal directors, while other fund managers preferred external fund managers, based on a sample from S&P companies from 1985 to 1991. However, this could have possibly changed over recent years with the growing emphasis on corporate governance and the independent directors (e.g. The Cadbury Code 1992, and more recently the Walker Review 2009).

4.7.2 Financial Reporting Environment and Institutional Ownership
The rationale for research on earnings myopia and institutional ownership is that has been argued that institutions are monitored by their short-term performance and bonuses are paid for meeting these short-term targets (Bushee, 1998, Black 1992; Wahal and McConnell, 2000; Myner Review, 2001; O’Barr and Conley, 1992). Both Bushee (1998) and Wahal and McConnel (2000) tested to see if there was a relation between earnings myopia and the level of institutional ownership in the US. Both used cutting R&D spending for a proxy for earnings myopia and Wahal and McConnel (2000) use the level of property plant and equipment (PPE) as well. The reasoning for R&D spending is that it is required in the US for R&D expenditure to be immediately and fully expensed, unlike in the UK where research is expensed and development (meeting certain criteria) is capitalised. PPE is used as it is depreciated and this would reduce earnings and the benefit from the PPE may not show for many years. Both find that firms with a higher level of total institutional ownership are less inclined to reduce R&D spending, Wahal and McConnel (2000) found the same for PPE.

Wahal and McConnel (2000) went on to examine to see whether institutions have a higher portfolio turnover, making the possibility of earnings myopia worse. This is done by splitting the institutions into quintiles based upon the level of portfolio turnover and then regressing it against R&D and PPE. Finding that there was no support for this hypothesis. Bushee (1998) finds conflicting evidence when a firm has a higher proportion of ownership by institutions that have high portfolio turnover and momentum trading, the directors were more inclined to cut research and development expenditure to meet short term targets. Where high portfolio turnover, is defined by the average change in institutional ownership and the percentage of institutional equity invested in for two years continuously for the prior period and the momentum strategy is defined by three factors; the change in a firms
institutional ownership in a quarter; whether an institutional owners investment mirrors the
firms earnings (e.g. profits go up, they invest more); the difference between the average
earnings change when institution increases its holding and the average earnings change
when the institution reduces its holdings. The results could be conflicting as there were
slight differences in their measure, as Bushee (1998) included momentum trading where
Wahal and McConnel (2000) did not.

Both Black (1992) and Bushee (1998) argue that institutions are not myopic. As Bushee
(1998) finds that only 24% of their sample were classified as transient institutions.

O’Sullivan (2000) finds from 1992 data from that there is no evidence that block
shareholders had an influence on the level of audit fees. Adelop, Jallow and Scott (2012)
find that there is evidence that audit fees decrease with the number of block-holders with
ownership above 3% for the reporting year of 2005/06 for FTSE 350 companies. The results
were explained by stating it is thought that the increase in block holders is an indicator of
monitoring, thus having a beneficial effect on audit risk, thus lowering audit fees. Although,
when the percentage ownership is examined against the audit fees, the results showed
inconsistent results with only one of their models showing a positive relationship between
audit fees and the percentage total block ownership, however Adelop et al (2012) is
examining total ownership and not excluding other types of owners such as large corporate
block owners, which may have a different effect on the level of fees.

There is a positive association between audit committee activity and the number of block-
holders (Adelop et al, 2012). Adelop, et al (2012) find that with the increase in audit
committee activity there is an increase in audit fees, it is explained by the possibility that the
number of meetings increased the demand for extra reassurance and purchased more audit
services.

Kane and Velury (2004) find that there is a positive association between the percentage of
institutional ownership and employing larger audit firms. Kane and Velury (2004) are
assuming that audit firm size was a proxy for quality, or believed quality, as at the time the
study was done (1992-1996) the audit environment was quite different to today. More
recently, Han, Kang and Rees (2013) have added to Kane and Velury (2004) findings, in that
firms that have long-term institutional owners are more likely to employ big four auditors,
whereas there was no association between audit choice and transient institutional owners. This adds to the evidence that institutional influences are not homogenous. However, in Han et al’s (2013) find that when there are transient institutional investors the audit fees are higher, unlike with long-term institutional investors, who there is no association between fees. Han et al (2013) explain this by saying “those institutions with a long-term stake in the firm – have an incentive to monitor management and thereby, demand a higher quality audit by a Big 4 auditor. This result suggests that the monitoring role of institutions, but not short-term institutions, provide some “indirect” monitoring by encouraging the firm to improve corporate governance through the adoption of high-quality audit” p 218

In Hawas and Tse (2016) broke down their corporate governance index where audit accountability was defined by the following factors; whether the company had an audit committee; audit committee members being independent non-executives; at least one member of the audit committee being a financial expert and the board meeting annually to discuss internal controls. This sub index has a positive association when Hawas and Tse (2016) categorised the major shareholders into the group of Pensions and Insurance, suggesting that this group of institutional investors are sensitive to the audit committee composition and the control environment. However, Hawas and Tse (2016) did not find a significant association between their audit rating and major share ownership. Chung and Zhang (2011) tested to see which of their governance variables, that they used to form their index had a significant association between total institutional ownership, one of the variables was the independence of the audit committee and this variable was not found to have a significant association in its own right.

4.7.3 Board of Directors and Institutional Ownership
Kurshed et al (2011) found that institutional block-holdings in levels of >3%, 5%, 10% and 20% in the UK in 1996, 1999 and 2003 using annual observations of institutional ownership that there are consistently negatively associated with directors’ ownership for all block-holding thresholds for all sample years except for the 10% threshold in 1999. The findings exclude the possibility that institutional block-holders do not invest in companies with high directors’ ownership because of potential management entrenchment. Kurshed, et al (2011) showed this by doing another test, where the sample by mean of directors’ shareholdings (ie.0.07) is split, firms with directors’ shareholdings and institutional block-holding in both
subsamples. This indicated that there is a negative association between managerial shareholding and institutional block-holding even where the level of managerial shareholding is low.

Chung and Zhang (2011) find that there is a positive association between good board structure and total institutional ownership. Hawas and Tse (2016) found similar results but with major shareholdings and other institutional shareholders as dependent variables and board structure. Good board structure in all cases includes elements such as the proportion of independent directors. This evidence suggests that institutional shareholders are particularly sensitive to the board. Also Bushee, et al (2013) find that their proxy for corporate governance that related to the board showed a positive significant association.

4.7.4 Institutional shareholdings and Remunerations
David, Kochhar and Levitas (1998) and Hartzell and Starks (2003), find that there is a positive effect between the higher level of institutional ownership and the higher percentage of performance related pay for directors. David et al (1998) find that pressure resistant owners are more likely to influence the company to have a CEO compensation that related to shareholder preferences, which are lower salary and a higher proportion of long-term incentive pay. Hartzell and Starks (2003) employ a simpler methodology by testing the level of institutional ownership and performance related pay, where pay for performance is positively correlated between Institutional ownership concentration and compensation is negatively correlated to it. Finding that institutions are attracted to companies with higher pay performance; however, when the level of institutional ownership changes, so does the incentive compensation, but when the incentive compensation changes the level of institutional ownership do not. Smith and Swan (2014) find conflicting evidence to Hartzell and Starks (2003), where concentrated institutional ownership did not have an effect on executive pay. The conflicting evidence could be explained by the fact Smith and Swan’s (2014) study extended from 1992 to 2010. In addition, the measure of the concentration of ownership was different; Hartzell and Starks use the Herfindahl index unlike Smith and

26 which is a commonly used ratio to show market concentration and the number of shares owned by the five institutions who owned he most in that firm year instead of top 5 ownership are the proportion of shares outstanding and the percentage total institutional ownership against outstanding shares and the usage of size as a control instead of using the natural log (Hartzel & Starks, 2014)
Swan (2014) Hartzell and Starks (2014) re-ran the tests in the extended period and finding there is no difference in results for the control for size. Thus, Hartzell and Starks (2014) concluded the difference in results are because of the ‘inferior’ measure of concentration. Smith and Swan (2014) concluded that evidence is not sufficient to conclude that there is an association between executive compensation pay and institutional ownership, where the pay was the dependent variable.

Almazan, Hartzell and Starks (2005) find that from 1992 to 1997 for firms covering roughly 1,500 firms per year from S&P find that more active investors can provide better monitoring of corporate management and pay for performance sensitivity is greater in the concentration of active institutions and there is a stronger association with more active investors than passive investors. Potentially active investors included investment advisers and investment companies, while the potential passive category included bank trust departments and insurance. The other category is a mix of endowment funds, self-managed corporate pension funds and a few public pension funds and because of the mixture of their active and passiveness Almazan et al defined them as passive. The results are similar to David, Kochhar and Levitas (1998).

Gregory-Smith (2013) UK based study examined outside ownership as a control variable in the study on the level of independence of the remuneration committee and level of CEO pay, that was discussed previously in section 4.4. Again, finding that there is a negative association between CEO pay and larger outside ownership.

From the literature already reviewed on this topic area it has been established that most evidence supports the view that institutional ownership in its various forms has a positive impact on directors’ remunerations (Gregory-Smith, 2013; Almazan, Hartzell and Starks, 2005; David, Kochhar and Levitas, 1998 and Hartzell and Starks, 2014 and 2003). So the next question is how active are institutions in voting on directors pay? In the UK companies have been able to vote on directors’ remunerations since 2002 (Canyon and Sadler, 2010), so it is interesting to see how many actually vote for or against pay resolutions. Conyon and Sadler (2010) find that when examining around 200 large UK public firms from 2002 to 2007 that less than 10% of shareholders abstain or vote against the directors’ remuneration report and the percentage got lower over time. Although, shareholders are more likely to vote
against pay resolutions than any other resolution, even then only around 2% abstain or vote against. This provides evidence of the view that shareholders consider remunerations to be of importance. When Conyon and Sadler (2010) analysed further the association between shareholder dissidence on CEO pay finding that unsurprisingly dissidence is higher in firms with larger CEO pay, however, there is little evidence that firms that experienced this dissidence have lower CEO pay the following year as Conyon and Sadler (2010) expected. This suggests that the shareholder activism in the guise of voting on directors’ remunerations has made little impact on the level of CEO pay. Although in previous studies, it has been suggested that shareholder activism is more successful if the shareholder influence the company before the vote, and actually if shareholders have to vote against a resolution it suggests that the firm is not swayed by the shareholders’ views (Gillian and Starks, 2000)

Different to the other studies presented in this chapter Chung and Zhang (2011) uses institutional ownership as the dependent variable and corporate governance as the independent variable, to examine if institutions choose firms with good governance, whereas the studies outlined above are examining if the institutions influence pay. In Chung and Zhang (2011) study they examined to see which of the elements of their governance index were significant and the variable relating to remunerations were not, suggesting that institutions do not tilt their portfolios to firms that have good remuneration policies.

4.8 Summary
This chapter has reviewed the literature on corporate governance and has discussed the most important elements that determine whether a firm has good governance. The chapter has reviewed the requirements of the ‘The Code’ and examined it in conjunction with academic findings.

The board of director should have independence and should not be dominated by one person according to ‘The Code’. The evidence suggests that firms are not always hindered by a CEO and chair occupying dual roles (Boyd, 1995; Baliga et al, 1996; Cornette et al, 2007; Shama, 2004), however, firms with CEO duality had worse corporate governance (Finkelstein and D’Avanti, 1994; Elsayed, 2007).
The literature supports the view that the market prefers annual election (Guo, et al 2008; Cohen and Wang, 2013). However, this could imply the markets are not in favour of takeover defences, not that they actually erode value.

Agency theory is concerned with the division of interests between owners and management and one of the suggested solutions is to appoint independent directors onto the board to help prevent too much self-interest of the executive directors. The research broadly supports this view, as the independence of directors finds that the presence of independent directors are either beneficial (Kini et al, 1995; Mehran, 1995; Xie et al, 2003; Cornett et al, 2007; Zalata and Roberts, 2016) or neutral (Bhaght and Black, 2002; Vafea and Theidirou, 1998; Black 1998).

Other areas of importance in corporate governance are the size of the board and directors’ dedication. It is found that smaller boards are beneficial (Yermack, 1996; Dalton, et al 1999; Eisenburg et al, 1998) this supports the standpoint that a too large board can be unwieldy and hard to create cohesion. Although more complex firms can benefit from the expertise a larger board brings (Coles, Daniel and Naveen, 2008; Xie et al, 2003; Walker Review, 2009). Director’s dedication is frequently measured by the number of directorships a director has and cites them as being harmful to the firm they are an executive director due to the lack of time spent directing. However, the evidence is mixed with a large body of evidence supports the view that they not harmful (Kiel and Nicholson, 2006; Geletkanycz and Boyd, 2011; Jagannathan and Pritchard, 2003), although when examining the association further it is evident that the number of directorships became harmful when there was three or over directorships (Fich and Shivdansani, 2006; Cashman et al, 2012; Kaczmarek, 2014).

As part of the agency problem there is concern that directors can pay themselves excessive remunerations and one way to control this is to have independent directors on the remunerations committee, however there is little or no evidence that the independence of the remuneration committee is associated with less pay for directors (Daily, Johnson, Ellstrand and Dalton (1998), Anderson and Bizjak (2003) Conyon and Peck (1998) Gregory-Smith (2012).

It is important for an audit committee to have both independent directors and a financial expert, as this benefits the firm (Xie et al, 2003; Badolato et al, 2014; Zhang, et al 2007;
Klien, 2002). However, the belief that non-audit services lead to impaired independence is not always consistent with the evidence, as Callaghan et al (2009); Defond et al (2002); Geiger and Rama (2003) Ghosh, et al (2006) all find no evidence to support non-audit services impaired independence and others finding non-audit fees impaired independence (Frankel, Johnson, and Nelson, 2002; Francis and Ke, 2006).

The research on the area of how or if institutional investors tilt their portfolios to firms with good governance is limited. Where Chung and Zhang (2011) find that there a positive association between total institutional ownership and good governance, similarly Bushee et al (2013) find a significant association between their board index and good governance the board characteristics and no significant association with the investor rights index. Hawas and Tse (2016) find a positive association between major shareholders and their governance index, suggesting that institutional investors tilt their portfolios to firms with good governance.

The following chapter outlines the research hypothesis for the thesis by amalgamating the theories developed in the theoretical review chapter (chapter two), the institutional ownership chapter (chapter three) and this chapter.
Chapter Five

Hypothesis Development
5.0 Hypothesis Development

The study uses a proxy measure for corporate governance developed by ISS (RiskMetrics). The proxy measure is broken into three sub-scores on the following aspects of corporate governance:

- Audit environment (board score);
- Board composition (board score);
- Directors Remunerations (compensation score).

In addition to these sub-scores there are two proxy measures used for overall corporate governance (INDEX and INDUSTRY). The hypotheses are developed based upon how the institutional ownership is influenced by corporate governance, based upon these proxies.

This chapter is the discussion on how the hypotheses have been developed, by summarising the literature from the previous three chapters. The chapter breaks down each area of the research and addresses how the study is going to meet the aim, which is to discover if there is an association between institutional ownership and good corporate governance. The chapter covers the following sections:

- Audit environment;
- Board composition;
- Directors remunerations;
- Corporate governance;
- Typology of the institutional investor.

5.1 Audit environment

There is no directly comparable research into this area, so this section examines each element of the audit score and draws from the literature to review arguments for or against a positive association on total institutional ownership.

The audit environment comprises of four areas; audit fees in relation to non-audit fees; disclosure of the tenure notice; audit ratification and the audit committees. These areas are not just the accountability of the auditors, as it includes the audit committee independence and this is part of the audit environment, as they interact with the auditors, but the audit
committee is not a part of the auditors’ accountability (independence of auditors). It has been defined as audit environment, as it is not simply the independence of the external auditors, which can be measured by the audit fees, and the audit tenure notice is decided by the company and not the auditor. Whereas, the audit committee is indeed responsible for reviewing the independence of the auditors, but also need to review the integrity of the financial statements, making it a wider definition of the audit environment.

Similar research by Hawas and Tse (2016) examined the association between audit accountability and major shareholdings. Only one element is similar to this research on the audit environment, also Hawas and Tse research was based on a sample of FTSE 350 firms 695 firm years compared to this study that has 1470. Furthermore, Hawas and Tse examined major shareholders where this research focuses specifically on institutional shareholders. Hawas and Tse (2016) did not find an association between the audit accountability index and the level of major shareholdings.

**Audit Fees**

The issues with non-audit service fees being greater than audit fees are threefold. Firstly, it is argued that increasing the level of non-audit fees increases the dependence on the client. Secondly, it can increase the chances of self-review and finally it could increase familiarity between the client and the auditor. Telalagul and Lin (2015) argue that the SOX Act of 2002 was motivated by the belief that economic bond would impair independence.

Despite this view from regulators (FRC, 2016b), in both the US and Europe, there is little evidence to support this view from academic studies. With studies finding there no evidence that the propensity to issue going concern opinions and the level of non-audit fees (Callaghan, Parkash and Singhal, 2009, Defond, et al 2002, Geiger and Rama, 2003). However, there is some evidence that there are negative abnormal returns when disclosing information about high non-audit fees (Frankel, 2002; Francis and Ke, 2006), although Ghosh, et al (2009) finds no significant association. Despite the conflicting evidence on this area, when both institutional ownership and non-audit fees are higher, there is a positive association for voting against the renewal of the auditors’ contract (Mishra et al, 2005; Cunningham, 2017), suggesting that shareholders do not support high non-audit fees.
Given the findings of Mitra and Hossain (2007), Mishra et al, (2005) and Cunning (2017) it is argued that total institutional ownership should be higher when the non-audit fees are less than audit fees.

**Tenure**

This study is not specifically examining audit tenure, but the disclosure of the policy on audit tenure. There appears to be very little evidence on this subject area, however there is more research on how the length of tenure does or does not impair audit quality (Zhang, Zhou, and Zhou, 2007; Popescu, 2013; Geiger and Ragunandan, 2002; Carey and Simnett, 2006; Deis and Giroux, 1992; Knechel and Vanstraelen, 2007). There are two arguments about how the length of audit tenure can impact audit quality, the first being that the longer the tenure, the better the auditor gets to understand the business and thus can improve the audit quality. The counter argument is based on independence issues, as the longer the auditor tenure the closer the relationship is and the auditor may begin to act like management (Tepalagul and Lin, 2015). From the literature, in this area, there is little evidence that tenure impairs audit quality (Geiger and Ragunandan, 2002; Knechel and Vanstraelen, 2007).

However, Manry, Mock and Turner (2002) find that audit tenure is not associated with quality for large firms, whilst it is negatively associated with small clients. This provides evidence that investors may differentiate the views on the audit tenure policy. In addition, given that there is no clear evidence about audit tenure and eroding quality, it could be argued that audit tenure impacts are firm specific and not general, so not every firm with a long serving auditor gets a poor quality audit, but some do. Therefore, investors being informed of the policy would help them judge whether they think the tenure policy would impact earnings quality or not. Thus, it argued that disclosure of rotation policy would have a positive impact on total institutional ownership.

**Audit Ratification**

Audit ratification is a not a relevant issue in the UK, as the Companies Act 2006 S485, part 3-4 states that directors can appoint an auditor without the approval of the shareholders during the year, but it must be approved at the following AGM. Thus, there will be little variation between UK firms on this point.
Audit committees

The audit committee takes an overview of all of the elements discussed above, thus having a direct impact on these areas. The audit committee should consist of solely independent directors according to the UK Code on Corporate Governance (2016). Independent directors make better monitors of the integrity of the financial statements as there is a negative relationship between the proportion of independent directors on the audit committee and on the board and the extent of abnormal accruals (Klein, 2002). Given this information, it would be expected that the level of independence on the audit committee would have a positive effect on the amount of institutional ownership.

5.1.1 Total Ownership

The hypothesis related to total institutional ownership is used to help partially address the research question is there a particular element of whether institutions tilt their portfolios to all elements of corporate governance or is there a certain area the institutions more focused upon.

As discussed in the previous section all four factors of the audit score are expected to have a positive impact on the total institutional ownership. In addition, in the Theoretical Review chapter outlined the arguments for why institutional investors would be motivated to tilt their portfolio to firms with good overall corporate governance, one of the arguments was based upon the view that institutions would prefer to invest in firms that had lower incidences of creative accounting as it would have a detrimental effect on the investee firms share price and could harm the institutions reputation. As the audit environment is intrinsically linked to the incidences of accounting manipulations and any improvements in the environment would be preferable to institutional investors’. Also in a better an audit environment, managers are more likely to be better informed on risk (Elshandidy, Fraser and Hussainey, 2013), thus reducing the risk. Thus, the hypothesis is:

H1a – There is a positive association between total institutional ownership and audit score.

5.1.2 Block-Ownership

This study is examining the impact of different levels of institutional block ownership have upon the association with the audit independence. As established in H1a it would be expected that there a positive association between the audit score and total institutional
ownership. This section discusses if there is a possible difference in the level of ownership and the association.

Cunningham (2017) argues that large block holders (5% and above) in the US would not be so reliant on proxy advisory services like Glass and Lewis on how to vote for audit ratification, as they would use their own investigations into these matters. If this argument were to be extended, it could be said that large block-holders might not use services like Risk Metrics (ISS) to establish the level of audit independence, as they would use their own resources, possibly making the association between the risk metrics audit score and ownership less at the higher levels.

Bukart, Gromb and Panunzi (1997) argue that dispersed ownership leads to less interference in management decisions, whereas more concentrated ownership leads to more control over management and reduces the chances of keeping a bad manager. This would give rise to the view that if concentrated owners have more control then there is less need for them to withdraw from a company, as they can already exercise control over audit independence if they view it to be an issue. In addition, larger owners mean that there is less liquidity in the shares, so are less likely to be able to sell their shares.

The hypothesis for this section is partially answering the research question “Do institutional investors’ preferences change when they have different levels of block-ownership?”

Overall due to these reasons stated above the hypothesis is:

H1b Where block-ownership is greater there will be less association between institutional ownership and the audit score.

The arguments for the hypothesis compliment theoretical review chapter, as the theory that the diversification of portfolios may reduce the time actively monitoring the, thus there is an argument for using good corporate governance as a substitute for monitoring and that the cost of activism may not be worth it if the stake was not large enough (Del Guerico and Hawkins, 1999). Thus firms with smaller block holdings may rely on the governance more, because of the monitoring costs not being cost efficient.
5.1.3 Time-Frame

Hawas and Tse (2016) found that there was a difference in the association between general corporate governance and total major ownership, as there was no relationship pre-crisis and then during the crisis, there was a positive association between the quality of the corporate governance and total major ownership. However, they did not find a difference in their audit score before the financial crisis and during. Although, given that the audit score only had one factor similar to this study (independence of director) it makes it difficult to compare.

However, if the theories of the financial crisis being a critical juncture and limited attention theory are used it could be hypothesised that institutions should put a greater emphasis upon the audit score. As it has been explained that it could be described as a critical juncture for financial institutions as there was growing pressure upon them to take more responsibility for monitoring and their investment choices (Walker, 2009; Kay, 2012). However, it could also have been described as a critical juncture for the audit profession, as there was mounting pressure on the audit profession to be more independent of their clients (House of Commons Treasury Committee, 2009; European Commission, N.D, Hooke, 2014) and a general criticism for their role in the financial crisis. In addition, the collapse of high profile banks in 2008 e.g. Lehman Brothers, Merrill Lynch, HBOS and The Royal Bank of Scotland, who all had clean audit reports prior to their collapse, with no mention of possible going concern issues (Lehman Brothers, 2007; Merrill Lynch, 2007; HBOS, 2007, The Royal Bank of Scotland, 2007). Institutional investors may have become somewhat concern with the possible failure of auditors and the institutions’ priorities may have been readjusted.

Therefore, if these two pressures are combined it would be expected that institutions would be more concerned with the audit environment of a firm before investing.

Despite the argument for the financial crisis being a critical juncture for both institutions and the audit profession, Hawas and Tse (2016) did not find an association between audit environment and major shareholders. These results could have been partially because the limited attention theory (Hirshleifer, and Teoh, 2003). As explained in the theoretical review, if the information is not prominent and easy to understand then it may not be incorporated into the decision, and Hawas and Tse (2016) used information from annual reports to build a picture of corporate governance. Whereas this research uses a simple ISS
(RiskMetrics) proxy for the audit environment ranging from 1 to 5, thus it is far more simple to understand and according to Hirshleifer, and Teoh, (2003) this type of information would be more likely to be incorporated into the economic condition.

However, with the general focus around audit and the lack of perceived independence during the study period it would be expected that institutions should take more of an interest in this, thus the hypothesis is:

H1c - There is an increase in the positive association between the institutional ownership from before and after the financial crisis of 2007-8 to the audit score.

This hypothesis helps partially answer the following research question “Given the study period, were there any changes in the association between institutional preferences from pre-financial crisis, during the crisis and post crisis?”

5.2 Board Remuneration

ISS (RiskMetrics) give firms a score for the board remunerations based on the following areas; independence of the directors on the compensation committee, pay for the directors being partially in options, reasonableness of the option plans or too many options, shareholder approval of option plans and repricing of options and that options should be accounted for as an expense. See Appendix A for more detail.

Independence of directors

The UK Code on Corporate Governance (2016) states that pay should be recommended by the Remuneration Committee before it is passed for approval by the shareholders. It states that the Committee should be composed entirely of independent directors. Non-executive directors should not be included in share options or other performance related elements (D.1.3). The Code states that “executive directors’ remunerations should be designed to promote the long term success of the company. Performance-related elements should be transparent, stretching and rigorously applied.” (FRC, 2016a p 20 D.1). During the study period 2006-2010 the regulations were from the Combined Code, which contained similar principles to the ones in now UK Code on Corporate Governance (FRC,2016a), however the Combined Code did not make it so clear that pay should be linked to long term interests on the firm (FRC, 2009).
As the UK Code on Corporate Governance and the Combined Code are/were both comply or explain it would be expected that there is a good variation of independence of the remunerations committee and how reasonable the option plans are.

**Voting on pay**
Currently, in the UK, quoted companies must have their remuneration policy approved by ordinary resolution by its shareholders every three years in a binding vote. This was after the adjustment of the 2006 Companies Act by the Enterprise and Regulatory Reform Act 2013. The study period for this research is between 2006 and 2010, thus the changes were not in force. In the UK at this time, shareholders were able to vote on directors pay, but it was not binding.

This element of the governance score rewards companies that allow voting on pay regardless of whether it is binding. Thus, there would be no variation across UK firms. Due to this, there will not be a discussion on this element in the hypothesis development section.

**Options as an expense**
The accounting of an option payment according to IFRS 2 Share-based Payments the payments must be made as an expense (IFRS, 2016). Thus, there will be little variability in this element of the score. Because of this, there will not be a discussion on this element in the hypothesis development section.

**5.2.1 Total Ownership and Compensation**
None of the similar studies examines total institutional ownership as the dependent variable and pay as an independent variable, so it is difficult to draw a direct comparison. The existing research is examining the impact of ownership on the payment schemes for directors, whereas this study is examining if institutional investors are attracted to firms that have pre-existing good compensation schemes.

Only around 10% of shareholders vote against the directors’ resolution or abstain in the UK. Despite this figure seems low, it is not low in comparisons to those shareholders that vote against or abstain for other resolutions, which is around 2% (Conyon and Sadler, 2010). This suggests that shareholders are interested in directors’ remunerations, as so many of them would not vote against/abstain if they do not consider remunerations as important.
There is evidence of a positive correlation between the proportion of directors’ remuneration that is performance related and levels of institutional ownership (David, Kochhar and Levitas (1998), Hartzell and Stark (2003, 2014), Almazan, Hartzell and Staks 2005; Gregory-Smith, 2013). The measure that Risk Metrics (ISS) used to measure the reasonableness of the option plans is not outlined in detail, however, it does state that reasonableness is compared to the industry that they are in.

From the research, there is little evidence that the independence of the remuneration committee members has any impact on the level of directors pay (Daily, Johnson, Ellstrand and Dalton (1998), Anderson and Bizjak (2003), Conyon and Peck (1998) Gregory-Smith, 2013). However, this study examines the preferences of institutional shareholders; despite the apparent lack of impact an independent remuneration committee has, it might be reasonable to assume that institutions would prefer the remuneration committee to be more independent than less. If a firm does not have an independent remunerations committee then this could be perceived as a signal to the markets that the firm does not consider this to be of importance and might suggest there are wider issues about the firms’ compliance to overall views of shareholders and ‘The Code’ (FRC, 2016a) and thus might make institutions wary of investing in a firm like this.

Drawing upon the theory presented in the theoretical review chapter, it could be hypothesised that institutions would prefer a firm with an independent remunerations committee, as this would require less monitoring on their behalf, which has been described as an agency cost born by the institutions. Thus it is argued that institutions would prefer firms with better remuneration governance.

Thus, overall given the evidence discussed in this section it would be expected that institutions as a whole would tilt their portfolios to firms with good compensations scores.

H2a There is a positive association between total institutional ownership and the compensations score.

The hypothesis helps answer the research question about whether there a particular element of whether institutions tilt their portfolios to all elements of corporate governance
or is there a certain area the institutions more focused upon, by addressing the remuneration governance.

5.2.2 Block-ownership
This is going to discuss the impact block-ownership levels may have on the view that institutional ownership as a whole would be positively associated with compensation score.

There are similar arguments to those previously considered for the audit score and block ownership, such as the amount an investor may use proxy services such as ISS (RiskMetrics) will reduce when an institution has a greater stake. However, there is one key difference here, institutions can vote against pay and the larger the block in the firm, the more votes, thus bigger influence. The evidence also suggests that the more concentrated the ownership, the bigger the influence they have on pay (David, Kochhar and Levitas (1998), Hartzell and Stark (2003, 2014), Almazan, Hartzell and Staks 2005), so the less the institution would care about the independence of the board. Reasonableness of pay should be of interest of all investors; however, the level of influence larger block owners have over setting pay may mean that they are more interested in the fundamentals of the firm, as they can change the pay anyway. Giving rise to the next hypothesis:

H2b Where block-ownership is greater there will be less association between institutional ownership and the compensation score.

5.2.3 Time-frame
Post the financial crisis there are a wave of regulation around directors pay including Dodd-Fransks (US), Binding say on pay (UK) Abzocker (Switzerland) (Enterprise and Regulatory Reform Act 2013; Iliev and Vitanova, 2013 and Shotter and Barker, 2013) and many more. It was clear that this business environment condemned excessive pay and put some of the blame of the financial crisis on the levels of pay. The Committee of European Banking Supervisors (CEBS) published its guidelines on Remunerations Policies and Practices in December 2010 (CEBS, 2010) where it states that there should be a cap on bonuses for banks operating in Europe. Suggesting that the institutions themselves were in the spotlight for their remuneration packages. In relation to the theoretical review, the hypothesis is based on the theory that the financial crisis was a critical juncture for institutional investors. Given the evidence of the increased regulation on pay, this would support the view that
there was a change in attitude towards directors pay. In addition to the arguments presented above and the evidence presented for H1c it is expected that institutions have a greater interest in the reasonableness of pay and the independence of the compensations committee, thus giving rise to the following hypothesis:

H2c There will be increasing in a positive association between total institutional ownership and compensation score from before and after the financial crisis of 2007-8.

Again the hypothesis on how the association between total ownership and compensation score has increased after the financial crisis helps answer the question about how the association changes over the study period.

5.3 Board Structure

This section discusses the development of the hypothesis on how the ISS (RiskMetrics) board score is associated with institutional ownership. It firstly establishes each element of the board score and discusses how each element is expected to be associated with institutional ownership. The board score is the most comprehensive of the sub-scores by ISS (RiskMetrics) and contains the most elements. The board is a fundamental aspect of corporate governance, as the board is the backbone of the other elements aspects of corporate governance. If there are issues in the board then these would be reflected in both the audit score and compensation score, however, there is little overlap between these scores interactions and the board score.

In the study the term board structure has been used to define the boards as a whole, it includes the independence of the board members, the level of dedication by the board and remuneration and nominations committees, how the directors are appointed.

5.3.1 Independence of Board

Former CEO

According to the board score, there should be no former CEO Directors on the board. The reason given for this is that the CEO can interfere in the new CEO work and hinder them in making necessary changes. According to a survey of 1,000 directors by the magazine, Corporate Board Member with PricewaterhouseCoopers in 2003 found that only 25.3% of survey respondents said that it was a good idea to have the former CEO on the board (cited
from Fahlenbrach et al (2011)). There is mixed evidence about how it impacts performance with Quigley and Hambrick (2012) finding that the presence of the former CEO is associated with a negative effect on financial performance. Zhang and Rajagopalan (2004) suggested it depends on the type of succession, while Fahlenbrack et al (2011) finding there is a positive association with performance. The counter argument in favour of the former CEO on the board is that they will help with the transition and education of the new CEO that could improve the financial performance, as Fahlenbrach et al (2011) find that the better the CEO the more chance of reappointment.

From the academic literature, there is no clear indicator of how institutional shareholders may view this; however, the survey from Corporate Board Member magazine suggests institutions are in favour of not having a former CEO on the board, thus it may be hypothesised that there would be a positive association between institutional ownership and this element of the board score.

CEO Duality
There is a view that the issue with duality is the misuse of power that may occur because of the position (Lipton and Lorsch, 1992), however, the evidence on CEO duality impact on performance is mixed, with some research finding that there is a positive association between CEO duality and performance (Duru, 2016) and others finding no association (Boyd, 1995; Baliga, Moyer and Rao, 1996, Cornett et al 2007). There is a view that there are costs associated with CEO duality, thus when there are difficult financial conditions, duality is actually beneficial or in certain types of business (Finkelstein and D’Aveni, 1994; Yang and Zhao, 2014). In essence the benefits of duality are unclear, with a balance between the speed of the decisions the CEO needs to make what damage the dual CEO can do with too much control, thus it would be expected that this element of the score would have a null effect on institutional ownership, as it depends on the firms.

Related Party Transactions
To enable a firm to have a better board score then the firm must not have directors with related party transactions. In the UK, it is possible for directors to have related party transactions and including director’s loans, as long as they are disclosed (Gov.uk, 2017). This contrasts with the US where Sarbanes Oxley banned directors’ loans in 2002. This demonstrates a different viewpoint from the US and the UK. Kohlbeck and Mayhew (2010)
find that related party transactions were also detrimental to a firm’s financial performance. Thus, given the evidence against financial performance and the general view from the US that some related party transactions are not beneficial and large institutional investors are global and may indeed take on a similar viewpoint to the US regulators, therefore it may be expected that institutions would favour investing in companies that did not have related party transactions.

**Board Independence**
The board score suggests that the board should consist of 2/3rds independent directors. There is evidence that the presence of independent outside directors has a positive effect on a firms’ corporate governance (Kini et al, 1995; Mehran; 1995, Xie, Davidson III, DaDalt (2003); Cornett et al, 2007). Although Black (1998) states there was no clear evidence that the presence of outsider directors has a positive impact on performance. It would be expected that institutional owners would be in favour of higher levels of independence. Further support for this is provided by Hawas and Tse (2016) who find that their proxy for board corporate governance, (which included board independence as one of the elements) and major shareholder ownership was positively associated.

**Nomination committee**
The board score requires companies to have only independent directors on the nominations committee, this is unlike the Code that only requires the majority of directors to be independent (FRC, 2016a). It was found that if a CEO was involved in the appointment of directors the share price reacted negatively (Shivdasani and Yermack, 1999). The difference in viewpoint from RiskMetrics and the Code could have an impact on how important institutional investors view this. It could be that UK Institutions do not think this to be as important whereas US do, as the evidence on the impact on share price was US based data. Thus, given the makeup of the investors in the UK where a substantial amount of shareholders from overseas (ONS, 2010) they may not be a homogenous group, thus there being no effect upon institutional investors choice.

**Remuneration Committee**
The board score states that companies should have a remuneration committee composed entirely of independent members. As stated in the remuneration hypothesis for the
previous section it would be expected that institutional shareholders would prefer firms with independent remunerations committees.

**Governance committee**
The board score has a part for the presence of the governance committee. However, in the UK it is not a general requirement by the Code (FRC, 2016a) to have a governance committee. Thus, there is little variability across the UK as there is a distinct absence of any governance committees; therefore, this is an irrelevant element of the board score.

**Board size**
Risk Metrics score for board structure suggest the board size should be between 6 to 15, with ideal 9 to 12. Research has shown that financial performance is hampered by larger boards (Yermack, 1996). In further analysis, Coles et al (2008) find when a company is complex it benefitted financially with a larger board, however when the firm is less complicated then Tobin’s Q was negatively associated to the size of the board. The Walker Review (2009) also states that the ideal board size is between 10 to 12 directors. Thus, given this evidence, it would be reasonable to assume institutional investors would also prefer a board size of around this level of 9 to 12 directors.

**5.3.2 Appointment of Directors**

**Voting on director appointment**
The board score contains an element for companies allowing shareholders to vote on the appointment of directors. However, in the UK directors are appointed by shareholders’ resolutions, however, the board can appoint the directors but this must be approved by the shareholders at the next AGM Companies Act 2006 s168 (ACCA, 2007). Thus, all firms will have the ability to vote, rendering this element void, as there will be no variance.

**Voting**
Incorporated into the board score is the element for firms allowing cumulative voting. Cumulative voting is when each shareholder has one vote per share multiplied by the number of directors being elected. This is advantageous for smaller shareholders, as they can cast all their votes for one director; however, it can only be done once (Jordan, 2013). In the US, some states require cumulative voting and other do not allow it. The UK does allow cumulative voting, however in practice is not used very much, according to Baums and
Wolfgang (2001). According to Lele and Siems (2007) cumulative voting is not such an important Issue outside the US, in fact UK institutional investors state that funds are generally opposed to cumulative voting under the premise that it allows shareholders a voice in director elections that is disproportionate to their economic investment in the corporation (Vanguard, 2017).

As the UK does not really use this practice, then there should not be much variety of results, therefore institutions may not have a preference.

Annual election of directors
In the UK, companies have been asked to re-elect directors annually since the update to the UK Code on Corporate Governance in 2010. Before this, there was no requirement in the Code or the then Combined Code to re-elect annually (FRC, 2010). Therefore, during the study period, there was no requirement to explain if a company did re-elect every year. The institute of directors criticised the changes, as they said that they would encourage short-termism (Sanderson and Burgess, 2010), whereas the counter argument is that it will make directors more accountable.

The evidence suggests that shareholder value is reduced by the presence of a staggered board (Guo, Kruse, and Nohel, 2008; Cohen and Wang, 2013; Brown and Caylor, 2006). There are some who argue against an annual election to the board (Lipton and Rosen, 1991) as it is too short-termist, but most argue that an annual election is important to give shareholders rights and to help prevent takeover defences (Becht et al 2003, Guo et al,2008; Cohen and Wang, 2013).

So, if staggered boards reduce the value and are essentially takeover defences, why would institutional shareholders want them? The only argument is that it would encourage directors to act in the long-term interest. However, the popular consensus is that the annual election of directors is beneficial to shareholders’ rights, with the Code incorporating it into the requirements in 2010. Thus, it would be expected that there would be a positive association between institutional ownership and annual election to the board.
5.3.3 Directors time

Directorships

The governance score has two elements in relation to the directorships, it recommends that a CEO has a limit of two directorships in PLC’s and other directors should have less than five directorships. There is no directly comparable research into how institutions favour the number of directorships; however, there is evidence on how it affects the financial performance of a firm and the level of fraud litigation. It appears from the research that the majority of the studies find no clear financial gain or loss by simply measuring the number of directorships (Geletkanycz and Boyd, 2011; Perry and Peyer, 2005, Kiel and Nicholson, 2006, Ferris, Jagannathan and Pritchard, 2003). However, when the relationship is examined further it is the impact on performance is often dependent on other factors, such as which industry the executive director is active in, that determines the relation. Although these studies only examined multiple directorships up to two, whereas Fich and Shivdansani (2006) and Cashman, Gillian and Jun (2012) and Kaczmarek, Kimino and Pye (2014) examine the board overall, by examining the firms with the majority of the board having more than three directorships and this had a negative impact on market-to-book ratio for larger firms, Cashman et al (2012) did also use other proxies for busyness as well. However, when Cashman et al (2012) extended the study, a positive relationship is found between busyness and performance.

Another element that institutional investors would be interested in is fraud litigation and it is found that there is no greater change of a firm having fraud litigation when the directors served on multiple boards (Ferris, Jagannathan and Pritchard, 2003).

Overall, from the research, it appears there is little evidence to support the view that there is a detrimental effect on firm performance for multiple directorships (two or less) and that fraud is going to occur. Thus, it would suggest there is little evidence to support the hypothesis that institutions would not invest in a firm where the CEO has two or more directorships. However, the other element of the score for directorships for five or above there appears to be evidence from Fich and Shivdansani (2006) and also Cashman, Gillian and Jun (2012) to suggest that if financial performance is hindered for larger firms, then institutional investors would favour firms where their directors have less than five directorships.
Board attendance

The board score has an element that states that board attendance should be at 75%, so this section discusses if board attendance could possibly have a positive or negative association with institutional ownership.

It is found that there is a negative association between institutional ownership and meeting attendance for Taiwanese firms (Chou et al. 2013), when the institutional ownership is the independent variable and the meeting attendance the dependent variable, this suggested that institutional ownership does not encourage directors to attend board meetings. However, it does not test the reverse relationship, of whether institutional shareholders use board meeting attendance as an element to consider when investing. In addition, this is a Taiwanese study and there could be considerable cultural differences to the UK and might make the results less comparable.

The majority of the research suggests that frequency of meeting attendance is beneficial to firms (Xie et al. 2003; Vefeas, 1999; Chou et al, 2013; Brick and Chidambaran, 2010; Lin, Yeh and Yang, 2014; Al-Najjar 2012, Brown and Caylor (2006)). Where Xie et al (2003) find the more board meetings that take place the less use of discretionary current accruals. It could be argued that institutional investors do not want firms using discretionary current accruals to smooth earnings, thus based on this research it could be suggested that institutions would be in favour of more meetings. Additional to this evidence Vefeas (1999); Chou et al (2013); Brick and Chidambaran (2010); Lin, Yeh and Yang (2014); Al-Najjar (2012) all find that the frequency of board meetings has a positive impact on firm performance, using various measures. Again, it would be expected that institutional investors would prefer more meetings if it does bring better financial performance.

Board attendance has been used for a proxy for directors’ engagement (Brick and Chidambaran, 2010) and it would logical to assume that institutional investors would want the directors of the firms to be engaged in managing the firm. Thus, it is hypothesised that institutional investors would favour board meeting attendance to be 75% or above.

Board Guidelines

Board guidelines should be published on an annual basis according to ISS (RiskMetrics) board score. It would be expected that institutional investors would be in favour of this
element. Brown and Caylor (2006) found annual approval of the board guidance was one of the seven key drivers for higher Tobin’s Q, thus, it would be expected to increase institutional ownership.
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<tr>
<th>Element</th>
<th>Positive association</th>
<th>Negative Association</th>
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<tr>
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<td>Solely Independent Nomination committee</td>
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<td>Solely Independent Remunerations committee</td>
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<td>Presences of Governance Committee</td>
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<td>Annual Election</td>
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<td>Optimal Board Size</td>
<td>✓</td>
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<tr>
<td>Shareholders should have the right to cumulate their votes for directors</td>
<td></td>
<td>✓ NA</td>
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<td>CEO Directorships</td>
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<td>Other Directorships</td>
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<td>Former CEO</td>
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<td>CEO Duality</td>
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<td>Board Guidelines published on an annual basis</td>
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<tr>
<td>Board attendance should be 75%</td>
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<tr>
<td>Shareholders should be able to vote on director appointments</td>
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<td>✓ NA</td>
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<tr>
<td>Directors should have no related party transactions</td>
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5.3.4 Total Ownership
Given ISS (RiskMetrics) do not disclose how each score is composed, it would be prudent to review how each element would influence the institutional investors choice related to the board. Therefore, it would be expected that there is a positive association between the total institutional ownership and the board score, as it would be expected the majority of the components if examined individually would either influence the institution to tilt their portfolio to firms with these characteristics or have a neutral effect upon their choices. In addition to the academic literature reviewed above, the expectation would be that institutions would tilt their portfolios to firms that have good board scores because of the theoretical perspective that institutions can use good governance as a way to reduce their monitoring costs.

H3a – There is a positive association between the total institutional ownership and the board score.
By testing the hypothesis, it helps answer the research question about if there are more governance factors that are important to institutional investors.

5.3.5 Block-Ownership
Similarly, to the Audit Score and Compensation Score it would be expected that if institutions with greater investments would have less reliance upon a proxy agency like ISS (RiskMetrics) and also the institutions with larger stakes would be able to exert greater influence over the company board structure. Thus, it would be expected that with a larger stake there would be a lesser relation to the board score. The limited attention theory can be applied to this element of corporate governance, as the board score is the most complex of the sub scores, with far more elements being examined than both the audit score and remuneration score. Which may mean that smaller staked owners may use the ISS (RiskMetrics) score even more, as the information would be more difficult to find and digest if reviewed individually.

H3b - Where block-ownership is greater there will be less association between institutional ownership and the board score.

By examining this area, it helps answer the research question on whether there are different levels of association for different levels of ownership.

5.3.6 Time Frame
It was found by Hawas and Tse (2016) that there is an increased association between total major ownership and their board score over the financial crisis, thus it would be expected that the association would be greater between the RiskMetric board score, that is different to Hawas and Tse (2016) score, such as the Hawas and Tse (2016) contains far fewer elements, but almost all of the elements of the Hawas and Tse score are included in the RiskMetrics score. Also, again for similar reasons as the compensation and audit score there are valid reasons for assuming that the association would increase over the study period, mainly the interest in apparent failings of corporate governance during the financial crisis.

H3c There will be increasing in a positive association between total institutional ownership and board score from before and after the financial crisis of 2007-8.
5.4 Corporate Governance

In this section, the hypothesis is being developed for the association between institutional share ownership and the two corporate governance scores. The overall governance scores have a more holistic view of corporate governance unlike the previous score which focused on one particular area, however these scores; audit score; compensation score; board score, all feature in the overall governance score. There are some elements that are not included in the governance scores, which are:

- Shareholder rights - One share one vote for ordinary shares, call EGMs and prevent management to change the articles of association without approval by shareholders, approval of mergers by the majority of shareholders
- Anti-Takeover provisions
- So called progressive practices – Age limit for directors, board reviews, meeting without CEO, CEO succession plans, policies on the board employing outside advisors, directors should resign if their job changes.

Shareholder Rights

Having strong shareholder rights helps to improve financial performance according to both Gompers, at al (2003) and Core Guay and Rusticus (2006). It would be expected that institutions do target firms with better shareholder rights, as this would strengthen their position and ability to influence the firm. There is not an obvious reason why an institutional shareholder would actively invest in firms with poor shareholder rights, as this would impair the value of the shares and weaken the institutions’ position to force change, thus it would be expected that better shareholder rights would attract more institutional shareholders.

Anti-Takeover provision

The anti-takeover provisions that the score includes are elements that are governed by the country the company operates in, thus this section would have a null effect upon the governance score.

Progressive Practices

The progressive practices are to protect the shareholders from entrenched managers. For example, limiting the age of directors to prevent the directors to stay indefinitely. Succession planning should ensure that CEOs are removed at the end of their term,
especially if their replacement is being lined up. Monitoring the board performance should help identify poorly performing managers, so they can be removed. If directors change their positions they should resign and be re-elected, as if they can just change positions without a proper appointment the shareholders would not get a vote on this and be able to voice their views on the director. Entrenchment or perceived entrenchment of directors is not beneficial for the company (Shen and Cannella, 2003; Morck and Shleifer, 1988; Short and Keasey, 1998; Bebchuk et al 2008).

Given the evidence that entrenchment is not beneficial to the company, it would be expected that investors would prefer to invest in firms who did not have signs of director entrenchment.

5.4.1 Total Ownership
It is expected that institutional investors choose to invest in firms with good corporate governance because prior research supports this view (Chung and Zhang, 2011) and the theory would suggest that it was prudent to choose firms with good governance, as this would reduce the monitoring costs of holding a diverse portfolio of shares. The theory of limited attention may suggest that there is a greater reliance on a summary measure of corporate governance like is used in this study. Due to this evidence, the hypothesis is:

H4a There is a positive association between total institutional shareholder ownership and the overall corporate governance score.

By testing this hypothesis, it will be possible to answer the primary research question ‘Do institutional investors prefer to invest in firms with good corporate governance?’

5.4.2 Block-Ownership
Similarly, to the audit score, compensation score and board score it would be expected that the institutions with smaller holdings would place a greater reliance upon the off the shelf productions for measuring corporate governance like the one used in this study. This hypothesis is complementary to the theory that institutions with smaller stakes are more likely to use corporate governance as a substitute for monitoring, as there is less cost benefit for smaller block-holders to become more active monitors. Thus the hypothesis is:
H4b Where block-ownership is greater there will be less association between institutional ownership and the overall corporate governance scores.

By testing this hypothesis, it helps answer the following research question “Do institutional investors’ preferences change when they have different levels of block-ownership?”

5.4.6 Time Frame
Again it would be expected that the financial crisis would affect the association between the institutional ownership and general corporate governance, as it the financial crisis has been described as a critical juncture (Hall, 1993; Braun, 2015), thus it was expected that there was a shift in attitudes in corporate governance. It was also found that the evidence from the sub scores that there would be a change in association. In addition to the reasons previously stated, in a similar study by Hawas and Tse (2016) it would found that there was a change in relationship from before the financial crisis and during the financial crisis, where before the financial crisis there was no association with total major shareholder ownership and then during the crisis there was a positive significant association. Thus the hypothesis is:

H4c There will be increasing in a positive association between total institutional ownership and overall corporate governance from before and after the financial crisis of 2007-8.

By testing this hypothesis along with H1c, H2c and H3c it will be possible to understand if the financial crisis has impacted the association between institutional preferences and corporate governance.

5.5 Ownership Type
This section is covering the different types of institutional owners and the association with corporate governance. The major groups of shareholder that are covered are; pensions, banks, insurance funds, hedge funds and investment advisors. In the previous section, institutional investors have been considered a homogeneous group, with similar comment themes. The following hypotheses are answering the research question on whether different types of institutions have different preferences for good governance. This section is examining the possible differences in corporate governance preferences of UK listed companies for institutions.
5.5.2 Pensions
It has been suggested that pension funds have a very long investment chain (Wong, 2010), thus the costs in actively monitoring their portfolio will be costly, thus a way in which to reduce the costs of this could be to invest in firms with good pre-existing corporate governance. Given this situation and the evidence presented by Bushee et al (2013) who found that governance sensitive institutions were mainly banks and pensions., thus the following hypothesis

H5a There is a positive significant association between pension fund ownership and good corporate governance.

5.5.4 Banks
Banks are one of the smallest groups of institutional investors in the UK equity market (ONS, 2016). Banks tend to invest in low risk firms (Del Guerico, 1996). In similar research both, Chung and Zhang (2011) and Bushee et al (2010) find that bank ownership is has a positive association with corporate governance. In light of the similar research and banks, preferences to avoid risk, and it could be deemed as a risk that a firm has poor governance, it would be expected that there is a positive association to institutional ownership.

H5b There is a positive association with banks ownership and good corporate governance.

5.5.3 Insurance
UK Insurance firms had 8.8% of the share of the UK stock exchange in 2010 out of the other UK institutions this was the joint second largest group (ONS, 2016), demonstrating their importance to the markets. It was found by Chung and Zhang (2011) that there was a positive association between insurance firm ownership and the strength of corporate governance. This result does differ from Hawas and Tse (2015) however, in this research, pensions and insurance was in one group making it difficult to identify which of the institutions was driving the lack of significance. In other research (Almazan, Hartzell and Starks, 2005; Hutchinson, Seamer and Chapple, 2015; Muniandy, Tanewski and Johl, 2016; Brickley, Lease et al. 1988; David, Kochhar et al. 1998, Johnson, Schnatterly, Hohnson and Chiu, 2010) there has been categorisation of institutions based upon whether the institution is pressure sensitive and pressure resistant, based upon their possible business relationship with the investee firm and in all of these cases pension was in the pressure resistant group.
and insurance was in the pressure sensitive group, which highlights the difference in the ownership group.

Insurance can be described as being similar to pension funds, as both are for the longer-term investments; however, one of the key differences is that it could be argued to be more flexible as policyholders do not monitor the performance of their policies (Golding, 2003).

Given that the only comparable research by Chung and Zhang (2011) found that there was a positive association, then it is expected that it will be from this data.

H5c There is a positive association with insurance firm ownership and good corporate governance.

5.5.1 Hedge Funds
From the literature on hedge funds, there is consistent evidence that the active hedge funds seeking change in corporate governance areas and that these actions have a positive effect upon the firms’ performance (Boyson and Mooradian, 2011; Bratton, 2006; Klien and Zur, 2009). In addition, it was noted from Bratton (2006) and Klien and Zur (2009) that corporate governance matters were the most commonly cited reason for activism. Despite these studies being based upon US data, it is expected that the results would be similar if the studies were in the UK, as according to the Financial Conduct Authority (2015) recent survey of hedge funds the participants none were domiciled in the UK, thus providing evidence that hedge funds are a multinational group of investors. Thus, it would be expected that it would be expected that hedge funds ownership would be positively associated with good corporate governance.

H5d There is a positive association with hedge fund ownership and good corporate governance.

5.5.5 Investment Advisors
Investment advisors are a group of professional advisors that do not appear to fit with other categories. The category is based upon the Bloomberg database, which is of US origin and the classification is based upon SEC definition of an investment advisor. Investment advisor includes all professional advisors and it includes unit trust, mutual funds27 and all other

27 Mutual funds are very similar to unit trusts, however operate mainly in the United States.
professional advisory firms. Other studies into the area of corporate governance and institutional ownership have not used the exact same category of institutions (Bushee, et al 2013, Hawas and Tse, 2016; Zhang and Chung, 2011), making it more difficult to have a direct comparison. However, Zhang and Chung, 2011 used two categories of Investment Companies and Independent Advisors, and both have a positive significant association with good corporate governance. Thus, it would be expected that if the two groups were combined into one category then the results would be similar, therefore the final hypothesis is:

H5e There is a positive association between investment advisor ownership and good corporate governance.

5.6 Summary
In summary, this chapter has developed hypotheses for how institutional investors are associated with corporate governance in different ways. The hypothesis development stems from both the theoretical review, using agency theory, limited attention theory and critical juncture. It takes these ideas and compares them to with research findings on similar studies to help develop the hypotheses.

It is expected that institutional investors should tilt their portfolios to firms with good governance, as measured by the ISS (RiskMetric) proxy for good governance, it has been hypothesised the main reason is to reduce monitoring cost for investors.

It is expected that where ownership levels increase there will be fewer preferences for good governance, partially because of investors with larger stakes being able to force change. Also because smaller investors are more likely to use the proxy advisory service like ISS because the cost benefit of active monitoring is reduced and there may be limited attention (Hirshleifer, and Teoh, 2003).

In addition, it is expected that the financial crisis affected institutional investors preferences on corporate governance and made them more sensitive to corporate governance provisions.
It is expected that all of the different types of investors should have a preference for good governance, as they still can reduce monitoring costs by investing in firms with good governance.

The following chapter explains the methods that are employed to test these hypotheses and will discuss the research philosophy used.
6.0 Research Method
This chapter it presents the research methods that are applied to be able to accept or reject the hypotheses developed in chapter five, which are developed from the literature presented in chapters two, three and four. This chapter firstly discusses the research philosophy used, then explains both the aims and objectives of the study. It then discusses the sources of the data and how the data was obtained, so conclusions can be drawn. It then describes and justifies the research methods used and any robustness checks that are used to help improve the validity of the results.

6.1 Research Philosophy
Realist research is the chosen epistemological approach. Figure 7 sets out the main forms of management research, to enable a discussion on the alternative philosophical approaches that could have been taken and the reasoning for the chosen approach. The main areas are realist research approach sits between positivism, critical realism and Interpretivism and phenomenology (Fisher, 2007; Hallebone, and Priest, 2009). The following section discusses these approaches and provide justification for the chosen approach. There are alternative approaches, however, due to the more tenuous association they were chosen omitted from the discussion discussed.
The nature of knowledge

**Knowledge and reality**

- **Orthodox**
  - We seek objective knowledge of the world, which reflects external reality.
  - We seek systematic knowledge of the world but recognize that it is influenced by subjectivity.
  - We seek knowledge of the processes by which people in groups and societies make sense of their world. The real world has to be seen through human thought and not as separate from it.
  - Knowledge is uncertain. The connection between reality and our knowledge of it is hidden.

- **Gnostic**

**Realist Research**

- **Positivism**
- **Critical Realism**
- **Interpretivism and phenomenology**
- **Standpoint research**
- **Action Research**
- **Postmodernism**
- **Hermeticism**

Source: Fisher, C. (2007). *Researching and Writing A Dissertation - A Guidebook for Business Students*. Harlow FT Prentice Hall. Figure 0.2 The main forms of management research p15
Realist Positivism

The realist approach recognises the positivist intention to produce a generalisation but is less likely to predict certain behaviour. In this study, there is an examination of institutional investor preferences for good corporate governance, this would be through statistical analysis for patterns, it is not intended to have a ‘covering law’ like in classic positivism. As if a pattern is shown, i.e. between pension funds and a tendency for an investment in good corporate governance firms, this is not to say the pattern will carry on occurring in the future. For instance, the proxy used will be taken from various publicly available data, this gives no insight into the inner workings of a company and their attitude towards corporate governance and to believe that this proxy is a perfect representation of a firm’s corporate governance would be foolish.

Interpretivism and Phenomenology

Interpretivism and phenomenological research do not accept the realist view of the world, it takes a critical subjective approach that, the truth is hidden and subjective. It is research into how things link and how things appear to people, this approach would require the researcher to forget or put to one side their own preconceptions and start with an open mind. To use this approach in this research attitudes of fund managers towards investments in good corporate governance and financial performance could be examined. The merits of phenomenological research should not be dismissed, as it would provide important insight into institutional investors’ view and why they differ, moreover it acknowledges the complexity in the real world that realist research would find more difficult. It is very difficult to forget or put aside one’s preconceptions and this is one of the key weaknesses of this approach.

Critical Realism

Both critical realism and realist research recognise that knowledge is subjective; however, the critical realism approach takes the Gnostic view that the truth is hidden. The critical realism approach takes the view that there are three levels of reality: experiences, events and mechanisms, where experiences are subjective, events form our experiences and the hidden mechanisms cause the events. If in this research we were going to take this perspective, the question ‘why would institutional investors care about corporate governance?’, could be asked. This perspective would demand deep contextualisation data rather than the broad data.
6.2 Research Aims
The aim of the research is to assess the relationship between corporate governance of a firm and the typology of its institutional ownership for FTSE ALL share companies from January 2006 to January 2010. The aim is to examine the data to be able to determine if such a relation exists. Given the current environment and the importance of the UK capital markets, this study is the largest conducted on the UK stock market regarding institutional shareholders and corporate governance. The only comparative study to examine the FTSE 350 is conducted by Hawas and Tse (2016) who focussed on large owners, rather than institutional owners, in contrast to this study.

6.3 Objectives
In this study, corporate governance is examined as a whole and in relation to certain component parts of corporate governance. The primary objective of this research is to test if there is an association between institutional ownership and corporate governance. By providing the evidence for this, it helps answer the research question; do institutional investors prefer to invest in firms with good corporate governance? This is an important area of corporate governance, as Kay Review (2012) called for more interest for research.

In addition, this study has examined three separate areas of corporate governance, the audit environment, the board of directors, and directors’ remunerations. This helps to establish if there is a particular element of good governance that is more influential on institutional investors’ behaviour. This is important, as prior studies (Bushee et al 2013; Chung and Zhang, 2011) has examined governance as a whole, and not used an index for these themes. Hawas and Tse (2016) did examine certain areas; however, a major difference was their primary focus was major shareholders’, not institutions’. Thus, this study provides a unique insight into institutional investors’ preferences. This will answer the research question if institutional investors’ do prefer firms with good governance, is there a particular element of good governance that is more influential?

Another objective of this study is to test whether institutional investors’ preferences change when they have different levels of block-ownership. None of the studies in this area (Bushee et al, 2013; Chung and Zhang, 2011; Hawas and Tse, 2016) have addressed whether the
level of ownership changes the behaviour of institutions’. Only Kurshed et al (2011) examined block-ownership levels, however, this was just for board composition, not overall corporate governance. The results would be important to regulators and policy makers, because if only institutions’ with certain levels of ownership i.e. 10% and above have no preferences for good governance, then maybe the regulators should focus on institutions’ with this level of ownership, to help improve shareholder engagement. This answers the research question of whether institutional investors’ preferences change when they have different levels of block-ownership.

An economic crisis can be described as a critical juncture (Hall, 1993; Braun, 2015), which allows entry of new ideas and practices. It has been argued that the financial crisis of 2007-8 is a critical juncture for institutional investors and for corporate governance. Thus, the study period from 2006 to 2010 is an interesting point in time, as it makes it possible to see if there was a critical change in path for institutions’. There was increased regulatory attention post the financial crisis which supports the view that this was a critical juncture (Walker, 2009; Kay, 2012). Thus, this study provides an insight into how the financial crisis changes the investors’ preferences on corporate governance.

Finally, the study is reviewing whether there are differences in preferences on corporate governance between the institutional investors’ types namely; hedge funds, investment advisors, banks, and pension funds. Bushee et al (2013) and Chung and Zhang (2011) also examined these differences, however, this study is based upon UK data and also compares the preferences on the three different elements of corporate governance, in addition to overall corporate governance. This research also uses an off the shelf proxy measure for corporate governance developed by ISS (RiskMetrics), unlike prior research, as it is plausible that it will produce different results, as investors may not have been using detailed investigations to gauge the corporate governance of a firm, as they may pay limited attention to information that is difficult to obtain (Hirshleifer and Teoh, 2003). The study contributes to the literature on this area, as it provides new evidence on the different types of institutional investors preferences related to the audit environment, directors’ remunerations and the board of directors.
6.4 Sample

The initial study sample includes all firms from the FTSE All Share index from 2006 to 2010. The stock market related data as taken from the Bloomberg database, institutional holdings is from Morning Star Database and the corporate governance data from Corporate Governance Quotient (CGQ®) developed by ISS formally RiskMetrics. All firms with missing variables were excluded from the sample. Investment trusts and real estate trusts were excluded from the study sample, as they are investment vehicles. In addition, financial services firms were excluded from the sample consistent with other studies in this area (Zhang and Chung, 2011; Bushee, 2013).

The sample period from 2006 to 2010 was chosen because it was a critical juncture for both institutional investors and corporate governance. The financial crisis of 2007-8 allowed new ideas and requirements to become acceptable for institutions, before this period there was far less focus upon the institutional investors’ role with the introduction of the first Stewardship Code in 2010 and calls for more responsibility for the institutions (Walker, 2009). Despite the regulations coming into force after the study period, it could be argued that the period before the introduction of the Stewardship Code (2010) is more interesting, as it was a period of uncertainty and mounting pressure, which was moving institutions onto a different path before the introduction of formal regulations. Thus, examining this time gives a unique insight into the changing attitudes before any sort of more formal enforcement.

The outliers were removed for all of the control variables, using the interquartile range method using the multiplier of 2.2+/− as according to Hoaglin and Iglewicz (1987) the multiplier of 1.5 gave inaccurate results for 50% of the time. It was felt that removing outliers for the governance scores and ownership was not needed as the ranges were already restricted (sub-scores 1-5, governance indices and ownership as percentiles).

The sample is taken from members of the FTSE ALL Share index as at the first trading day of the year. Similarly, to prior research financial service firms were removed from the sample (Chung and Zhang, 2011; Bushee et al, 2013). In each year there were a number of firms with unavailable data for the regression analysis, thus they were removed from the sample.
The final sample consists of 1470 firm years observations. The study period was limited to 2006-2010 because RiskMetrics corporate governance database was reconfigured and the data was no longer comparable. The detail of the sample is shown in Table 5.

**Table 5 Sample**

<table>
<thead>
<tr>
<th>Year</th>
<th>FTSE All share Membership</th>
<th>Financial Service Companies, Unavailable data and outliers</th>
<th>Total Firms in Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>682</td>
<td>136</td>
<td>319</td>
</tr>
<tr>
<td>2007</td>
<td>697</td>
<td>126</td>
<td>305</td>
</tr>
<tr>
<td>2008</td>
<td>673</td>
<td>128</td>
<td>284</td>
</tr>
<tr>
<td>2009</td>
<td>618</td>
<td>90</td>
<td>278</td>
</tr>
<tr>
<td>2010</td>
<td>622</td>
<td>85</td>
<td>284</td>
</tr>
</tbody>
</table>

The sample consists of 1470 firm years from 2006 to 2010, whereas for the sub-scores there are 1465 companies, as 5 companies only had the main score, but not the sub-score.
6.5 Proxy for Corporate Governance

The corporate governance rating was taken from Bloomberg Database and uses the Corporate Governance Quotient (CGQ®) developed by ISS (RiskMetrics). The index provides a rating for FTSE ALL share index companies, this began in September 2005, and with majority of FTSE ALL share companies being listed by January 2006, because of this limitation the research period will commence on 1st January 2006. The ISS (RiskMetrics) gathers the data from proxy statements and annual reports that are usually collected in the first half of the previous year (Chung and Zhang, 2011).

The indexes that are used are outlined below:

1. CGQ Index (INDEX)
2. CGQ Industry (INDUSTRY)

The three CGQ sub-scores are:

1. Audit Environment (AUDIT).
2. Executive and Director Compensation and Ownership (COMP)
3. Board of Directors (BOARD)

The two main indexes give an overview of the companies’ corporate governance. The CGQ Index and CGQ Industry differ, as they are comparing against the companies’ industry as defined by S&P’s Global Industry Classification Standard (GICS) (CGQ Industry) and the MSCI EAFE index (CGQ Index) (Lyons, 2003). The MSCI EAFE Index is designed to represent the performance of large and mid-cap securities across 21 developed markets, including the UK (MSCI, 2018). The scores will differ because they are relative to either the Index or the industry in which they belong. For example, Company Y is in the transportation industry, if the transportation index is generally poor for corporate governance, and if Company Y has relatively good governance it will get a high INDUSTRY score, however, when it is compared to the index it might get a poor INDEX score. The CGQ rating gives a score out of 100 for excellent corporate governance and 0 for poor. INDEX and INDUSTRY are based upon 55 different issues under eight categories as listed below:
1. Board of directors
2. Audit
3. Charter and bylaw provisions
4. Anti-takeover provision
5. Executive and director compensation
6. Progressive practices
7. Ownership
8. Directors education

The three sub-indexes CGQ also produce three sub-scores that give a breakdown of corporate governance components; audit environment AUDIT, the board of directors BOARD, and executive and directors compensation COMP. These indices are graded out of five, the companies with a grading of five are in the top quintile in that area of governance and one indicating that the company is in the bottom quintile in that area of governance. The CGQ rates companies in the UK every time that the board meets, and will review the score on request from the company, this score is updated within that month (ISS, 2003). However, Chung and Zhang (2011) find that the scores are updated in the second half of the year, by ISS. So, there is a lag in the change in governance and the change in actual score.

AUDIT is based upon four factors; the independence of the audit committee membership (specifically whether the committee consists solely of independent non-executive directors); audit fees being less than the non-audit fees; public disclosure of rotation policy; and, the requirement for shareholders to ratify auditors’ appointment each year (Lyons, 2003).

BOARD is the most comprehensive of the sub-indexes and covers 17 factors and includes elements relating to; board independence, the appointment of directors, the busyness of directors and board conduct.

COMP is based upon based upon the following areas; independence of the directors on the compensation committee, pay for the directors being partially in options, the reasonableness of the option plans or too many options, shareholder approval of option plans and repricing of options and that options should be accounted for as an expense. Some of the elements are
quite subjective (reasonableness of option plans or too many options), RiskMetrics does not provide details of exactly how this is measured, this a limitation of the research, as it is not possible to understand how it is estimated, thus it is impossible to know if it is a rigorous measure.

In Appendix A, there is a more detailed breakdown of all of the CGQ scores used in this study.

Despite the index having limitations, the CGQ index is the market leader of governance rating providers, thus is used by institutions to measure corporate governance of their investments, therefore it is most likely to reflect attitudes of the institutions (Bebchuk and Hamdani, 2009). The major criticism of CGQ is that only ISS actually knows how it is derived, yet it has become the benchmark for quality and this lack of transparency questions it reliability (Belinfanti, 2009). The CGQ ratings are comparative to other firms around the world. This is an important factor, as given around half of UK shares were owned by overseas investors during the study period (Office of National Statistics, 2010) it would be reasonable to assume that they would compare firms across the globe for investment and a tool such as this would be beneficial in making investment choices.

6.6 Dependent Variables

The study is examining the relation between firm level institutional ownership and corporate governance by using regression analysis. This section presents the dependent variables used in the regressions.

The firm’s total institutional ownership in year t (INST OWNi,t) is measured by the ratio of the number of shares held by institutional owners to the total number of shares outstanding. The investors’ name is disclosed when ownership is ≥3% for all UK listed companies in their annual reports, thus making it difficult to establish lower levels of institutional ownership (The Quoted Companies Alliance, 2008). The institutional ownership data is taken from the Morning Star data base that gives a snapshot of the ownership on the 31st January for each year from 2006 to 2010. To avoid survivorship bias the companies are taken from the FTSE All Share on the first trading day of the year from 2006 to 2010.
Similar to Wang (2014), related parties\(^{28}\) (e.g. Lord Sainsbury owning shares) and holding companies have also been omitted. These groups have been excluded because the study’s primary objective was to examine how institutional investors view corporate governance, as part of their investment decisions and the inclusion of these groups would have distorted the data, as their objectives may have been different. Corporate shareholders’ motivations for the purchase of the shares is varied, however, it is often followed by a takeover or complete sale of stock within a short period of time (Connelly, Hoskisson, Tihanyi and Certo, 2010; Wang, 2014).

With increased ownership of a firm, there is an ability to have a greater influence upon decisions, thus the study is analysing if the levels of block ownership alter the relationship between good governance and institutional ownership. For robustness purposes the blockholdings have been measured within the following ranges for firm \(i\)'s 3% to 5% (OWN\_3\_5\_i,t), 5% to 10% (OWN\_5\_10\_i,t), 10% to 20% (OWN\_10\_20\_i,t), \geq20\%(OWN\_20\_i,t) this is because institutions may have different levels in the investee firms (Kurshed, Lin et al, 2011; Wang, 2014).

To be able to test if certain types of institutions have a greater propensity to tilt their portfolio to firms with good governance each type of investor has been classified into the following categories:

- Pension funds.
- Banks,
- Insurance companies,
- Hedge funds,
- Investment advisors which includes; professional financial investors, mutual funds (unit trusts UK equivalent) and unit trusts.

After the shareholders for each firm was found, it was necessary to classify the institutions by type, this was done by searching on the Bloomberg Data Base and classification based on the

\(^{28}\) e.g Ryan Air owning shares in EasyJet
\(^{29}\) E.g. for 888 Holdings Plc the company whose majority shareholders were E and O Shaked Share Trusts in 2006, however the Shaked family were the founders of the company.
Bloomberg classification. Where firms were not found an internet search was performed to find the detail of the owner, and these firms were simply classified based upon their description on the website, however, if it was not clear from their website, then they were described as Financial Institution – Unknown. These firms were included in the total institutional ownership, however, were not included in any of the above categories.

Where bank ownership \( (\text{BANK}_{i,t}) \) is measured by the ratio of the number of shares held by institutions that are classified as banks. Hedge fund ownership \( (\text{HEDGE\_FUND}_{i,t}) \) is measured by the total number of shares outstanding held by institutions classified as hedge funds. Insurance companies \( (\text{INSURANCE}_{i,t}) \) is measured by the total number of shares outstanding held by institutions classified as insurance companies. Investment advisors \( (\text{INVESTMENT\_ADVISOR}_{i,t}) \) ownership is measured by the total number of shares outstanding held by institutions classified as investment advisors. Pension funds \( (\text{PENSION}_{i,t}) \) ownership is measured by the total number of shares outstanding held by institutions classified as investment advisors.

6.7 Control Variables

In prior research it has been established that institutional investors investment decisions are affected by other factors, for example, institutions prefer large liquid stocks (Fernando 2006; McCahery et al 2016; Gompers and Metrick, 2001; Falkenstein, 1996), so to control for this the size the log of market capitalisation \( (\log\text{\_MKT\_CAP}) \), for liquidity the average monthly volume of shares traded \( (\text{AVERAGE\_TRADE\_VOLUME}) \) are used as some of the control variables.

To control for institutions’ preferences for good financial performance (Gompers et al, 2003) a number of measures are used. Annual market returns were used, using the Treynor ratio for firm \( i \)’s in year \( t \) \( (\text{MARKET\_ADJ\_RETURN}) \), Return on Equity \( (\text{ROE}) \), Dividend Yield \( (\text{DIV\_YLD}) \), Price to Earnings ratio \( (\text{P\_E}) \), log of the share price \( (\text{PRICE\_LOG}) \). For the proxies for risk beta \( (\text{BETA}) \) has been calculated by using daily returns for -1 year, Idiosyncratic risk \( (\text{IDORISK}) \) which institutional investors are sensitive to (Bushee and Noe, 2000) has been calculated using the market model using daily returns, then calculating the standard deviation of the market model residuals, debt to asset ratio \( (\text{DEBT\_ASSET}) \).
To control for any industry preferences a dummy variable is used for which sector the firm belongs to (INDUSTRY_DUMMY), however, this variable was excluded in any analysis where corporate governance score INDUSTRY was the dependent variable, as the INDUSTRY score already controls for industry factors. As, the period was an issue a dummy variable (TIME_DUMMY) was included for the period in which the data was reported to control for any time effects. The TIME_DUMMY was not included when testing for the effects of the financial crisis.

Table 6 Summary of data sources

<table>
<thead>
<tr>
<th>Type of Data</th>
<th>Source</th>
<th>Periodicity</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance Scores</td>
<td>Bloomberg – Risk</td>
<td>The governance score on the first day of trading of each year(^{30}).</td>
<td>INDEX INDUSTRY BOARD_SCORE AUDIT_SCORE COMP_SCORE</td>
</tr>
<tr>
<td></td>
<td>Metrics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional</td>
<td>Morningstar</td>
<td>31(^{st}) January of each year</td>
<td>Number of shares owned Percentage owned</td>
</tr>
<tr>
<td>Ownership</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Data</td>
<td>Bloomberg</td>
<td>31(^{st}) January of each year</td>
<td>LOG_MKT_CAP AVERAGE_TRADE_VOLUME BETA IDORISK MARKET_ADJ_RETURN DEBT_ASSET DIV_YLD PE ROE PRICE_LOG Industry dummy</td>
</tr>
<tr>
<td>Tenure</td>
<td>BoardEx and S&amp;P</td>
<td></td>
<td>CEO_TENURE</td>
</tr>
<tr>
<td>Classification of</td>
<td>Bloomberg</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Institution</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{30}\) The governance score is obtained by ISS (RiskMetrics) at the first party of the year (Chung and Zhang, 2011), so the score for 1\(^{st}\) January 2006 would have been based on data from 2005.
6.8 Empirical Analysis

To be able to use regression analysis to analyse the association between independent and dependent variables the Gauss-Markov Theorem (University of Warwick, ND) states that the following must hold true:

- Linear relationship between x and y variables
- Normal distribution
- The variables are not collinear.
- Homoscedastic

To test for linearity ANOVA tables on SPSS was used for the deviation of linearity, if the significance was above 0.05 then it can be concluded that there is a linearity relationship. Some variables had linearity issues, so the natural log of the original figure was taken rather than the base figure (PRICE_LOG) and LOG_MKT_CAP). Table 8 in chapter seven presents the Pearson correlation matrix to test for multicollinearity. The correlations between most pairs are low, generally below 0.3 and not significant. None of the correlation coefficients is high enough (<0.80) to cause multicollinearity problems (Pucheta-Martinez and Garcia-Meca 2014). After removing the outliers there was no issue with the distribution. To control for heteroscedastic data the Hayes and Cai (2007) regression to control for this. The Hayes and Cai (2007) method have been used in many other studies in social science (e.g. Busch, Timo, and Hoffmann, 2011; Karki and Ghimire 2016).

To be able to examine the relation between institutional ownership and corporate governance the following regression model is used:

\[
\text{INSTITUTIONAL\ OWNERSHIP}_{i,t} = \beta_0 + \beta_1\text{GOVERNANCE\ RATING}_{i,t} + \beta_2\text{LOG\_MKT\_CAP}_{i,t} + \beta_3\text{AVERAGE\_TRADE\_VOLUME}_{i,t} + \beta_4\text{BETA}_{i,t} + \\
\beta_5\text{JURISDICTION}_{i,t} + \beta_6\text{MARKET\ ADJ\ RETURN}_{i,t} + \beta_7\text{DEBT\_ASSET}_{i,t} + \beta_8\text{DIV\_YLD}_{i,t} + \beta_9\text{PE}_{i,t} + \beta_{10}\text{ROE}_{i,t} + \\
+ \beta_{11}\text{PRICE\_LOG}_{i,t} + \epsilon_{i,t}
\]

Where, institutional ownership was either measured by INST_OWN_{i,t}, OWN_3_5_{i,t}, OWN_5_10_{i,t}, OWN_10_20_{i,t}, OWN_20_{i,t}, BANK_{i,t}, HEDGE_FUND_{i,t}, INSURANCE_{i,t}, INVESTMENT_ADVISOR_{i,t}, or PENSION_{i,t} depending on the hypothesis it was testing. Governance rating was again either measured by INDEX_{i,t}, INDUSTRY_{i,t}, AUDIT_SCORE_{i,t}, BOARD_SCORE_{i,t}, or COMP_SCORE_{i,t}, again depending on the hypothesis it was testing.
To strengthen the results for block-ownership levels Logit regression is used to examine the association between the ownership at the various block ownership levels and corporate governance, as it departs from the strictly linear framework of a general OLS regression. Where the regressions ran for each of the ownership levels and a dummy variable is used for the presence of ownership for those levels.

$\text{Dummy}_{\text{OWN}}_{i,t} = \beta_0 + \beta_1 \text{GOVERNANCE RATING}_{i,t} + \beta_2 \text{LOG}_\text{MKT\_CAP}_{i,t} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{i,t} + \beta_4 \text{BETA}_{i,t} + \beta_5 \text{IORISK}_{i,t} + \beta_6 \text{MARKET\_ADJ\_RETURN}_{i,t} + \beta_7 \text{DEBT\_ASSET}_{i,t} + \beta_8 \text{DIV\_YLD}_{i,t} + \beta_9 \text{PE}_{i,t} + \beta_{10} \text{ROE}_{i,t} + \beta_{11} \text{PRICE\_LOG}_{i,t} + \epsilon_{i,t}$

Where Dummy$_{\text{OWN}}_{i,t}$ was the dummy variable for all of the following levels, OWN$_{3\_5}i,t$, OWN$_{5\_10}i,t$, OWN$_{10\_20}i,t$, OWN$_{20}i,t$.

The time frame of this study is an interesting one, with the 2007-8 global financial crisis occurring in the middle of the study period, thus it is necessary to examine the differences in association between institutional ownership in the three distinct periods; Pre Crisis (2006 and 2007) Crisis (2008) and Post Crisis (2009 and 2010). Thus, each of the regression is run again for total institutional ownership (INST$_{\text{OWN}}_{i,t}$) each of the governance ratings (INDEX$_{i,t}$, INDUSTRY$_{i,t}$, AUDIT\_SCORE$_{i,t}$, BOARD\_SCORE$_{i,t}$, or COMP\_SCORE$_{i,t}$).

In addition to analyse of the timeframe the following regression is used:

$\text{INSTITUTIONAL\_OWNERSHIP}_{i,t} = \beta_0 + \beta_1 \text{GOVERNANCE RATING}_{i,t} + \beta_2 \text{Time\_Dummy}_{i,t} + \beta_3 \text{GOVERNANCE RATING}_{i,t} \cdot \text{Time\_Dummy}_{i,t} + \beta_4 \text{LOG}_\text{MKT\_CAP}_{i,t} + \beta_5 \text{AVERAGE\_TRADE\_VOLUME}_{i,t} + \beta_6 \text{BETA}_{i,t} + \beta_7 \text{IORISK}_{i,t} + \beta_8 \text{MARKET\_ADJ\_RETURN}_{i,t} + \beta_9 \text{DEBT\_ASSET}_{i,t} + \beta_{10} \text{DIV\_YLD}_{i,t} + \beta_{11} \text{PE}_{i,t} + \beta_{12} \text{ROE}_{i,t} + \beta_{13} \text{PRICE\_LOG}_{i,t} + \epsilon_{i,t}$

Where the Time\_Dummy$_{i,t}$ represents either 1 for before the financial crisis (2006 and 2007) and 0 for after the financial crisis (2008-10), GOVERNANCE RATING \* Time Dummy is the interaction dummy to analyse the association between the corporate governance rating and how it is affected by the time period. This is a similar method to Elshandidy, Fraser and Hussainey (2013) who used Linear mixed models. The interaction dummy is examined to help test the hypotheses H1c, H2c, H3c, H4c.
6.9 Robustness checks

To confirm that the variables are not endogenous a two-stage regression was employed. To be able to effectively use two stage regression an instrumental variable needs to be included. Chung and Zhang (2011) used CEO tenure as an instrumental variable, as it is expected that if a CEO had a longer tenure their position would be more entrenched, thus any corporate governance mechanisms would be less effective. It is predicted that with longer tenure, the worse the corporate governance rating. Thus, in the study CEO tenure is used. The F statistic is reported for testing the joint statistical significance of the CEO tenure instrument, all of the models reported a F statistic greater than 10 for validity (Schmideiny, 2018). The CEO Tenure data is collected from BoardEX database, and where the data is unavailable, it is hand collecting from the firm’s annual report, so the duration of tenure is given at the start of the calendar year.

In the first stage of the regression, the governance score was used as the dependent variable and in the second stage of the regression, the total institutional ownership was used for the dependent variable and CEO tenure was introduced as an instrumental variable.

It is possible that the effect of corporate governance may be a more gradual change, than the instant relationship that has been assumed so far. Therefore, when there is a change in corporate governance it may take a little while for institutions to take note, so a change in corporate governance may be felt in year t and in year t + 1.

\[
\Delta_{INST\_OWN} = \beta_0 + \beta_1 \Delta GOV\_RATING_{it} + \beta_2 \Delta \log_{MKT\_CAP}_{it} + \beta_3 \Delta \text{AVG\_TRADE\_VOLUME}_{it} + \beta_4 \Delta \text{BETA}_{it} + \beta_5 \Delta \text{ORISK}_{it} + \beta_6 \Delta \text{MARKET\_ADJ\_RETURN}_{it} + \beta_7 \Delta \text{DEBT\_ASSET}_{it} + \beta_8 \Delta \text{DIV\_YLD}_{it} + \beta_9 \Delta \text{PRICE\_LOG}_{it} + \beta_{10} \Delta \text{ROI}_{it} + \beta_{11} \Delta \text{PRICE\_LOG}_{it} + \epsilon_{it}
\]

The regression from the previous section are re-run with the change in variables from t and t + 1; where \( \Delta \) represents change, similar to (Chung and Zhang, 2011; Hawas and Tse, 2016). Also, as the effect of the change in corporate governance may be felt for both t and t + 1 there is the lagged change in governance score \( \langle \text{Lag\Delta GOV\_RATING\_SCORE}_{it} \rangle \). See the equation below for details

\[
\Delta_{INST\_OWN} = \beta_0 + \beta_1 \Delta GOV\_RATING_{it} + \beta_2 \text{Lag}\Delta GOV\_RATING_{it} + \beta_3 \text{Lag}\Delta \log_{MKT\_CAP}_{it} + \beta_4 \Delta \text{AVG\_TRADE\_VOLUME}_{it} + \beta_5 \Delta \text{BETA}_{it} + \beta_6 \Delta \text{ORISK}_{it} + \beta_7 \Delta \text{MARKET\_ADJ\_RETURN}_{it} + \beta_8 \Delta \text{DEBT\_ASSET}_{it} + \beta_9 \Delta \text{DIV\_YLD}_{it} + \beta_{10} \Delta \text{PRICE\_LOG}_{it} + \beta_{11} \Delta \text{ROI}_{it} + \beta_{12} \Delta \text{PRICE\_LOG}_{it} + \epsilon_{it}
\]
One of the potential consequences of using the instrumental variable is endogeneity problems, so a fixed firm effect is introduced into each of the regressions, where a dummy variable was used for each of the firms in the sample, see below

\[ \text{INSTITUTIONAL OWNERSHIP}_{it} = \beta_0 + \beta_1 \text{GOVERNANCE RATING}_{it} + \beta_2 \log \text{MKT. CAP}_{it} + \beta_3 \text{AVG. TRADE VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{ORISK}_{it} + \beta_6 \text{MARKET ADJ. RETURN}_{it} + \beta_7 \text{DEBT. ASSET}_{it} + \beta_8 \text{DIV. YLD}_{it} + \beta_9 \text{PE}_{it} + \beta_{10} \text{ROE}_{it} + \beta_{11} \text{PRICE. LOG}_{it} + \beta_{12} \text{FIXED EFFECT}_{it} + \epsilon_{it} \]

The results from the fixed firm effect regressions are used to determine causality is present.

6.10 Limitations
The study main objective is to examine if there was an association between institutional ownership. The study is set in the UK and over a relatively short time period, however, it is comparable to similar studies (Chung and Zhang, 2011; Bushee et al, 2013; Hawas and Tse, 2016). The sample size is smaller than US equivalent studies, although comparable to previous UK research (Hawas and Tse, 2016, Kurshed et al, 2011). The use of an off the shelf governance rating, CGQ ratings designed by RiskMetrics, does have both advantages and disadvantages, as these were discussed in section 6.5 of this chapter. However, as it is the market leader many institutional investors would use this score when reviewing a firm’s corporate governance. Further examination of the limitations of the research is discussed alongside the empirical results and discussion presented in chapters seven, eight and nine.

6.11 Summary
This chapter identifies the theoretical approach in this study, which is realist approach, where the study’s is aim is to examine if institutional investor preferences for good corporate governance, this is done through regression analysis, it is not intended to have a ‘covering law’ like in classic positivism.

The main research method that is OLS regression, the Hayes and Cai methods to check for any heteroscedastic tendencies and to check for endogeneity effects a fixed firm effect is employed. However, there are slight variations to these tests, for the examination of the block-holders a Logit regression is used and to examine the impact of the financial crisis on institutional preferences for good governance, a linear mixed model is used.
The following chapter presents the overall descriptive statistics for the thesis. It also presents the empirical findings and discussion for the sub-scores for the audit environment, the board, and remunerations practices.
Chapter Seven

Results and Discussion for the Sub Scores
7.0 Introduction
Chapter seven presents the results for all of the sub-scores and discusses these findings. It begins by first presenting the descriptive statistics for the whole study. The chapter then proceeds to present the findings for institutional shareholdings relationship with each of the ISS (RiskMetrics) sub-scores, starting with the audit score (AUDIT), compensation score (COMP) and then the board score (BOARD) and finally discusses these findings.

The results and discussion in this chapter answer the research of whether there is a particular element of good governance that is more influential over investors preferences. In addition, it answers the questions outlined in the introduction chapter in relation to the sub-scores “Do institutional investors’ preferences change when they have different levels of block-ownership?” and “Given the study period, is there any changes in association between institutional preferences from pre-financial crisis, during the crisis and post-crisis?”.

7.1 Descriptive Statistics
Table 7 presents the descriptive statistics for all of the dependent variables, which are; share ownership, as represented by total institutional shareholdings, block-holdings between 3-5%, 5-10%, 10-20% and 20%≥, and the total ownership for each type of investor. Also the independent variables, which are the two general governance scores (INDEX and INDUSTRY) and the three sub-score (AUDIT, BOARD and COMP) and the control variables for the whole period.
Table 7 Descriptive Statistics

Where AUDIT is the score of the audit environment, BOARD is the score based on the board practices, COMP is rating given for the fairness of pay and the independence of the remuneration committee ranging from 1 to 5, where 5 is good and 1 is bad, INDEX is the corporate governance percentile score for a firm in comparison to the MSCI EAFE Index, INDUSTRY is the governance percentile score in comparison to the firms industry classification, INST_OWN is the percentage ratio of the number of shares held by institutional investors to the total number of shares outstanding; The institutions are then split into four block holder groups, where OWN_3_5 represents all firms with ownership between 3% to 5%, OWN_5_10 is the cumulative block ownership between 5% to 10%, OWN_10_20 is the block ownership between 10% to 20%, OWN_20 is the block ownership 20% ownership, Pension is the percentage share ownership for pension funds, Insurance is the percentage ownership for insurance firms, HEDGE_FUND is the percentage ownership for hedge funds, INVESTMENT_ADVISOR is the percentage ownership for investment advisors, LOG_MKT_CAP is the natural log of the market capitalisation at time t, AVERAGE_TRADE_VOLUME is the average number of shares traded over the month divided by the shares in issue x 100, BETA_t is the market model beta calculated from daily returns measure over a year, IDORISK_t is standard deviation of the market model residuals of daily returns measured over a year prior; MARKET_ADJ_RETURN_t returns on share for 1 year less risk free rate divided by beta for share; DEBT_ASSET_t is total debt including long and short term divided by total assets x 100; DIV_YLD_t is dividend per share/ last price; ROE_t net income available for common shareholders divided by average common equity for that year x 100; P_B_t is Price of stock dividend by trailing EPS; PRICE_LOG_t is the LOG of last share price at t.

<table>
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<th>Minimum</th>
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Table 8 shows the Pearson correlations for the independent and control variables. As can be seen none of the correlations coefficients are <0.80, thus avoiding multicollinearity problems. Except for the INDEX and INDUSTRY scores, however, this is expected as they are both measures for overall corporate governance, and neither are used in the same regression.
**Table 8 Pearson’s Correlation Matrix**

This table presents the Pearson correlations matrix for the main variables used in the analysis. INST_OWN is that ratio of the number of shares held by institutional investors to the total number of shares outstanding; OWN_3_5 is the block ownership between 3 to 5%; OWN_5_10 is the cumulative block ownership between 5 to 10%; OWN_10_20 is the block ownership between 10 to 20%; OWN_20 is the block ownership 20% ownership. AUDIT is the score of the audit environment, BOARD is the score based on the board practices, COMP is rating given for the fairness of pay and the independence of the remuneration committee, INDEX is the corporate governance score for a firm in comparison to the MSCI EAFE Index, INDUSTRY is the governance score in comparison to the firms industry classification, LOG_MKT_CAP is the natural log of the market capitalisation at time t, AVERAGE_TRADE_VOLUME is average number of shares traded over the month divided by the shares in issue x 100, BETA is the market model beta calculated from daily returns measure over a year, IDORISK is the standard deviation of the market model residuals of daily returns measured over a year prior; MARKET_ADJ is the returns on share for 1 year less risk free rate divided by beta for share; DEBT_ASSET is total debt including long and short term divided by total assets x 100; DVD_YLD is dividend per share/ last price; ROE is net income available for common shareholders divided by average common equity for that year x 100; Price of stock divided by trailing EPS; PRICE_LOG is the LOG of last share price at t.

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<th>10-20% Ownership</th>
<th>20% Ownership</th>
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<th>BOARD</th>
<th>COMP</th>
<th>INDEX</th>
<th>INDUSTRY</th>
<th>LOG_MKT_CAP</th>
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<th>IDORISK</th>
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<td>-.02</td>
<td>.02</td>
<td>-.02</td>
<td>0.00</td>
<td>.03</td>
<td>.01</td>
<td>-.02</td>
<td>.049**</td>
<td>-.02</td>
<td>.02</td>
<td>.03</td>
<td>-.059**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.039</td>
<td>0.007</td>
<td>0.016</td>
<td>0.05</td>
<td>-.08</td>
<td>.153**</td>
<td>.211**</td>
<td>.02</td>
<td>.222**</td>
<td>.159**</td>
<td>.106**</td>
<td>.085**</td>
<td>.01</td>
<td>0.00</td>
<td>.04</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>0.046</td>
<td>0.029</td>
<td>.074**</td>
<td>-.02</td>
<td>-.02</td>
<td>-.04</td>
<td>-.05</td>
<td>.073**</td>
<td>-.04</td>
<td>-.05</td>
<td>-.157**</td>
<td>-.060**</td>
<td>-.137**</td>
<td>-.084**</td>
<td>-.02</td>
<td>.064**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PE</td>
<td>-.006</td>
<td>0.012</td>
<td>0.000</td>
<td>0.05</td>
<td>.02</td>
<td>.02</td>
<td>.00</td>
<td>.03</td>
<td>.02</td>
<td>.02</td>
<td>.066**</td>
<td>.02</td>
<td>.00</td>
<td>.097**</td>
<td>.03</td>
<td>-.02</td>
<td>-.01</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>-.049</td>
<td>-.002</td>
<td>-.073**</td>
<td>0.00</td>
<td>.02</td>
<td>.053**</td>
<td>.03</td>
<td>.01</td>
<td>.03</td>
<td>.01</td>
<td>.100**</td>
<td>.053**</td>
<td>.01</td>
<td>.083**</td>
<td>.02</td>
<td>.00</td>
<td>.00</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>-.219**</td>
<td>-.024</td>
<td>.086**</td>
<td>-.236</td>
<td>.189**</td>
<td>.05</td>
<td>.082**</td>
<td>.04</td>
<td>.093**</td>
<td>.093**</td>
<td>.595**</td>
<td>.154**</td>
<td>.215**</td>
<td>-.414**</td>
<td>.049**</td>
<td>-.05</td>
<td>.254**</td>
<td>.064**</td>
<td>.134**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*p = 10% **p=5% ***p = 1%
7.2 Audit Environment

This section presents the results of the positive association between institutional ownership and the audit score. The section first outlines the descriptive statistics relating to the audit score, then discusses the findings for the positive association between total institutional ownership and the audit score and the robustness checks to demonstrate the validity of the results. The section follows with the results for the different block-ownership levels and the corresponding robustness checks for endogeneity. Then finally it presents the results of the impact of the financial crisis on the association between total ownership and the audit score and the robustness checks.

7.2.1 Aims of Audit Environment

The aim of this section is to examine the relationship between institutional ownership and its audit score and address the following hypothesis:

H1a – There is a positive association between total institutional ownership and audit score.

H1b Where block-ownership is greater there will be less association between institutional ownership and the audit score.

H1c - There is an increase in the positive association between the institutional ownership from before and after the financial crisis of 2007-8 to the audit score.

7.2.2 Descriptive Statistics

In this section, the descriptive statistics for the audit score (AUDIT) are presented in Table 9 and they show that there has been a general improvement in UK firms audit environment over the study period.
Table 9 Descriptive Statistics for Audit Score

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIT</td>
<td>1.000</td>
<td>5.000</td>
<td>4.480</td>
<td>0.724</td>
</tr>
<tr>
<td>Pre-Crisis</td>
<td>1.000</td>
<td>5.000</td>
<td>4.290</td>
<td>0.800</td>
</tr>
<tr>
<td>Crisis</td>
<td>1.000</td>
<td>5.000</td>
<td>4.420</td>
<td>0.787</td>
</tr>
<tr>
<td>Post-Crisis</td>
<td>2.000</td>
<td>5.000</td>
<td>4.730</td>
<td>0.492</td>
</tr>
<tr>
<td>3-5% Ownership</td>
<td>1.000</td>
<td>5.000</td>
<td>4.500</td>
<td>0.721</td>
</tr>
<tr>
<td>5-10% Ownership</td>
<td>1.000</td>
<td>5.000</td>
<td>4.500</td>
<td>0.715</td>
</tr>
<tr>
<td>10-20% Ownership</td>
<td>1.000</td>
<td>5.000</td>
<td>4.470</td>
<td>0.736</td>
</tr>
<tr>
<td>20%≥ Ownership</td>
<td>1.000</td>
<td>5.000</td>
<td>4.400</td>
<td>0.807</td>
</tr>
</tbody>
</table>

The audit score is quite high with a mean of 4.480 and the standard deviation of 0.724, as expected, as these index scores are comparable to firms worldwide and the UK is considered one of the most advanced countries for corporate governance (Black, 1992). From Table 9 it is apparent that the audit environment has improved, as before the financial crisis (2006 to 2007) the audit score is only 4.290 and has improved to 4.730 in the post-financial crisis period (2009 to 2010). The score variation between firms has lessened, with the standard deviation reducing from 0.800 in the pre-crisis period to 0.492 in the post-crisis period. This suggests that since the financial crisis companies have uniformly taken a different approach to the audit environment and improved their scores across the board. However, the change may have been driven largely by the NAS fees and independence of the audit committee because of UK Corporate Governance Code requirements and avoiding excessive NAS from auditors due to revised Ethical Standards and increased interest from EU. The average audit score appears to vary across the various block holder groups, with there being a lower score and more varied the greater level of ownership.
Table 10 Descriptive Statistics for the Change in Audit Score and Institutional Ownership

The firm year data is ranked by Audit score into groups based on frequency, where 1 is lowest group score (Audit score between 1-3) and 3 is the highest group score (Audit score of 5). The 1st column of the table represents the mean total institutional ownership within each quantile. Column 2 represents the mean total institutional ownership for the pre-crisis period (2006-07). Column 3 represents the mean total institutional ownership for the crisis period (2008). Column 4 represents the mean total institutional ownership for the post crisis period (2009-10). Column 5 represents the mean institutional ownership for owners with between 3-5% block-holdings for the whole period. Column 6 represents the mean institutional ownership for owners with between 5-10% block-holdings for the whole period. Column 7 represents the mean institutional ownership for owners with between 10%-20% block-holdings for the whole period. Column 8 represents the mean institutional ownership for owners with 20% and above block-holdings for the whole period. The T test is performed on value of institutional ownership for firms that belonged to the highest Audit score ranking is statistically different from the corresponding value for firms that belong to the lowest Audit score.

<table>
<thead>
<tr>
<th>Audit Score ranking</th>
<th>Total Institutional Ownership</th>
<th>Pre-Crisis</th>
<th>Crisis</th>
<th>Post Crisis</th>
<th>3-5% Ownership</th>
<th>5-10% Ownership</th>
<th>10-20% Ownership</th>
<th>20%+ Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (bottom)</td>
<td>Mean</td>
<td>33.84</td>
<td>35.69</td>
<td>33.26</td>
<td>14.53</td>
<td>11.91</td>
<td>14.88</td>
<td>20.86</td>
</tr>
<tr>
<td>2 (middle)</td>
<td>Mean</td>
<td>33.14</td>
<td>33.60</td>
<td>37.96</td>
<td>30.12</td>
<td>12.44</td>
<td>15.06</td>
<td>17.66</td>
</tr>
<tr>
<td>3 (highest)</td>
<td>Mean</td>
<td>34.16</td>
<td>31.39</td>
<td>36.46</td>
<td>35.20</td>
<td>12.82</td>
<td>15.49</td>
<td>17.35</td>
</tr>
</tbody>
</table>

Mean T Test

| T statistic | 0.23 | 2.31 | -1.11 | -4.02 | -1.62 | -0.72 | 3.77 | 1.31 |
| F statistic  | 1.07 | 1.66 | 0.10  | 4.29  | 0.43  | 0.04  | 9.42 | 3.27 |
| Significance | 0.30 | 0.20 | 0.75  | 0.04  | 0.51  | 0.85  | 0.00 | 0.07 |

Table 10 shows the descriptive statistics when comparing the difference between institutional share ownership and the best and the worst audit score. It can be seen from the initial examination that total institutional ownership is higher on average in firms with a better audit score, as the highest has a mean of 34.16% ownership compared to 33.84% to the lowest score, however it is not statistically significant when using a T-test.

When reviewing the time-period results, it can be seen that the only significant results are from the post-crisis period, where the average ownership in the worst group is 14.53% compared to the companies with the highest audit score a mean of 35.20% and the difference is significant at the 5% level. From these initial inspections in the post-crisis period institutional investors appear to be more sensitive to the audit score.

For the block-ownership levels, the only results that proved to be significant are the ownership levels of 10-20% and 20%≥ levels. Where the 10 to 20% range has a mean ownership level of 20.86% in the worst group compared to 17.35% in the best group at a 1% significant, this suggests that larger owners do not seek out firms with good audit scores. This is consistent with the 20%≥ levels, which also has a similar pattern with 28.38% mean in the
worst group compared to the best group of 28.38 and the observations are significantly
different from each other at the 10% level.

All of these associations are examined further in the following part of this chapter, as the
descriptive statistics help build a picture of the association between institutional ownership
and the audit score, but does not control for other factions, which the regression that follows
does.

7.2.3 Total Institutional Ownership
The results for the regression of total institutional ownership and the audit score (AUDIT) are shown in Table 11. The results show that unlike prior the majority of prior research (Fernando, 2006; Gompers and Metrick) there is a significant negative relationship between the size (LOG_MKT_CAP) and institutional ownership as measured by the log of the market capitalisation with a correlation coefficient of -10.364. In contrast to this prior research, this study is based upon UK data and the reportable ownership is only 3% or above, consequently, there is an exclusion of any lower level ownership unlike the data from prior research that uses US data (Gompers, et al, 2003; Chung and Zhang, 2011). In addition, to have a stake in a large firm above 3% obviously requires considerable resources compared with investing in smaller firms. There is also a positive relationship between trade volumes, as this is the proxy for liquidity in the stocks (Chung and Zhang, 2011, Fernando, et al 2006). It appears that institutional owners as a homogeneous group do prefer to invest in firms with lower dividends, as there is a negative significant association between total institutional ownership and dividend yield (DIV_YLD), this is consistent with Cready (1994), with a correlation coefficient of -4.265.
Table 11 Regression Results for Total Institutional Ownership and Audit Score

The results of this table show the results for the following regression model:

\[ INST\_OWN_{it} = \alpha + \beta_1 AUDIT_{it} + \beta_2 \text{LOG}\_MKT\_CAP_{it} + \beta_3 \text{AVERAGE}\_TRADE\_VOLUME_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IODRISK}_{it} + \beta_6 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_7 \text{DEBT}\_ASSET_{it} + \beta_8 \text{DIV\_YLD}_{it} + \beta_9 \text{ROE}_{it} + \beta_{10} \text{PRICE}\_LOG_{it} + \varepsilon_{it} \]

Where INST\_OWN\_it is the ratio of the number of shares held by institutional investors to the total number of shares outstanding, AUDIT is the audit score developed by Risk Metrics and have a range between 1 to 5, AVERAGE\_TRADE\_VOLUME\_it average number of shares traded over the month divided by the shares in issue x 100, BETA\_it is the market model beta calculated from daily returns measure over a year, IODRISK\_it standard deviation of the market model residuals of daily returns measured over a year prior, MARKET\_ADJ\_RETURN\_it returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET\_it total debt including long and short term divided by total assets x 100; DIV\_YLD\_it dividend per share/ last price; ROE\_it net income available for common shareholders divided by average common equity for that year x 100; P\_E\_it Price of stock dividend by trailing EPS; PRICE\_LOG\_it is the LOG of last share price at t. *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIT</td>
<td>2.131***</td>
<td>2.295***</td>
</tr>
<tr>
<td></td>
<td>(3.234)</td>
<td>(3.453)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>2.919**</td>
<td>2.9417**</td>
</tr>
<tr>
<td></td>
<td>(-10.364)</td>
<td>(-11.712)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>1.962</td>
<td>2.1939</td>
</tr>
<tr>
<td></td>
<td>(1.340)</td>
<td>(1.422)</td>
</tr>
<tr>
<td>IODRISK</td>
<td>-10.780</td>
<td>-17.3842</td>
</tr>
<tr>
<td></td>
<td>(-0.184)</td>
<td>(-0.410)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.027</td>
<td>-0.0477</td>
</tr>
<tr>
<td></td>
<td>(-0.226)</td>
<td>(-0.236)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.020</td>
<td>-0.0207</td>
</tr>
<tr>
<td></td>
<td>(-0.868)</td>
<td>(-0.860)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-4.265**</td>
<td>-4.134</td>
</tr>
<tr>
<td></td>
<td>(-2.004)</td>
<td>(-1.190)</td>
</tr>
<tr>
<td>PE</td>
<td>0.003</td>
<td>0.0033</td>
</tr>
<tr>
<td></td>
<td>(0.799)</td>
<td>(0.695)</td>
</tr>
<tr>
<td>ROE</td>
<td>-1.301</td>
<td>-1.1972</td>
</tr>
<tr>
<td></td>
<td>(-1.019)</td>
<td>(-0.855)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>-0.363</td>
<td>-0.4979</td>
</tr>
<tr>
<td></td>
<td>(-0.269)</td>
<td>(-0.346)</td>
</tr>
</tbody>
</table>

Year Dummy Included | Yes | Yes | No | Yes |
Industry Dummies    | Yes | Yes | Yes | Yes |

Adjusted \( R^2 \) | 0.177 | 0.181 |
Observations        | 1465  | 1465  |
F Statistic         | 15.967 | 22.043 |
VIF                 | 1.215  | 1.222  |

The results in Table 11 show that there is a positive significant association between auditing environment factors and total institutional ownership when using both the Pooled OLS method showing a correlation coefficient of 2.131 with a 1% significance and Hayes and Cai method to control for heteroscedasticity showing a 2.295 correlation coefficient, again at the 1% level. This is consistent with previous research on corporate governance and total institutional ownership (Chung and Zhang, 2011; Hawas and Tse, 2016) and research about institutional ownership and the fraction of non-audit services to total audit fees (Mitra and Hossain, 2007). This shows that when total institutional ownership increases so do the audit
environment rating, as measured by the AUDIT. In prior research the level of non-audit fees to total audit fees has been used as a proxy for independence (Defond et al, 2002 and Frankel 2002), this suggests that institutional owners prefer to invest in firms that have more perceivably independent auditors, however, non-audit fees to total audit fees is a rather one dimensional measure of independence. Where two elements of the audit score could be argued to relate to independence; disclosure of tenure policy and the level of non-audit fees to total audit fees, where the level of non-audit fees and length of tenure have both been cited as features that reduced auditor independence (Department for Business Innovation and Skills, 2014).

7.2.3.1 Robustness checks
To examine the relationship has been tested further with four tests on endogeneity; a fixed firm effect, 2SL and two variations of the change in the audit score variable. The fixed firm effect model takes into account any bias in ownership caused by the firm (Elshandidy and Neri, 2015). By including a fixed firm effect, it would control for unobservable effects that may vary across firms but are constant over time. The firm fixed effect accounts for an industry specific effects, thus the industry dummy variable is not used in these regressions.
### Table 12 - Robustness Checks for the Audit Score

The results of this table show the results for the following regression model:

$$
\text{INST\_OWN}_{it} = \alpha + \beta_1 \text{AUDIT}_{it} + \beta_2 \text{LOG\_MKT\_CAP}_{it} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IDORISK}_{it} + \beta_6 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_7 \text{DEBT\_ASSET}_{it} + \beta_8 \text{DIV\_YLD}_{it} + \beta_9 \text{ROE}_{it} + \beta_{10} \text{P\_E}_{it} + \beta_{11} \text{PRICE\_LOG}_{it} + \varepsilon_{it}
$$

Where INST\_OWN\_t is the ratio of the number of shares held by institutional investors to the total number of shares outstanding. AUDIT is the audit score developed by Risk Metrics and have a range between 1 to 5, AVERAGE\_TRADE\_VOLUME\_t is average number of shares traded over the month divided by the shares in issue x 100, BETA\_t is the market model beta calculated from daily returns measure over a year, IDORISK\_t standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN\_t returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET\_t is the ratio of the number of shares held by institutional investors to the total number of shares outstanding, BETA\_t score developed by Risk Metrics and have a range between 1 to 5, AVERAGE\_TRADE\_VOLUME\_t, DIV\_YLD\_t, DEBT\_ASSET\_t, ROE\_t, P\_E\_t net income available for common shareholders divided by average common equity for that year x 100; P\_E\_t Price of stock dividend by trailing EPS; PRICE\_LOG\_t is the LOG of last share price at t. ***, and **** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>2SLS (1st Stage Regression)</th>
<th>2SLS (2nd Stage Regression)</th>
<th>Fixed Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.658</td>
<td>2.568</td>
<td>0.935</td>
</tr>
<tr>
<td></td>
<td>(3.833)</td>
<td>(3.833)</td>
<td>(1.750)</td>
</tr>
<tr>
<td>CEO_TENURE</td>
<td>-0.017</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>0.083</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.968)</td>
<td>-10.437</td>
<td>-9.863</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>0.125</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.804)</td>
<td>2.988</td>
<td>-0.359</td>
</tr>
<tr>
<td>BETA</td>
<td>0.046</td>
<td>2.456</td>
<td>0.299</td>
</tr>
<tr>
<td></td>
<td>(0.734)</td>
<td>(1.551)</td>
<td>(0.203)</td>
</tr>
<tr>
<td>IDORISK</td>
<td>-4.471</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>-5.653</td>
<td>25.907</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.003</td>
<td>-0.033</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.606)</td>
<td>(0.245)</td>
<td>-2.668</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.003</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.411)</td>
<td>-0.017</td>
<td>-0.030</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-0.025</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.766)</td>
<td>-3.823</td>
<td>0.075</td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>-1.766</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>0.002</td>
<td>0.000</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.092</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.662)</td>
<td>-0.784</td>
<td>0.060</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.051</td>
<td>-1.206</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.907)</td>
<td>(0.845)</td>
<td>5.982</td>
</tr>
</tbody>
</table>

**Year Dummy Included**

- No
- Yes

**Industry Dummies**

- Yes
- No

**Adjusted R2**

- 0.155

**Observations**

- 1266

**F Statistic**

- 12.09

**VIF**

- 1.184

The number of observations is lower for the 2SLS as it was not possible to obtain all of the firm’s CEO tenure.

---

(1) The number of observations is lower for the 2SLS as it was not possible to obtain all of the firm’s CEO tenure.
From the results in Table 12 it can be seen the correlation coefficient is 0.935* for the fixed firm effects regression. This suggests that institutional investors tilt their portfolio to firms with good governance. These results are consistent with the results from the 2SL. In Table 12 panel 1 the results are for the first stage of the regression, where the audit score is used as the dependent variable and CEO tenure is introduce as an instrumental variable. It is found that there is a negative significant association between the AUDIT and CEO tenure, this is expected, as Chung and Zhang (2011) explained that the longer a CEO is in position the firmer the grip is on power, thus the general corporate governance of an organisation is impaired. This is found to be true from the results found for the audit environment. The second stage of the regression is shown in panel 2 shows that there is a strongly significant with correlation coefficient 2.658***, providing evidence to support the view that endogeneity is not an issue with this data.

To further examine the relationship a regression has been run to see if the change in the variables, results in similar findings. The regression has been run with the dependent variable being lagged and used as part of an additional independent variable, to demonstrate causality. However, when excluding this variable, the results are not significant.
Table 13 Results for Change in Variables and Audit Score

The results of this table show the results for the following regression model:

\[
\Delta \text{INST} \_\text{OWN} \_i,t = \beta_0 + \beta_1 \Delta \text{AUDIT} \_i,t + \beta_2 \Delta \text{LOG} \_\text{MKT} \_\text{CAP} \_i,t + \beta_3 \Delta \text{AVERAGE} \_\text{TRADE} \_\text{VOLUME} \_i,t + \\
\quad + \beta_4 \Delta \beta_\text{E}\_i,t + \beta_5 \Delta \text{DIV} \_\text{YLD} \_i,t + \beta_6 \Delta \text{DEBT} \_\text{ASSET} \_i,t + \beta_7 \Delta \text{IN} \_\text{COME} \_\text{FOR} \_\text{COMP} \_\text{SHR} \_i,t + \\
\quad + \beta_8 \Delta \text{ROE} \_i,t + \beta_9 \Delta \text{PRICE} \_\text{LOG} \_i,t + \epsilon_i,t
\]

Where \( \Delta \text{INST} \_\text{OWN} \_i,t \) is the change in the ratio of the number of shares held by institutional investors to the total number of shares outstanding, \( \Delta \text{AUDIT} \_i,t \) is the change in average number of shares traded over the month divided by the shares in issue x 100 from \( t \) to \( t+1 \); \( \Delta \beta_\text{E} \_i,t \) is the change in market model beta calculated from daily returns measure over a year from \( t \) to \( t+1 \); \( \Delta \text{IDORISK} \_i,t \) is the change in standard deviation of the market model residuals of daily returns measured over a year prior from \( t \) to \( t+1 \); \( \Delta \text{MARKET} \_\text{ADJ} \_\text{RETURN} \_i,t \) is the change in returns on share for 1 year less risk free rate divided by beta for share from \( t \) to \( t+1 \); \( \Delta \text{DEBT} \_\text{ASSET} \_i,t \) is the change in total debt including long and short term divided by total assets x 100 from \( t \) to \( t+1 \); \( \Delta \text{DIV} \_\text{YLD} \_i,t \) is the change in dividend per share/ last price from \( t \) to \( t+1 \); \( \Delta \text{ROE} \_i,t \) is the change in net income available for common shareholders divided by average common equity for that year x 100 from \( t \) to \( t+1 \); \( \Delta \text{PRICE} \_\text{LOG} \_i,t \) is the change in price of stock dividend by trailing EPS from \( t \) to \( t+1 \); \( \Delta \text{PRICE} \_\text{LOG} \_i,t \) is the change in log of last share price at \( t \) from \( t \) to \( t+1 \); ** and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
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<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th></th>
<th>Pooled OLS</th>
</tr>
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<tr>
<td>( \Delta \text{AUDIT} )</td>
<td>1.342</td>
<td>*</td>
<td>0.579</td>
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<tr>
<td></td>
<td>(1.647)</td>
<td></td>
<td>(1.039)</td>
</tr>
<tr>
<td>( \Delta \text{LOG} _\text{MKT} _\text{CAP} )</td>
<td>-0.727</td>
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<td>-0.893</td>
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<tr>
<td></td>
<td>(-1.253)</td>
<td></td>
<td>(-0.667)</td>
</tr>
<tr>
<td>( \Delta \text{AVERAGE} _\text{TRADE} _\text{VOLUME} )</td>
<td>-0.926</td>
<td></td>
<td>-0.893</td>
</tr>
<tr>
<td></td>
<td>(-0.682)</td>
<td></td>
<td>(-0.667)</td>
</tr>
<tr>
<td>( \Delta \beta_\text{E} )</td>
<td>-12.943</td>
<td></td>
<td>-18.989</td>
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<tr>
<td></td>
<td>(-0.083)</td>
<td></td>
<td>(-0.157)</td>
</tr>
<tr>
<td>( \Delta \text{IDORISK} )</td>
<td>-0.670</td>
<td></td>
<td>-1.380</td>
</tr>
<tr>
<td></td>
<td>(-0.382)</td>
<td></td>
<td>(-0.998)</td>
</tr>
<tr>
<td>( \Delta \text{MARKET} _\text{ADJ} _\text{RETURN} )</td>
<td>-11.702</td>
<td></td>
<td>0.468</td>
</tr>
<tr>
<td></td>
<td>(-0.392)</td>
<td></td>
<td>(0.017)</td>
</tr>
<tr>
<td>( \Delta \text{DEBT} _\text{ASSET} )</td>
<td>-0.036</td>
<td>***</td>
<td>-0.034</td>
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<tr>
<td></td>
<td>(-3.022)</td>
<td></td>
<td>(-2.860)</td>
</tr>
<tr>
<td>( \Delta \text{DIV} _\text{YLD} )</td>
<td>0.119</td>
<td>**</td>
<td>0.036</td>
</tr>
<tr>
<td></td>
<td>(2.132)</td>
<td></td>
<td>(0.959)</td>
</tr>
<tr>
<td>( \Delta \text{ROE} )</td>
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<td></td>
<td>(0.192)</td>
<td></td>
<td>(1.034)</td>
</tr>
<tr>
<td>( \Delta \text{PRICE} _\text{LOG} )</td>
<td>0.002</td>
<td></td>
<td>0.000</td>
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<td></td>
<td>(1.081)</td>
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<td>(0.187)</td>
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<td>Industry Dummies</td>
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<td>VIF</td>
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165
There is clear evidence that there is a positive significant association between the audit environment (AUDIT) and the total institutional ownership; this means H1a can be accepted and the null rejected.

7.2.4 Block-Ownership
The results in Table 14 present the Pooled OLS regression and the Hayes and Cai method regression of the audit score against institutional block ownership at different levels. It is evident that only ownership for 3-5% and 5-10% yield any significant results, with 3-5% showing positive weakly significant results using the Hayes and Cai method with a correlation coefficient of 0.4963* and 5-10%, with positive significant results for both methods, with Pooled OLS correlation coefficient 0.924** and Hayes and Cai correlation coefficient of 1.354***. The remaining levels of block ownership (10-20% and 20%≥) show a negative insignificant association.
<table>
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<tr>
<td></td>
<td>3% to 5%</td>
<td>3% to 5%</td>
<td>5% to 10%</td>
<td>5% to 10%</td>
<td>10% to 20%</td>
<td>10% to 20%</td>
<td>10% to 20%</td>
<td>20% and above</td>
<td>20% and above</td>
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<td>-0.5144</td>
<td>-0.886</td>
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<tr>
<td></td>
<td>(0.773)</td>
<td>(1.745)</td>
<td>(2.265)</td>
<td>(3.393)</td>
<td>(0.023)</td>
<td>(0.970)</td>
<td>(0.743)</td>
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<td>-2.1146</td>
<td>***</td>
<td>-4.351</td>
<td>***</td>
<td>-3.8045</td>
<td>***</td>
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<td></td>
<td>(5.796)</td>
<td>(5.555)</td>
<td>(-6.498)</td>
<td>(-6.563)</td>
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<td>(-1.137)</td>
<td>(5.576)</td>
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<td>1.485</td>
<td>0.0924</td>
<td>-0.018</td>
<td>-0.127</td>
<td>-1.799</td>
<td>-1.4105</td>
<td>-4.451</td>
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<tr>
<td></td>
<td>(3.067)</td>
<td>(1.520)</td>
<td>(1.556)</td>
<td>(0.035)</td>
<td>(0.185)</td>
<td>(0.117)</td>
<td>(1.836)</td>
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<td></td>
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<td>0.0018</td>
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<td></td>
<td>(0.880)</td>
<td>(0.860)</td>
<td>(0.064)</td>
<td>(0.118)</td>
<td>(1.211)</td>
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<td>-1.7088</td>
<td>**</td>
<td>-0.551</td>
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<td></td>
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<td>(-0.459)</td>
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<td>(-0.157)</td>
<td>(-0.436)</td>
<td>(1.260)</td>
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<tr>
<td>PE</td>
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<td>0.0028</td>
<td>0.004</td>
<td>0.0036</td>
<td>0.027</td>
<td>-0.035</td>
<td>**</td>
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<tr>
<td></td>
<td>(1.432)</td>
<td>(1.632)</td>
<td>(1.449)</td>
<td>(1.463)</td>
<td>(0.888)</td>
<td>(1.019)</td>
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<td>1.3277</td>
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<td>Year Dummy</td>
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<td>Yes</td>
<td>No</td>
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<td></td>
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<td>Industry Dummy</td>
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<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Adjusted R2</td>
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<td>0.110</td>
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<td>1.091</td>
<td>1.523</td>
<td></td>
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</tr>
</tbody>
</table>

**Table 14 Regression Results for Block-Ownership and Audit Score**

The results of this table show the results for the following regression model:

\[ BLOCK_{it} = \beta_0 + \beta_1 AUDIT_{it} + \beta_2 LOG_MKT_CAP_{it} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 IODRISK_{it} + \beta_6 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_7 \text{DEBT\_ASSET}_{it} + \beta_8 \text{DIV\_YLD}_{it} + \beta_9 \text{PE}_{it} + \beta_{10} \text{ROE}_{it} + \beta_{11} \text{PRICE\_LOG}_{it} + \epsilon_{it} \]

Where Block is the block ownership at each of the levels, 3-5%, 5-10%, 10-20% and 20% and above. The regression is run with each of these ownership levels, AUDIT is the Audit score developed by Risk Metrics and have a range between 1 to 5, AVERAGE\_TRADE\_VOLUME \(_{it}\) average number of shares traded over the month divided by the shares in issue \(_{x100}\), BETA\(_{it}\) is the market model beta calculated from daily returns measure over a year, IDORISK\(_{it}\) standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN\(_{it}\) returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET \(_{it}\), total debt including long and short term divided by total assets \(_{x100}\); DIV\_YLD\(_{it}\), dividend per share/ last price; ROE\(_{it}\) net income available for common shareholders divided by average common equity for that year \(_{x100}\); P\(_E\)\(_{it}\), Price of stock dividend by trailing EPS; PRICE\_LOG\(_{it}\), log of last share price at \(_{t}\). **, *** and **** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in parentheses are the t-statistics.
As the truly linear relationship could be questioned when using Pooled OLS regression for as the regressions for the OLS are run for each separate groups for each block-ownership, hence the different number of observations for each ownership grouping, a Logit regression is run for all observations. The results shown in Table 15 are consistent with the findings of the OLS regression with 3-5% having a correlation coefficient of 0.036*** and 5-10% a correlation coefficient of 0.028*.

---

32 For example, there are only 1,336 firms with institutional owners of 3 to 5% and for ownership of 20% or above there are only 99 companies in the sample that has institutional owners with a 20% or above stake in the firm.
There are some changes in the control variables across the groups, for example, the Beta has a positive correlation coefficient of 0.057** for 3-5% ownership and 0.080** for 5-10% ownership, suggesting that institution with smaller stakes are more sensitive to risk.

7.2.4.1 Robustness Checks
Similar to previous robustness checks for endogeneity a fixed firm effect is employed in the Logit regressions. It is found again that the results shown in Table 16 proved to be significant and positive for 3-5% with a correlation coefficient of 0.041*** and the 5-10% level with a correlation coefficient of 0.051***, which is consistent with all previous results.
This means that the smaller the ownership group (3-5%) and the second largest group (5-10%) are both sensitive to the audit environment. It is expected that there would be a difference in association across the group, as discussed previously there are certain fixed costs with shareholder engagement and given there is less to gain for shareholders with smaller stakes, it could be considered sensible to invest in firms with quality audit factors, especially as there is an optimal amount to invest before any activism is worthwhile (Admati, Pleider and Zechner, 1994). Gillian and Starks (2000) find that shareholders have minimal success in proxy
votes on corporate governance and coordinated groups (either individual shareholders’
groups like the USA or institutional investor groups) are the most successful, then institutional
investors followed by individuals. Also, there is a lot of evidence to suggest that good
corporate governance improves value (Gompers, Ishii et al, 2003; Core, Guay and Rusticus,
2006; Brown and Caylor, 2006). As a minority shareholder, it is more difficult to assert power,
it may be wise to invest in firms with good governance.

However, when employing a fixed firm effect for the Logit regression there is a negative
correlation coefficient of -0.047** for the 10-20%. This is suggesting that institutional
investors with higher ownership actually tilt their portfolio to firms with poor audit scores.

These results support the hypothesis:

H1b Where block-ownership is greater there will be less association between institutional
ownership and the audit score.

As the only positive associations are at 3-5% and 5-10% and then for the 10%-20% there is a
negative association with ownership and the audit score.
7.2.5 Time Period Differences
In this section, the association between the audit score and institutional ownership is examined further, by splitting the regressions into certain periods (pre-financial crisis, financial crisis, and post-financial crisis and before 2006-7 and after the financial crisis 2008-2010) to see if there is any difference.

Two sets of regressions are run, the first set of results in this section in Table 17 show the results where the regressions are run for each separate time frame and the second table in this section Table 18, used a time dummy and an interaction dummy, to examine how the relationship changed from before and after the crisis.

From simply reviewing the average audit score for this period, it is evident that the scores had improved over time and the descriptive statistics (Table 10) on how the relationship has changed from the three periods it seemed that the institutions tilted their portfolios more to firms with a better audit score. However, the regressions results seen in table 15 show the relation between the ownership and the audit environment.

The regression shown in Table 17 shows that there is a change in pattern over the study period. Where there is no relation between institutional ownership and corporate governance, where the OLS regression has a correlation coefficient of -0.376, whereas during the crisis (2008) had a correlation coefficient of 2.367* for the pooled OLS and post (2009-10) show a significant relationship with a positive correlation coefficient of 9.683***. However, these results do suggest a change in the pattern they are not robust enough to reject the hypothesis. So, further analysis is conducted to add additional validity to these finding
### Table 17 Regression Results for the Different Periods and Audit Score

The results of this table show the results for the following regression model:

\[
\text{OWN\_PERIOD}_{it} = \beta_0 + \beta_1 \text{AUDIT}_{it} + \beta_2 \text{LOG\_MKT\_CAP}_{it} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IORDRISK}_{it} + \beta_6 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_7 \text{DEBT\_ASSET}_{it} + \beta_8 \text{DIV\_YLD}_{it} + \beta_9 \text{PE}_{it} + \beta_{10} \text{ROE}_{it} + \beta_{11} \text{PRICE\_LOG}_{it} + \epsilon_{it}
\]

where OWN\_PERIOD is the percentage ownership by institutional investors during the following periods; Pre-Crisis (2006-07) Crisis (2008) and Post-Crisis (2009-10). The regression is run with each of these ownership levels, AUDIT is the audit environment score developed by Risk Metrics and have a range between 1 to 5, AVERAGE\_TRADE\_VOLUME is average number of shares traded over the month divided by the shares in issue x 100; BETA is the market model beta calculated from daily returns measure over a year, IORDRISK is standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN is returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET is total debt including long and short term divided by total assets x 100; DIV\_YLD, dividend per share/ last price; PE is net income available for common shareholders divided by average common equity for that year x 100; ROE is Price of stock dividend by trailing EPS; PRICE\_LOG is the LOG of last share price at T, *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pre-Crisis</th>
<th>Post Crisis</th>
<th>Post Crisis</th>
<th>Pre-Crisis</th>
<th>Post Crisis</th>
<th>Post Crisis</th>
<th>Pre-Crisis</th>
<th>Post Crisis</th>
<th>Post Crisis</th>
<th>Pre-Crisis</th>
<th>Post Crisis</th>
<th>Post Crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIT</td>
<td>-0.376</td>
<td>-0.4025</td>
<td>2.367</td>
<td>-0.2663</td>
<td>9.683</td>
<td>-10.275</td>
<td>-0.714</td>
<td>-0.431</td>
<td>0.966</td>
<td>-0.231</td>
<td>0.145</td>
<td>0.0117</td>
</tr>
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<td>AVERAGE_TRADE_VOLUME</td>
<td>7.197</td>
<td>7.1943</td>
<td>-0.112</td>
<td>0.6739</td>
<td>-1.857</td>
<td>0.7366</td>
<td>10.275</td>
<td>11.6468</td>
<td>11.376</td>
<td>11.376</td>
<td>11.376</td>
<td></td>
</tr>
<tr>
<td>BETA</td>
<td>(2.913)</td>
<td>(2.895)</td>
<td>(0.029)</td>
<td>(0.169)</td>
<td>(0.630)</td>
<td>(0.086)</td>
<td>(2.961)</td>
<td>(2.675)</td>
<td>(2.662)</td>
<td>(1.563)</td>
<td>(1.563)</td>
<td></td>
</tr>
<tr>
<td>IORDRISK</td>
<td>(2.140)</td>
<td>(1.441)</td>
<td>(1.177)</td>
<td>(0.734)</td>
<td>(2.662)</td>
<td>(1.563)</td>
<td>3.765</td>
<td>27.1674</td>
<td>45.017</td>
<td>-0.3069</td>
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</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>(0.034)</td>
<td>(0.179)</td>
<td>(0.352)</td>
<td>(0.695)</td>
<td>(0.570)</td>
<td>(0.004)</td>
<td>0.867</td>
<td>0.7369</td>
<td>-0.4098</td>
<td>-0.153</td>
<td>-0.145</td>
<td></td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>(2.476)</td>
<td>(0.558)</td>
<td>(0.767)</td>
<td>(0.738)</td>
<td>(1.234)</td>
<td>(1.340)</td>
<td>-0.018</td>
<td>-0.0364</td>
<td>-0.047</td>
<td>-0.0459</td>
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<tr>
<td>DIV_YLD</td>
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<td>(0.914)</td>
<td>(0.878)</td>
<td>(0.861)</td>
<td>(0.714)</td>
<td>(0.000)</td>
<td>-11.463</td>
<td>-11.3185</td>
<td>0.0013</td>
<td>-3.352</td>
<td>-3.8536</td>
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</tr>
<tr>
<td>ROE</td>
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<td>(0.290)</td>
<td>(1.497)</td>
<td>(1.226)</td>
<td>(0.164)</td>
<td>(0.431)</td>
<td>1.6111</td>
<td>1.3444</td>
<td>-3.5408</td>
<td>1.907</td>
<td>1.6013</td>
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</tr>
<tr>
<td>PRICE_LOG</td>
<td>(0.714)</td>
<td>(0.544)</td>
<td>(1.553)</td>
<td>(0.922)</td>
<td>(0.966)</td>
<td>(0.714)</td>
<td>0.154</td>
<td>0.165</td>
<td>0.238</td>
<td>0.2524</td>
<td>0.246</td>
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</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>1.181</td>
<td>1.198</td>
<td>1.313</td>
<td>1.338</td>
<td>1.327</td>
<td></td>
</tr>
</tbody>
</table>

VIF 1.198

Where \( \text{OWN\_PERIOD}_{it} \) is the percentage ownership by institutional investors during the following periods; Pre-Crisis (2006-07) Crisis (2008) and Post-Crisis (2009-10).
7.2.5.1 Robustness Checks

**Table 18** Results for Time Frame with Audit Score with the Use of Interaction Dummy and Fixed Firm Effect

<table>
<thead>
<tr>
<th>Table 18</th>
<th>Results for Time Frame with Audit Score with the use of interaction dummy and fixed firm effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>The results of this table show the results for the following regression model:</td>
<td></td>
</tr>
<tr>
<td>[ \text{INST}<em>\text{OWN}</em>{i,t} = \beta_0 + \beta_1 \text{AUDIT}<em>{i,t} + \beta_2 \text{Time}</em>{\text{Dummy}<em>{i,t}} + \beta_3 (\text{AUDIT}</em>{i,t} \times \text{Time}<em>{\text{Dummy}</em>{i,t}}) + \beta_4 \text{LOG}<em>\text{MKT}</em>{\text{CAP}_{i,t}} ]</td>
<td></td>
</tr>
<tr>
<td>+ \beta_5 \text{AVERAGE}<em>\text{TRADE}</em>\text{VOLUME}<em>{i,t} + \beta_6 \text{BETA}</em>{i,t} + \beta_7 \text{IORISK}<em>{i,t} + \beta_8 \text{MARKET}</em>\text{ADJ}<em>\text{RETURN}</em>{i,t}</td>
<td></td>
</tr>
<tr>
<td>+ \beta_9 \text{DEBT}<em>\text{ASSET}</em>{i,t} + \beta_{10} \text{DIV}<em>\text{YLD}</em>{i,t} + \beta_{11} \text{PE}<em>{i,t} + \beta</em>{12} \text{ROE}<em>{i,t} + \beta</em>{13} \text{PRICE}<em>\text{LOG}</em>{i,t} + \epsilon_{i,t}</td>
<td></td>
</tr>
</tbody>
</table>

| \text{INST}_\text{OWN} = \beta_0 + \beta_1 \text{AUDIT} + \beta_2 \text{Time}_{\text{Dummy}} + \beta_3 (\text{AUDIT} \times \text{Time}_{\text{Dummy}}) + \beta_4 \text{LOG}_\text{MKT}_{\text{CAP}} + \beta_5 \text{AVERAGE}_\text{TRADE}_\text{VOLUME} + \beta_6 \text{BETA} + \beta_7 \text{IORISK} + \beta_8 \text{MARKET}_\text{ADJ}_\text{RETURN} + \beta_9 \text{DEBT}_\text{ASSET} + \beta_{10} \text{DIV}_\text{YLD} + \beta_{11} \text{PE} + \beta_{12} \text{ROE} + \beta_{13} \text{PRICE}_\text{LOG} + \beta_{14} \text{FIXED}_\text{EFFECT} + \epsilon |

Where \text{INST}_\text{OWN}, is the percentage ownership by institutional investors. The regression is run with each of these ownership levels, \text{AUDIT} is the audit environment score developed by Risk Metrics and have a range between 1 to 5, \text{Time}_{\text{Dummy}}, is a dummy variable for before and after the financial crisis where 1 represent the period before the crisis (2005-2006) and 0 is after the crisis (2007-2010); \text{Interactive}_{\text{Dummy}_\text{Audit}} is \text{Time}_{\text{Dummy}} \times \text{AUDIT}; \text{AVERAGE}_\text{TRADE}_\text{VOLUME}, \text{t} average number of shares traded over the month divided by the shares in issue x 100, \text{BETA}_{t}, is the market model beta calculated from daily returns measure over a year, \text{IDORISK}, \text{t} standard deviation of the market model residuals of daily returns measured over a year prior; \text{MARKET}_\text{ADJ}_\text{RETURN}, \text{t} returns on share for 1 year less risk free rate divided by beta for share; \text{DEBT}_{\text{ASSET}}, \text{t} total debt including long and short term divided by total assets x 100; \text{DIV}_\text{YLD}, \text{t} dividend per share/ last price; \text{ROE}, \text{t} net income available for common shareholders divided by average common equity for that year x 100; \text{PE}, \text{t} Price of stock divided by trailing EPS; \text{PRICE}_\text{LOG}, \text{t} is the LOG of last share price at t. *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics. The numbers in the parentheses are the t statistics.
The results shown in Table 18 are consistent with the findings in the Table 17, as the time interactive time dummy correlation coefficient is -5.293*** for the pooled OLS regression, given before the crisis has a dummy value of 1 and after the crisis is 0 if there is a difference in the preference before and after the crisis it would be expected that there would be a negative significant association. As it suggests their institutional owners became more sensitive to the audit score after the financial crisis. To add to the robustness of these results a fixed firm effect is introduced and the interactive time dummy correlation coefficient is -1.776*, adding extra validly to the results33.

The results suggest that institutions became more sensitive to audit environment factors, however this is in line with expectations as confidence in the audit profession is not high, with criticisms from Barnier the then EU Commissioner for Internal markets (Hooke, 2014), so it is not surprising that institutions are more actively tilting their portfolios to firms with good audit environment, unlike before when they appeared to have not considered it an issue. In addition, firms appeared to actively improve their audit environment over the period. These results are different from what Hawas and Tse (2016) find with major shareholders when they examined some audit factors. They find that there is no relation before or during the financial crisis. However, more importantly, Hawas and Tse (2016) did not use a summary measure of the audit environment unlike this study, which as discussed in the theoretical review chapter, that institutions may favour more simple information to incorporate into their decision (Hirshleifer and Teoh, 2003). However, this study is examining the wider aspects of the audit environment.

In conclusion, there is a clear change in association over the time frame, thus hypothesis 

\textit{H1c - There is an increase in the positive association between the institutional ownership from before and after the financial crisis of 2007 to the audit score}, can be accepted and the null hypothesis rejected.

---

33 To test the association further an extra regression is run where an extra variable is introduced to capture change in audit score. The results are not significant, however, this could be on account of very few firms having an increase in audit score of 2 over the study period. The table is shown in Appendix B, table B1.
7.2.6 Summary
In summary, this section has presented the results for how institutional investors tilt their portfolios to firms that have better audit environment. There is also evidence that institutional investors with lower levels of block-holdings (3-5% and 5-10%). It is also apparent that the financial crisis had an impact on how institutional investors view the audit environment, with an increased level of significance over the period of study. Suggesting that there is a critical juncture for institutional investors and their preferences for better audit environment.

7.3 Directors Remunerations
Directors’ remunerations have been a contentious issue of corporate governance since the 1990s (Alissa, 2015). The Greenbury Report was commissioned by the CBI because of the excess executive pay (Greenbury, 1995). Since 2002, the UK has allowed shareholders to cast their non-binding vote on ‘Directors’ Remunerations Report’, also known as Say on Pay (Alissa, 2015 p 727). Remuneration resolutions in the UK are the most voted against/abstained topic out of all of the areas shareholders can vote on (Conyon and Sadler, 2010), this provides evidence that remunerations are of interest to shareholders.

The research on remunerations is vast, (Daily et al, 1998; Anderson and Bizjak, 2003; Conyon and Peck, 1998; Gregory-Smith, 2012; Alissa, 2015; Ertimur, et al, 2010), but there is very little research into how or whether institutional shareholders tilt their portfolios to firms that have more independent remunerations committees and reasonable option plans, as defined by ISS (RiskMetrics). This section examines the association between institutional shareholdings and the remuneration environment, as measured by the ISS (RiskMetrics) the compensation score (COMP) these findings help to provide important evidence on how institutional investors consider directors’ remunerations.

This section firstly presents the aims of this section and then the results on how institutional ownership is associated with UK listed firms’ compensation score (COMP), beginning with the descriptive statistics and then the regression results for total cumulative institutional investors, the different block-ownership levels and finally an in-depth analysis of the study period.
7.3.1 Aims of Remunerations
The aim of this chapter is to examine the relationship between institutional ownership and its compensation score and address the following hypothesis:

H2a There is a positive association between total institutional ownership and the compensations score.

H2b Where block-ownership is greater there will be less association between institutional ownership and the compensation score.

H2c There will be increasing in a positive association between total institutional ownership and compensation score from before and after the financial crisis of 2007-8.

7.3.2 Remunerations - Descriptive Statistics
Table 19 presents the descriptive statistics for the compensation score for the sample of UK FTSE All-share firms used in this study. The compensation score is a score ranging from 1 to 5, where 5 is good and 1 is bad. The score is developed by RiskMetric (ISS) where the score is given based on the following factors: the independence of the directors on the remuneration committee, pay for the directors being partially in options, reasonableness of the option plans or too many options, shareholder approval of option plans and repricing of options and that options should be accounted for as an expense.

The mean score is 4.140 for the whole period, however there is a change in the study period, with the crisis period (2008) having the worse compensation score of 3.50 and the highest standard deviation (1.071), however the score recovered in the post-crisis period with a mean of 4.40 and a far lower standard deviation (0.787) suggesting the most firms had improved their compensation environment.

The block-ownership statistics represent the means for firms with a certain amount of block-ownership, so where firms have institutional shareholders with ownership between 3-5% the mean compensation score is 4.150. There seems little variation over the different levels, except the 20%≥ where it is lower at 4.050. However, from the preliminary analysis, there appears little impact of ownership levels on the mean compensation score.
### Table 19 Descriptive Statistics for the Compensation Score

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Crisis</td>
<td>1.000</td>
<td>5.000</td>
<td>4.140</td>
<td>0.986</td>
</tr>
<tr>
<td>Crisis</td>
<td>1.000</td>
<td>5.000</td>
<td>4.190</td>
<td>0.990</td>
</tr>
<tr>
<td>Post-Crisis</td>
<td>1.000</td>
<td>5.000</td>
<td>4.400</td>
<td>0.787</td>
</tr>
<tr>
<td>3-5% Ownership</td>
<td>1.000</td>
<td>5.000</td>
<td>4.150</td>
<td>0.978</td>
</tr>
<tr>
<td>5-10% Ownership</td>
<td>1.000</td>
<td>5.000</td>
<td>4.120</td>
<td>0.989</td>
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<tr>
<td>10-20% Ownership</td>
<td>1.000</td>
<td>5.000</td>
<td>4.160</td>
<td>0.969</td>
</tr>
<tr>
<td>20%≥ Ownership</td>
<td>1.000</td>
<td>5.000</td>
<td>4.050</td>
<td>0.963</td>
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</table>

### Table 20 Descriptive Statistics for the Change in Compensation Score and Institutional Ownership

<table>
<thead>
<tr>
<th></th>
<th>Total Institutional Ownership</th>
<th>Pre Crisis</th>
<th>Crisis</th>
<th>Post Crisis</th>
<th>3-5% Ownership</th>
<th>5-10% Ownership</th>
<th>10-20% Ownership</th>
<th>20%≥ Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation Score</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
</tr>
<tr>
<td>1 (bottom)</td>
<td>34.99</td>
<td>37.00</td>
<td>38.24</td>
<td>31.01</td>
<td>12.75</td>
<td>15.37</td>
<td>18.43</td>
<td>29.28</td>
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<tr>
<td>2 (middle)</td>
<td>34.17</td>
<td>34.13</td>
<td>36.57</td>
<td>33.21</td>
<td>12.68</td>
<td>15.58</td>
<td>17.69</td>
<td>28.04</td>
</tr>
<tr>
<td>3 (highest)</td>
<td>32.97</td>
<td>31.93</td>
<td>30.99</td>
<td>34.39</td>
<td>12.48</td>
<td>15.08</td>
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Mean T Test

<table>
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<th>T statistic</th>
<th>F statistic</th>
<th>Significance</th>
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<tbody>
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<td></td>
<td>1.82</td>
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<tr>
<td></td>
<td>1.04</td>
<td>0.10</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td>2.63</td>
<td>1.22</td>
<td>0.27</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>0.94</td>
<td>0.01</td>
<td>0.94</td>
</tr>
</tbody>
</table>

**Note:** Where COMP represents the score for the population, Pre-Crisis is for the COMP from 2006 to 2007, Crisis is for the COMP from 2008; Post-Crisis is for the COMP from 2009 to 2010; 3-5%, 3 to 5% and 5-10%, 10-20% and 20%≥ ownership is the COMP for companies with institutional ownership between those corresponding ranges.

**Note:** The firm year data is ranked by compensation score into groups based on frequency, where 1 is lowest group score (compensation score between 1-3) and 3 is the highest group score (compensation score of 5). The 1st column of the table represents the mean total institutional ownership within each quantile. Column 2 represents the mean total institutional ownership for the pre-crisis period (2006-07). Column 3 represents the mean total institutional ownership for the crisis period (2008). Column 4 represents the mean total institutional ownership for the post crisis period (2009-10). Column 5 represents the mean institutional ownership for owners with between 3-5% block-holdings for the whole period. Column 6 represents the mean institutional ownership for owners with between 5-10% block-holdings for the whole period. Column 7 represents the mean institutional ownership for owners with between 10%-20% block-holdings for the whole period. Column 8 represents the mean institutional ownership for owners with 20% and above block-holdings for the whole period. The T test is performed on value of institutional ownership for firms that belonged to the highest compensation score ranking is statistically different from the corresponding value for firms that belong to the lowest compensation score.
Table 20 presents the mean institutional ownership for each ranked group for the compensation score. The results show that the mean total institutional ownership of firms belonging to the lowest ranking is 34.99, whereas the highest ranking is 32.97. However, after running a T-test for the whole period for the firms belonging to the lowest and highest ranked group it is not significant with a p-value of 0.81, thus suggesting that from the initial analysis there is no association between institutional ownership and the compensation score.

The next section presents the findings for the regression analysis.

7.3.3 Remuneration – Total Institutional Ownership

From the results in Table 21, there is little evidence to support the view that there is a positive relationship between firms’ compensation score and total institutional ownership, as the correlation coefficient is 0.351 for OLS regression and -0.1072 for the Hayes and Cai method, where both are not significant. In addition to the simple regression test there are robustness checks on the results, where a fixed firm effect is used, 2SLS and two change in variable tests, which are shown in Appendix C for tables C1 and C2. All of the robustness checks resulted in insignificant findings. Thus Hypothesis H2a “There is a positive association between total institutional ownership and the compensations score” is rejected and the null hypothesis accepted.
Table 21 Regression Results for Total Ownership and Compensation Score

The results of this table show the results for the following regression model:

\[
\text{INST\ OWN}_{i,t} = \alpha + \beta_1\text{COMP}_{i,t} + \beta_2\text{LOG\_MKT\_CAP}_{i,t} + \beta_3\text{AVERAGE\_TRADE\_VOLUME}_{i,t} + \beta_4\text{BETA}_{i,t} + \beta_5\text{IDORISK}_{i,t} + \beta_6\text{MARKET\_ADJ\_RETURN}_{i,t} + \beta_7\text{MARKET\_ADJ\_RETURN}_{i,t} + \beta_8\text{DEBT\_ASSET}_{i,t} + \beta_9\text{DIV\_YLD}_{i,t} + \beta_{10}\text{ROE}_{i,t} + \beta_{11}\text{P\_B}_{i,t} + \beta_{12}\text{PRICE\_LOG}_{i,t} + \epsilon_{i,t}
\]

Where \(\text{INST\ OWN}_{i,t}\) is that ratio of the number of shares held by institutional investors to the total number of shares outstanding, \(\text{COMP}\) is the compensation score developed by Risk Metrics and have a range between 1 to 5, \(\text{AVERAGE\_TRADE\_VOLUME}\) is average number of shares traded over the month divided by the shares in issue x 100, \(\text{BETA}_{i,t}\) is the market model beta calculated from daily returns measure over a year, \(\text{IDORISK}_{i,t}\) is standard deviation of the market model residuals of daily returns measured over a year prior; \(\text{MARKET\_ADJ\_RETURN}_{i,t}\) returns on share for 1 year less risk free rate divided by beta for share; \(\text{DEBT\_ASSET}_{i,t}\) total debt including long and short term divided by total assets x 100; \(\text{DIV\_YLD}_{i,t}\) dividend per share/ last price; \(\text{ROE}_{i,t}\) net income available for common shareholders divided by average common equity for that year x 100; \(\text{P\_B}_{i,t}\) Price of stock dividend by trailing EPS; \(\text{PRICE\_LOG}_{i,t}\) is the \(\text{LOG}\) of last share price at \(\text{t}\). The numbers in parentheses are t-Statistics. *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
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</thead>
<tbody>
<tr>
<td>COMP</td>
<td>0.351</td>
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</tr>
<tr>
<td></td>
<td>(0.732)</td>
<td>(0.220)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
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<td>-10.626</td>
</tr>
<tr>
<td></td>
<td>(-10.171)</td>
<td>(-11.287)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
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</tr>
<tr>
<td></td>
<td>(1.992)</td>
<td>(1.712)</td>
</tr>
<tr>
<td>BETA</td>
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<td>2.1856</td>
</tr>
<tr>
<td></td>
<td>(1.413)</td>
<td>(1.407)</td>
</tr>
<tr>
<td>IDORISK</td>
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<td>8.2924</td>
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<td>(-3.49)</td>
<td>(0.191)</td>
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<tr>
<td>MARKET_ADJ_RETURN</td>
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<td>-0.0663</td>
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<td></td>
<td>(-3.36)</td>
<td>(-3.30)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
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<td>-0.0099</td>
</tr>
<tr>
<td></td>
<td>(-0.477)</td>
<td>(-0.417)</td>
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<tr>
<td>DIV_YLD</td>
<td>-4.269</td>
<td>-4.2422</td>
</tr>
<tr>
<td></td>
<td>(-1.997)</td>
<td>(-1.227)</td>
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<tr>
<td>PE</td>
<td>0.004</td>
<td>0.0036</td>
</tr>
<tr>
<td></td>
<td>(0.820)</td>
<td>(0.739)</td>
</tr>
<tr>
<td>ROE</td>
<td>-1.115</td>
<td>-0.9559</td>
</tr>
<tr>
<td></td>
<td>(-0.871)</td>
<td>(-0.670)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>-0.350</td>
<td>-0.3106</td>
</tr>
<tr>
<td></td>
<td>(-2.59)</td>
<td>(-2.124)</td>
</tr>
</tbody>
</table>

Year Dummy Included  Yes No
Industry Dummies     Yes No

Adjusted R2          0.171  0.174
Observations         1465  1465
F Statistic          15.389 21.236
VIF                  1.206  1.211

This is not aligned with expectations; it is expected that where firms have higher institutional ownership then there would be a better remunerations environment. So, why would that be? Despite the high business media coverage of directors’ remunerations (Core, Guay and Larcker, 2008), it is a minority of shareholders that vote against the directors’ remunerations report (Alissa 2015; Conyon and Sadler, 2010), this is an indication that shareholders are actually overall satisfied with the remuneration environment of UK firms. So, if the institutional shareholders do not consider it a problem, then why adjust their portfolio to firms with a good compensation environment?
The UK has the Say on Pay since 2002 (Alissa, 2015) so it could possibly be that investors view pay as an area of corporate governance that they already have autonomy over, and thus do not consider a poor compensation environment, as an issue, as it is possible for them to force change, if they wanted, through voting. As it is found that when votes are cast against excessive pay, there is an increase in CEO turnover (Alissa, 2015).

The lack of association could arguably be because director’s remunerations are a relatively small expense for a company and could possibly be perceived as not important in the investment choices. Alternatively, possibly it could be on account of the institutions themselves, and their personal remunerations. These ideas are discussed further in section 7.5.1.

It is possible that there are issues with the compensation score itself, as the main elements are related to options and independence of the remuneration committee. It may be that institutional investors that do consider it to be of importance are using their own measure, as the score does include judgemental elements, such as the reasonableness of payment plans and these investors may not agree with ISS (RiskMetric) measures of reasonableness. The compensation score consists of elements have not been included in ‘The Code’, unlike other governance scores (Hawas and Tse, 2016).

7.3.4 Remunerations - Block-Ownership
To test the relation further the levels of block-ownership is examined. However, again, there is no relation between institutional ownership and the compensation score at any level, as both the pooled OLS regressions and the logit regressions did not have any significant association (see Appendix C in table C3, C4 and C5 for details of the results), the fixed firm effect is introduced to the logit regression and again there is no significant association. It is expected that at higher levels of ownership would not yield a significant result. However, the lower levels of block-ownership are hypothesised to have had significant results, because of the reliance of the shareholders on the directors, as when a shareholder has a smaller stake in a firm; there is less ability to force change through voting on pay. This is not the case, thus hypothesis H2b “Where block-ownership is greater there will be less association between institutional ownership and the compensation score” must be rejected and the null hypothesis accepted that there are no differences in association at different
ownership levels. The reasons for this are similar to what is stated in section 7.3.3 about total institutional ownership and remunerations.

7.3.5 Time Frame
The regressions are run again to further examine the effect of the time period on the results, specifically to see if there is a change in association from before, during and after the 2007-8 financial crisis. From Table 22 it is evident that there is again no association in the pre-crisis years between total institutional ownership, this is consistent with the other results that are found in section 7.3.3 and 7.3.4. However, the association is significant for both OLS regression and Hays and Cai (2012) model for during the crisis and after the crisis. Although it might be expected that this would be the case given the economic environment at the time when institutions became more interested in how directors’ remunerations are set (Kay Review, 2012), this is not the case during the crisis year. There is, in fact, a negative association between total institutional ownership and the compensation score, indicating that institutions apparently preferred to invest in firms that did not pay in options and had a less independent remunerations committee, this may have been because option plans are not popular in the UK. Whilst after the financial crisis the institutions preferred firms that have a better compensation score, thus more independence on the remunerations committee and more fair payments through options.

However, the results for during the crisis are only significant to 10% level, whereas after the financial crisis the results significant at the 1% level. The t-stat is only above just 1.96 with a confidence level of 5% for the post-crisis. The results show clearly that there is a change in attitude by institutional investors in the wake of the financial crisis, it is clear that the level of disinterest in the compensation score by institutions is significant in the years before the financial crisis, it being so much that the results for the whole period are not significant with the results for total ownership and the compensations score p values ranging from 0.8 to 0.4. However, these regression results show a pattern, but no proof that the difference is due to the time period, thus an interaction dummy is introduced into the regression, where 1 is before the crisis and 0 is after the crisis. As can be seen in Table 23 the correlation coefficient is 0.132 and not significant, and when controlling for firm effects the correlation coefficient is 0.338, but again not significant.
Thus, despite there being an apparent pattern for a change in preference of institutional shareholders’ preferences, hypothesis H2c *There will be increasing in a positive association between total institutional ownership and compensation score from before and after the financial crisis of 2007-8,* is rejected and the null hypothesis is accepted.
Table 22 Regression Results for Total institutional Ownership over Different periods

The results of this table show the results for the following regression model:

\[
OWN_{PERIOD,t} = \beta_0 + \beta_1COMP_{t} + \beta_2LOG_{MKT\_CAP,t} + \beta_3AVG\_TRADE\_VOLUME_{t} + \beta_4BETA_{t} + \beta_5IDORISK_{t} + \beta_6MARKET\_ADJ\_RETURN_{t} + \beta_7DEBT\_ASSET_{t} + \beta_8DIV\_YLD_{t} + \beta_9PE_{t} + \epsilon_{t}
\]

Where OWN PERIOD is the pre-crisis is 2006 and 2007, crisis is 2008 and post crisis is 2009 and 2010. The regression is run with each of these ownership periods, COMP is the Compensation score developed by Risk Metrics and have a range between 1 to 5, AVERAGE_TRADE_VOLUME_{t} average number of shares traded over the month divided by the shares in issue x 100, BETA_{t} is the market model beta calculated from daily returns measure over a year, IDORISK_{t} standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN_{t} returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET_{t} total debt including long and short term divided by total assets x 100; DIV\_YLD_{t} dividend per share/ last price; ROE_{t} net income available for common shareholders divided by average common equity for that year x 100; PE_{t} Price of stock divided by trailing EPS; PRICE\_LOG_{t} is the LOG of last share price at \(t\). *, **, and *** indicated significance at 10%, 5%, and 1% levels, respectively. The numbers in the parentheses are the t-statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai Pre-Crisis</th>
<th>Hayes &amp; Cai Crisis</th>
<th>Hayes &amp; Cai Post Crisis</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai Pre-Crisis</th>
<th>Hayes &amp; Cai Crisis</th>
<th>Hayes &amp; Cai Post Crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP</td>
<td>0.080</td>
<td>0.053</td>
<td>-1.646</td>
<td>*</td>
<td>-1.687</td>
<td>*</td>
<td>2.312</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>(0.111)</td>
<td>(0.066)</td>
<td>(1.751)</td>
<td>(1.69)</td>
<td>(2.620)</td>
<td>(2.758)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
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<td>-10.892</td>
<td>-10.699</td>
<td>***</td>
<td>-12.268</td>
<td>***</td>
<td>-10.975</td>
<td>***</td>
</tr>
<tr>
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<td>(-6.420)</td>
<td>(-7.713)</td>
<td>(-4.421)</td>
<td>(-5.490)</td>
<td>(-7.239)</td>
<td>(-7.527)</td>
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<td></td>
</tr>
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<td>AVERAGE_TRADE_VOLUME</td>
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<td>7.135</td>
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<td>0.641</td>
<td>0.643</td>
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<tr>
<td></td>
<td>(2.892)</td>
<td>(2.885)</td>
<td>(0.122)</td>
<td>(0.106)</td>
<td>(0.236)</td>
<td>(0.832)</td>
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<td>2.0495</td>
<td>5.891</td>
<td>5.8905</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-1.247)</td>
<td>(-1.452)</td>
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<td>(0.556)</td>
<td>(2.949)</td>
<td>(2.798)</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(0.705)</td>
<td>(0.217)</td>
<td>(0.133)</td>
<td>(0.601)</td>
<td>(0.023)</td>
<td>(0.021)</td>
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<td>-0.016</td>
<td>-0.016</td>
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<td></td>
<td>(2.477)</td>
<td>(0.556)</td>
<td>(0.866)</td>
<td>(0.683)</td>
<td>(1.178)</td>
<td>(0.073)</td>
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<td>0.0054</td>
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<td>(0.166)</td>
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<td>(-2.718)</td>
<td>(-1.709)</td>
<td>(0.168)</td>
<td>(0.087)</td>
<td>(0.766)</td>
<td>(0.258)</td>
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<td>PE</td>
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<td>0.0265</td>
<td>0.003</td>
<td>0.003</td>
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<td></td>
<td>(-1.009)</td>
<td>(-0.911)</td>
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<td>(2.539)</td>
<td>(0.344)</td>
<td>(0.650)</td>
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<td>-3.4232</td>
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<td>-0.245</td>
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<tr>
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<td>(0.034)</td>
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<td>(-1.490)</td>
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<td>1.710</td>
<td>1.7102</td>
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<td>(0.690)</td>
<td>(0.526)</td>
<td>(-1.273)</td>
<td>(-0.713)</td>
<td>(0.869)</td>
<td>(0.742)</td>
<td></td>
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</tr>
<tr>
<td>Year Dummy</td>
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<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
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<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.159</td>
<td>0.165</td>
<td>0.090</td>
<td>0.250</td>
<td>0.238</td>
<td>0.210</td>
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<td>624</td>
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<td>282</td>
<td>559</td>
<td>559</td>
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<td>F statistic</td>
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<td>5.879</td>
<td>10.999</td>
<td>3.246</td>
<td>9.449</td>
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</tr>
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<td>1.197</td>
<td>1.099</td>
<td>1.334</td>
<td>1.313</td>
<td>1.266</td>
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</table>
### Table 23 Results for Time Frame with Compensation Score with the Use of Interaction Dummy and Fixed Effects

The results of this table show the results for the following regression model:

\[
\text{INST\_OWN}_{it} = \beta_0 + \beta_1 \text{AUDIT}_{it} + \beta_2 \text{Time\_Dummy}_{it} + \beta_3 (\text{AUDIT}_{it} \cdot \text{Time\_Dummy}_{it}) + \beta_4 \text{LOG\_MKT\_CAP}_{it} \\
+ \beta_5 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_6 \text{BETA}_{it} + \beta_7 \text{IODRISK}_{it} + \beta_8 \text{MARKET\_ADJ\_RETURN}_{it} \\
+ \beta_9 \text{DEBT\_ASSET}_{it} + \beta_{10} \text{DIV\_YLD}_{it} + \beta_{11} \text{PE}_{it} + \beta_{12} \text{ROE}_{it} + \beta_{13} \text{PRICE\_LOG}_{it} + \varepsilon_{it}
\]

\[
\text{INST\_OWN}_{it} = \beta_0 + \beta_1 \text{AUDIT}_{it} + \beta_2 \text{Time\_Dummy}_{it} + \beta_3 (\text{AUDIT}_{it} \cdot \text{Time\_Dummy}_{it}) + \beta_4 \text{LOG\_MKT\_CAP}_{it} \\
+ \beta_5 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_6 \text{BETA}_{it} + \beta_7 \text{IODRISK}_{it} + \beta_8 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_9 \text{DEBT\_ASSET}_{it} \\
+ \beta_{10} \text{DIV\_YLD}_{it} + \beta_{11} \text{PE}_{it} + \beta_{12} \text{ROE}_{it} + \beta_{13} \text{PRICE\_LOG}_{it} + \beta_{14} \text{FIXED\_EFFECT}_{it} + \varepsilon_{it}
\]

Where \( \text{INST\_OWN} \), is the percentage ownership by institutional investors. The regression is run with each of these ownership levels, is the Compensation score developed by Risk Metrics and have a range between 1 to 5, Time\_Dummy, is a dummy variable for before and after the financial crisis where 1 represent the period before the crisis (2005-2006) and 0 is after the crisis (2007-2010); Interactive\_Dummy\_Audit is Time\_Dummy \times \text{AUDIT}; \text{AVERAGE\_TRADE\_VOLUME} \_t ; average number of shares traded over the month divided by the shares in issue \times 100, \text{BETA} \_t is the market model beta calculated from daily returns measure over a year, \text{IDORISK} \_t standard deviation of the market model residuals of daily returns measured over a year prior; \text{MARKET\_ADJ\_RETURN} \_t returns on share for 1 year less risk free rate divided by beta for share; \text{DEBT\_ASSET} \_t \_t total debt including long and short term divided by total assets \times 100; \text{DIV\_YLD} \_t dividend per share \_t / last price; \text{ROE} \_t \_t net income available for common shareholders divided by average common equity for that year \times 100; PRICE\_LOG\_t is the LOG of last share price at \_t \_t ; *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics. The numbers in the parentheses are the t statistics.

<table>
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<tr>
<th>Variables</th>
<th>Pooled OLS Regression</th>
<th>Fixed Firm Effect</th>
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<tbody>
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<td>COMP</td>
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<td>Time_Dummy</td>
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<td>-5.428 *</td>
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<td>(-0.944)</td>
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<td>Interactive_Dummy_Comp</td>
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<tr>
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<td>(0.145)</td>
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</tr>
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<td>-10.970 ***</td>
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<td>(-10.782)</td>
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<td>AVERAGE_TRADE_VOLUME</td>
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<td>(3.263)</td>
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<td>BETA</td>
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<td>1.001</td>
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<td>(1.549)</td>
<td>(0.682)</td>
</tr>
<tr>
<td>IODRISK</td>
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<td>(-1.230)</td>
<td>(-0.641)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.018</td>
<td>-0.029 ***</td>
</tr>
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<td></td>
<td>(-1.197)</td>
<td>(-2.653)</td>
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<tr>
<td>DEBT_ASSET</td>
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</tr>
<tr>
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<td>(1.636)</td>
<td>(-0.941)</td>
</tr>
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<td>DIV_YLD</td>
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</tr>
<tr>
<td></td>
<td>(1.358)</td>
<td>(0.216)</td>
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<td>PE</td>
<td>0.000</td>
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</tr>
<tr>
<td></td>
<td>(0.222)</td>
<td>(0.057)</td>
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<td>ROE</td>
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<td>(-1.831)</td>
<td>(0.426)</td>
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<td>PRICE_LOG</td>
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<td>(-1.083)</td>
<td>(2.376)</td>
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<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.170</td>
<td>0.648</td>
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<tr>
<td>Observations</td>
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<td>7.050</td>
</tr>
<tr>
<td>VIF</td>
<td>1.204</td>
<td>2.844</td>
</tr>
</tbody>
</table>

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7.3.6 Summary
These results indicate that institutional investors do not tilt their portfolio towards firms that have good compensations scores, and all three hypotheses have been rejected (H2a, H2b, H2c). A discussion of these results in comparison to the other sub-score is in section 7.5 in this chapter.

7.4 The Board Results
This section presents the findings of the relation between institutional share ownership and the Board Score (BOARD), where the board score is one of the three sub-scores analysed in this research. The score is developed by RiskMetrics and each firm is given a grade based on a number of factors (see Appendix A for further detail), the grade range is from 1 to 5, where 5 is good and 1 is bad.

The results present new evidence for the UK stock market on how institutional ownership for FTSE All-share from 2006 to 2010 is associated with how good the corporate governance is of the board directors.

The results section begins with a discussion of the aims of the research and then follows with the results.

7.4.1 Board - Aims
The aims of the study are to assess the relationship between institutional ownership and the board score and compare the association between the audit and compensations cores. In this section the following hypotheses are tested:

H3a – There is a positive association between the total institutional ownership and the board score.

H3b -Where block-ownership is greater there will be less association between institutional ownership and the board score.

H3c There will be increasing in the positive association between total institutional ownership and board score from before and after the financial crisis of 2007-8.
7.4.2 Board - Descriptive Statistics
This section presents the descriptive statistics for the board score, as seen in Table 24. The mean score is 4.340 for the entire study period, however, it has changed with a slight increase from the pre-crisis level of 4.331 to post-crisis 4.397, suggesting that UK firms have improved the board governance. Although, there has been an increase in variance for the board score, this indicates that despite board structure improving for the majority of firms, this has not been a wholesale improvement, as if it is the standard deviation would remain static.

Where firms have institutional shareholders that have larger stakes in the firm, the board score tends to be worse. This shown by when block-ownership is between 3-5% the mean board score is 4.360 compared to block-ownership of 20%≥ the mean is 4.140.

**Table 24 Descriptive Statistics for Board Score**

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOARD</td>
<td>2.000</td>
<td>5.000</td>
<td>4.340</td>
<td>0.714</td>
</tr>
<tr>
<td>Pre-Crisis</td>
<td>2.000</td>
<td>5.000</td>
<td>4.331</td>
<td>0.723</td>
</tr>
<tr>
<td>Crisis</td>
<td>2.000</td>
<td>5.000</td>
<td>4.275</td>
<td>0.746</td>
</tr>
<tr>
<td>Post-Crisis</td>
<td>1.000</td>
<td>5.000</td>
<td>4.397</td>
<td>0.787</td>
</tr>
<tr>
<td>3-5% Ownership</td>
<td>2.000</td>
<td>5.000</td>
<td>4.360</td>
<td>0.712</td>
</tr>
<tr>
<td>5-10% Ownership</td>
<td>2.000</td>
<td>5.000</td>
<td>4.350</td>
<td>0.705</td>
</tr>
<tr>
<td>10-20% Ownership</td>
<td>2.000</td>
<td>5.000</td>
<td>4.330</td>
<td>0.713</td>
</tr>
<tr>
<td>20%≥ Ownership</td>
<td>1.000</td>
<td>5.000</td>
<td>4.140</td>
<td>0.781</td>
</tr>
</tbody>
</table>
Table 25 Descriptive Statistics for the Change in Board Score and Institutional Ownership

The firm year data is ranked by Board score into groups based on frequency, where 1 is lowest group score (Board score between 1-3) and 3 is the highest group score (Board score of 5). The 1st column of the table represents the mean total institutional ownership within each quantile. Column 2 represents the mean total institutional ownership for the pre-crisis period (2006-07). Column 3 represents the mean total institutional ownership for the crisis period (2008). Column 4 represents the mean total institutional ownership for the post crisis period (2009-10). Column 5 represents the mean institutional ownership for owners with between 3-5% block-holdings for the whole period. Column 6 represents the mean institutional ownership for owners with between 5-10% block-holdings for the whole period. Column 7 represents the mean institutional ownership for owners with between 10%-20% block-holdings for the whole period. Column 8 represents the mean institutional ownership for owners with 20% and above block-holdings for the whole period. The T test is performed on value of institutional ownership for firms that belonged to the highest Board score ranking is statistically different from the corresponding value for firms that belong to the lowest Board score.

<table>
<thead>
<tr>
<th>Board Score ranking</th>
<th>Total Institutional Ownership</th>
<th>Pre Crisis</th>
<th>Crisis</th>
<th>Post Crisis</th>
<th>3-5% Ownership</th>
<th>5-10% Ownership</th>
<th>10-20% Ownership</th>
<th>20% Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (bottom)</td>
<td>33.40</td>
<td>34.60</td>
<td>35.76</td>
<td>30.15</td>
<td>11.52</td>
<td>15.10</td>
<td>18.11</td>
<td>26.26</td>
</tr>
<tr>
<td>2 (middle)</td>
<td>34.43</td>
<td>33.19</td>
<td>35.94</td>
<td>35.08</td>
<td>12.73</td>
<td>15.69</td>
<td>18.32</td>
<td>30.51</td>
</tr>
<tr>
<td>3 (highest)</td>
<td>33.43</td>
<td>32.13</td>
<td>36.72</td>
<td>33.33</td>
<td>12.80</td>
<td>15.03</td>
<td>17.39</td>
<td>28.09</td>
</tr>
</tbody>
</table>

Mean T Test

<table>
<thead>
<tr>
<th>T statistic</th>
<th>F statistic</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.02</td>
<td>0.74</td>
<td>0.39</td>
</tr>
<tr>
<td>1.18</td>
<td>0.30</td>
<td>0.59</td>
</tr>
<tr>
<td>-0.31</td>
<td>0.46</td>
<td>0.50</td>
</tr>
<tr>
<td>-1.46</td>
<td>2.78</td>
<td>0.10</td>
</tr>
<tr>
<td>-2.40</td>
<td>0.43</td>
<td>0.51</td>
</tr>
<tr>
<td>0.09</td>
<td>2.27</td>
<td>0.13</td>
</tr>
<tr>
<td>0.79</td>
<td>0.58</td>
<td>0.45</td>
</tr>
<tr>
<td>-0.90</td>
<td>0.03</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Table 25 presents the mean institutional ownership for each ranked group for the board score. The results show that the mean total institutional ownership of firms belonging to the lowest ranking is 33.40, whereas the highest ranking is 33.43. However, after running a t-test for the whole period for the firms belonging to the lowest and highest ranked group it is not significant with a p-value of 0.39, thus suggesting that from the initial analysis there is no association between institutional ownership and the board score. The only association that is significant at 10% is the post-crisis period, as the firms with the lowest ranking board score had a mean institutional ownership of 30.15 compared to the best audit score group had 33.33 mean ownership.

The following section presents the findings of the regression analysis for the institutional shareholdings against the board score.
7.4.3 Total Ownership
The results in from Table 26 from both the OLS Pooled regression and the Hays and Cai method that controls for heteroscedasticity that there is a positive association between institutional ownership and the Board Score. This is to say that when institutional ownership increases, so does the board score. This supports the Hypothesis 3a that there is a positive association between the total institutional ownership (INST_OWN) and the board score (BOARD).

According to agency theory, the board of directors are the agents and the shareholders are the principal (Jensen and Meckling, 1976). In this simple relationship the shareholders are the bearers of the risk, however, institutional owners are not; they are merely agents acting for the investors who are baring the risk. With the UK stock markets share ownership landscape of the modern world there has been greater separation as around 10%-12% of quoted UK shares are only by UK individuals in 2010, 2012, 2016 (ONS, 2016), thus the simple agent-principal relationship has become more complex. With this, it places greater emphasis upon the institutional investor to exercise their fiduciary duty to their principals, making it of increased importance to monitor the behaviour of the board of directors. It appears from this research that institutional owners are doing this, as there is a positive association between the board score.
## Table 26 Regression Results for Total Ownership and Board Score

The results of this table show the results for the following regression model:

\[
\text{INST}_i,t = \alpha + \beta_1 \text{BOARD}_i,t + \beta_2 \text{LOG}_i \text{MKT}_i,t + \beta_3 \text{AVERAGE}_i \text{TRADE}_i,t + \beta_4 \text{BETA}_i,t + \beta_5 \text{IODRISK}_i,t + \beta_6 \text{MARKET}_i \text{ADJ}_i,t + \beta_7 \text{DEBT}_i,t + \beta_8 \text{DIV}_i,t + \beta_9 \text{ROE}_i,t + \beta_{10} \text{P}_i,t + \epsilon_i,t
\]

Where \( \text{INST}_i,t \) is that ratio of the number of shares held by institutional investors to the total number of shares outstanding, \( \text{BOARD}_i,t \) is the board score developed by Risk Metrics and have a range between 1 to 5, \( \text{AVERAGE}_i \text{TRADE}_i,t \) average number of shares traded over the month divided by the shares in issue x 100, \( \text{BETA}_i,t \) is the market model beta calculated from daily returns measure over a year, \( \text{IODRISK}_i,t \) standard deviation of the market model residuals of daily returns measured over a year prior; \( \text{MARKET}_i \text{ADJ}_i,t \) returns on share for 1 year less risk free rate divided by beta for share; \( \text{DEBT}_i,t \) total debt including long and short term divided by total assets x 100; \( \text{DIV}_i,t \text{ dividend per share/ last price}; \text{ROE}_i,t \text{ net income available for common shareholders divided by average common equity for that year x 100}; \text{P}_i,t \text{ Price of stock dividend by trailing EPS}; \text{PRICE}_i,t \text{ is the LOG of last share price at t. * **, and *** indicated significance at 10%, 5% and 1% levels, respectively.}

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.524</td>
<td>2.430</td>
</tr>
<tr>
<td></td>
<td>(3.862)</td>
<td>(3.742)</td>
</tr>
<tr>
<td></td>
<td>-11.076</td>
<td>-10.626</td>
</tr>
<tr>
<td></td>
<td>(-10.721)</td>
<td>(-12.017)</td>
</tr>
<tr>
<td></td>
<td>2.865</td>
<td>2.3321</td>
</tr>
<tr>
<td></td>
<td>(1.746)</td>
<td>(1.588)</td>
</tr>
<tr>
<td></td>
<td>2.000</td>
<td>2.1617</td>
</tr>
<tr>
<td></td>
<td>(1.369)</td>
<td>(1.397)</td>
</tr>
<tr>
<td></td>
<td>-25.728</td>
<td>-6.4205</td>
</tr>
<tr>
<td></td>
<td>(-0.440)</td>
<td>(-0.152)</td>
</tr>
<tr>
<td></td>
<td>-0.032</td>
<td>-0.0622</td>
</tr>
<tr>
<td></td>
<td>(-0.269)</td>
<td>(-0.309)</td>
</tr>
<tr>
<td></td>
<td>-0.025</td>
<td>-0.0239</td>
</tr>
<tr>
<td></td>
<td>(-1.084)</td>
<td>(-1.005)</td>
</tr>
<tr>
<td></td>
<td>-4.420</td>
<td>-4.3044</td>
</tr>
<tr>
<td></td>
<td>(-2.080)</td>
<td>(-1.298)</td>
</tr>
<tr>
<td></td>
<td>0.003</td>
<td>0.0311</td>
</tr>
<tr>
<td></td>
<td>(0.744)</td>
<td>(0.651)</td>
</tr>
<tr>
<td></td>
<td>-1.189</td>
<td>-1.0176</td>
</tr>
<tr>
<td></td>
<td>(-0.934)</td>
<td>(-0.721)</td>
</tr>
<tr>
<td></td>
<td>-0.069</td>
<td>-0.1289</td>
</tr>
<tr>
<td></td>
<td>(-0.051)</td>
<td>(-0.090)</td>
</tr>
</tbody>
</table>

Year Dummy Included  Yes
Industry Dummies Yes
Adj R2 0.179
Observations 1465
F Statistic 16.226
VIF 1.218
7.4.3.1 Robustness Checks

Additional tests are carried out on the data to assess the endogeneity issues of the data. The fixed firm effect tests showed a correlation coefficient of 9.920***, this is consistent with the findings of the simple OLS regression in Table 27. The results from the 2SL show a correlation coefficient of 2.908***.

**TABLE 27 ROBUSTNESS CHECKS FOR TOTAL OWNERSHIP AND THE BOARD SCORE**

<table>
<thead>
<tr>
<th>Variables</th>
<th>2SL (1st Stage Regression)</th>
<th>2SL (2nd Stage Regression)</th>
<th>Fixed Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.908</td>
<td>9.920</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4.145)</td>
<td>(2.812)</td>
<td></td>
</tr>
<tr>
<td>CEO_TENURE</td>
<td>-0.09</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>0.294</td>
<td>***</td>
<td>-0.655</td>
</tr>
<tr>
<td></td>
<td>(6.764)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>0.119</td>
<td>*</td>
<td>0.303</td>
</tr>
<tr>
<td></td>
<td>(1.670)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BETA</td>
<td>0.050</td>
<td></td>
<td>38.698</td>
</tr>
<tr>
<td></td>
<td>(0.792)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IODRISK</td>
<td>3.683</td>
<td></td>
<td>-0.29</td>
</tr>
<tr>
<td></td>
<td>(0.792)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARKET_ADI_RETURN</td>
<td>-0.001</td>
<td></td>
<td>-0.30</td>
</tr>
<tr>
<td></td>
<td>(0.184)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.005</td>
<td>***</td>
<td>0.077</td>
</tr>
<tr>
<td></td>
<td>(4.595)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>0.030</td>
<td>-0.686</td>
<td>0.277</td>
</tr>
<tr>
<td></td>
<td>(0.731)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td></td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.106)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>0.084</td>
<td>-5.92</td>
<td>5.916</td>
</tr>
<tr>
<td></td>
<td>(1.474)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>-0.082</td>
<td></td>
<td>-19.792</td>
</tr>
<tr>
<td></td>
<td>(-1.405)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where INST_OWN(t) is the ratio of the number of shares held by institutional investors to the total number of shares outstanding, BOARD is the board score developed by Risk Metrics and have a range between 1 to 5, AVERAGE_TRADE_VOLUME is the average number of shares traded over the month divided by the shares in issue x 100, BETA(t) is the market model beta calculated from daily returns measure over a year, IDORISK is standard deviation of the market model residuals of daily returns measured over a year prior; MARKET_ADI_RETURN(t) returns on share for 20 years risk free rate divided by beta for share; DEBT_ASSET(t) total debt including long and short term divided by total assets x 100; DVD_YLD(t) dividend per share/ last price; ROE(t) is net income available for common shareholders divided by average common equity for that year x 100; P_B(t) Price of stock dividend by trailing EPS; PRICE_LOG(t) is the LOG of last share price at t; *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

**Year Dummy Included**

<table>
<thead>
<tr>
<th>Industry Dummies</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted R2</td>
<td>.119</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>1266</td>
<td></td>
</tr>
<tr>
<td>F Statistic</td>
<td>10.189</td>
<td>23.470</td>
</tr>
<tr>
<td>VIF</td>
<td>1.135</td>
<td>1.206</td>
</tr>
</tbody>
</table>

191
The change in variables shows in Table 28 a positive significant relation between institutional ownership in panel 1 the correlation coefficient is 1.493* and for the lagged change in board score is 1.647**. This provides evidence to support that institutional investors do tilt their portfolio in favour of firms with a good board score.

### Table 28 Regression results when the Change in Variable is used against the Board Score

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Pooled OLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔBOARD</td>
<td>1.493</td>
<td>0.027</td>
</tr>
<tr>
<td></td>
<td>(1.780)</td>
<td>(0.066)</td>
</tr>
<tr>
<td>LAGΔBOARD</td>
<td>1.647</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>(2.191)</td>
<td></td>
</tr>
<tr>
<td>ΔLOG_MKT_CAP</td>
<td>-0.918</td>
<td>-0.890</td>
</tr>
<tr>
<td></td>
<td>(-0.674)</td>
<td>(-0.660)</td>
</tr>
<tr>
<td>ΔAVERAGE_TRADE_VOLUME</td>
<td>0.780</td>
<td>-15.699</td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td>(-0.129)</td>
</tr>
<tr>
<td>ΔBETA</td>
<td>-0.550</td>
<td>-1.366</td>
</tr>
<tr>
<td></td>
<td>(-0.314)</td>
<td>(-0.985)</td>
</tr>
<tr>
<td>Δ_IORDRISK</td>
<td>-4.275</td>
<td>10.908</td>
</tr>
<tr>
<td></td>
<td>(-0.143)</td>
<td>(0.394)</td>
</tr>
<tr>
<td>ΔMARKET_ADJ_RETURN</td>
<td>-0.035</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>(-2.971)</td>
<td>(1.849)</td>
</tr>
<tr>
<td>ΔDEBT_ASSET</td>
<td>0.120</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>(2.139)</td>
<td>(1.008)</td>
</tr>
<tr>
<td>ΔDIV_YLD</td>
<td>0.419</td>
<td>0.265</td>
</tr>
<tr>
<td></td>
<td>(0.167)</td>
<td>(1.035)</td>
</tr>
<tr>
<td>ΔPE</td>
<td>0.001</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>(0.294)</td>
<td>(-0.157)</td>
</tr>
<tr>
<td>ΔROE</td>
<td>0.038</td>
<td>.053</td>
</tr>
<tr>
<td></td>
<td>(0.364)</td>
<td>(0.535)</td>
</tr>
<tr>
<td>ΔPRICE_LOG</td>
<td>-0.292</td>
<td>-0.263</td>
</tr>
<tr>
<td></td>
<td>(-0.209)</td>
<td>(-0.211)</td>
</tr>
<tr>
<td>Year Dummy Included</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummies</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.030</td>
<td>0.016</td>
</tr>
<tr>
<td>Observations</td>
<td>737</td>
<td>1088</td>
</tr>
<tr>
<td>F Statistic</td>
<td>2.156</td>
<td>1.784</td>
</tr>
<tr>
<td>VIF</td>
<td>1.031</td>
<td>1.016</td>
</tr>
</tbody>
</table>

Where ΔINST_OWN,t is the change in the ratio of the number of shares held by institutional investors to the total number of shares outstanding, BOARD is the compensation score developed by Risk Metrics and have a range between 1 to 5, ΔAVERAGE_TRADE_VOLUME,t is the change in average number of shares traded over the month divided by the shares in issue x 100 from t to t+1, ΔBETA,t is the change in market beta calculated from daily returns measure over a year from t to t+1, ΔIORDRISK,t is the change in standard deviation of the market model residuals of daily returns measured over a year prior from t to t; ΔMARKET_ADJ_RETURN,t the change in returns on share for 1 year less risk free rate divided by beta for share from t to t+1; ΔDEBT_ASSET,t is the change in total debt including long and short term divided by total assets x 100 from t to t+1; ΔDIV_YLD,t is the change in dividend per share/ last price from t to t+1; ΔROE,t is the change in net income available for common shareholders divided by average common equity for that year x 100 from t to t+1; ΔPRICE_E,t is change in Price of stock dividend by trailing EPS from t to t+1; ΔPRICE_LOG,t is the change in LOG of last share price at t from t to t+1. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.
The results shown in Table 28 show that there is a positive significant relationship between the change in board score (ΔBOARD) and the lagged change in board score (LAGΔBOARD). Suggests that institutions may be slow to review the board characteristics. It could possibly be that when changes are made some institutions do not instantly change their portfolios, but they reflect the change later. For example, if a firm combines the role of CEO and Chair in Year 1, some investors may reduce their holdings in that firm in year 1, however, some reflect and reduce their holdings in year 2.

This study is important because the most influential shareholder group in the UK are institutional shareholders and the board is the backbone of a firm and how that is structured and what they do should govern the direction of the firm. The founding father of Corporate Governance Sir Adrian Cadbury wrote:

“The country’s economy depends on the drive and efficiency of its companies. Thus the effectiveness with which their boards discharge their responsibilities determines Britain’s competitive position. They must be free to drive their companies forward, but exercise that freedom within a framework of effective accountability. This is the essence of any system of good corporate governance” p11 Cadbury Code, 1992

This quote emphasises the importance of the board of directors in directing the firm and how they should be accountable for their actions. These results demonstrate that institutional shareholders do take these principles seriously and do incorporate the boards’ corporate governance into their investment choices.

The results found are consistent with previous research into share ownership and the board structure (Hawas and Tse (2016); Chung and Zhang, (2011)). However, there are key differences with both studies Hawas and Tse (2016) is a UK based study; however, they used total major shareholdings, whereas this study only used institutional shareholders. Hawas and Tse (2016) would have included directors, individuals and corporations, which may have a very different viewpoint than institutions. Directors have a very different perspective from institutional shareholders in the company; they would clearly control the corporate governance of the firm thus corporate governance would probably be of little importance to them. Individuals may have a similar viewpoint to institutions; however, they are the principal in the agency relationship, unlike the institutions, which this study has examined.
Corporate ownership is quite different to institutional ownership and may be obtained to gain a greater stake in a firm to takeover, so the board strength may actually be considered a weakness. Hawas and Tse (2016) did not use the RiskMetrics measure of the board. The RiskMetrics is a global index that institutional investors use unlike the ratings applied by Hawas and Tse (2016). Chung and Zhang (2011) use the ISS (RiskMetrics) as their measure for the board, thus it is quite similar to this research. The key difference with this study is that it is based on US data and there are differences in the market. Therefore, these results provide new evidence on the UK institutional investor’s preferences.

The Kay Review (2012) states that fund managers are not incentivised to engage with investment companies due to cost benefit considerations however these results indicate that institutional investors are interested in the board. However, this study does examine share ownership above the 3% level and this would probably exclude day traders as they would be unlikely to build up 3% shareholders on day trading, and this group and other short-term investors are cited as an issue in the Kay Review (2012).

Thus hypothesis H3a – There is a positive association between the total institutional ownership and the board score, is accepted and the null is rejected.

7.4.4 Block-Ownership
In this section, the impact of different levels of institutional block-ownership on the Board Score is discussed.

The results are shown in Table 29, show that there is a positive association between share ownership at all levels and the board score; however, it is only the 3% to 5% level with a correlation coefficient of 0.427* for the OLS Pooled regression and 0.4533* for the Hayes and Cai method, that is significant. In fact, the P values rise from the 10% level for ownership at 3 to 5% to a P-value of 0.1722 for 5% to 10% and 0.2367 for 10% to 20% for the Hayes and Cai method, showing that the significance does weaken when ownership rises.
## Table 29 Results for Block-Ownership and Board Score

The results of this table show the results for the following regression model:

\[ \text{BLOCK}_{it} = \beta_0 + \beta_1 \text{BOARD}_{SCORE}_{it} + \beta_2 \text{LOG}_\text{MKT_CAP}_{it} + \beta_3 \text{AVG}_\text{TRADE}_\text{VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IORISK}_{it} + \beta_6 \text{MARKET}_\text{ADJ}_\text{RETURN}_{it} + \beta_7 \text{DEBT}_\text{ASSET}_{it} + \beta_8 \text{DIV}_\text{YLD}_{it} + \beta_9 \text{PE}_{it} + \epsilon_{it} \]

Where Block is the block ownership at each of the levels, 3-5%, 5-10%, 10-20% and 20% and above. The regression is run with each of these ownership levels, BOARD is the Board score developed by Risk Metrics and have a range between 1 to 5, AVERAGE TRADE_VOLUME is the average number of shares traded over the month divided by the shares in issue x 100, BETA is the market model beta calculated from daily returns measure over a year, IDORISK is the standard deviation of the market model residuals of daily returns measured over a year prior; MARKET_ADJ_RETURN is the returns measure over a year less risk free rate divided by beta for share; DEBT_ASSET is the total debt including long and short term divided by total assets x 100; DIV YLD is the dividend per share/last price; ROE is net income available for common shareholders divided by average common equity for that year x 100; P_E is the price of stock dividend by trailing EPS; PRICE_LOG is the LOG of last share price at t.

### Table 29

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai 3% to 5%</th>
<th>Hayes &amp; Cai 5% to 10%</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai 10% to 20%</th>
<th>Hayes &amp; Cai 20% and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOARd</td>
<td>0.427</td>
<td>0.453</td>
<td>0.562</td>
<td>0.532</td>
<td>0.755</td>
<td>0.5916</td>
</tr>
<tr>
<td>(1.572)</td>
<td>*(1.661)</td>
<td>*(1.403)</td>
<td>*(1.366)</td>
<td>*(1.494)</td>
<td>*(1.185)</td>
<td>*(1.226)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-2.524 ***</td>
<td>-2.1441 ***</td>
<td>-4.430 ***</td>
<td>-3.694 ***</td>
<td>-0.566 ***</td>
<td>-1.2022</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>2.023 **</td>
<td>0.8319</td>
<td>1.518</td>
<td>-0.2759</td>
<td>-0.319</td>
<td>1.6545</td>
</tr>
<tr>
<td>*(3.016)</td>
<td>*(1.339)</td>
<td>*(1.588)</td>
<td>*(0.324)</td>
<td>*(0.260)</td>
<td>*(0.090)</td>
<td>*(2.084)</td>
</tr>
<tr>
<td>BETA</td>
<td>2.030 ***</td>
<td>1.9038 ***</td>
<td>-0.133</td>
<td>-0.2589</td>
<td>-1.825</td>
<td>-1.4226</td>
</tr>
<tr>
<td>*(3.351)</td>
<td>*(3.128)</td>
<td>*(0.146)</td>
<td>*(0.278)</td>
<td>*(1.578)</td>
<td>*(1.209)</td>
<td>*(1.367)</td>
</tr>
<tr>
<td>IORISK</td>
<td>-36.873</td>
<td>16.0748</td>
<td>-54.672</td>
<td>22.4699</td>
<td>32.536</td>
<td>-61.5917 **</td>
</tr>
<tr>
<td>*(1.356)</td>
<td>*(0.907)</td>
<td>*(1.570)</td>
<td>*(0.818)</td>
<td>*(0.764)</td>
<td>*(2.152)</td>
<td>*(0.534)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.014</td>
<td>-0.0383</td>
<td>0.133</td>
<td>0.0903</td>
<td>-0.032</td>
<td>-0.0156</td>
</tr>
<tr>
<td>*(0.274)</td>
<td>*(0.636)</td>
<td>*(1.841)</td>
<td>*(0.861)</td>
<td>*(0.442)</td>
<td>*(0.253)</td>
<td>*(0.012)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.007</td>
<td>0.0083</td>
<td>0.002</td>
<td>0.0067</td>
<td>-0.027</td>
<td>-0.0251</td>
</tr>
<tr>
<td>*(0.721)</td>
<td>*(0.837)</td>
<td>*(0.173)</td>
<td>*(0.446)</td>
<td>*(1.568)</td>
<td>*(0.000)</td>
<td>*(0.433)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-1.746 **</td>
<td>-1.7385 **</td>
<td>-0.610</td>
<td>-0.5301</td>
<td>-0.417</td>
<td>-0.4334</td>
</tr>
<tr>
<td>*(2.041)</td>
<td>*(2.527)</td>
<td>*(0.508)</td>
<td>*(0.228)</td>
<td>*(0.433)</td>
<td>*(0.075)</td>
<td>*(1.149)</td>
</tr>
<tr>
<td>PE</td>
<td>0.003</td>
<td>0.0028</td>
<td>0.0034</td>
<td>0.0037</td>
<td>0.0039</td>
<td>0.0082</td>
</tr>
<tr>
<td>*(1.417)</td>
<td>*(1.636)</td>
<td>*(1.442)</td>
<td>*(1.493)</td>
<td>*(0.929)</td>
<td>*(1.073)</td>
<td>*(2.834)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.674</td>
<td>0.7671</td>
<td>-1.085</td>
<td>-0.8928</td>
<td>0.904</td>
<td>0.8963</td>
</tr>
<tr>
<td>*(1.263)</td>
<td>*(1.465)</td>
<td>*(1.419)</td>
<td>*(0.908)</td>
<td>*(0.971)</td>
<td>*(1.157)</td>
<td>*(1.244)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>1.250 **</td>
<td>1.3948 ***</td>
<td>0.780</td>
<td>0.9291</td>
<td>-4.337 ***</td>
<td>-4.6105 ***</td>
</tr>
<tr>
<td>*(2.262)</td>
<td>*(2.694)</td>
<td>*(0.935)</td>
<td>*(1.016)</td>
<td>*(3.925)</td>
<td>*(4.037)</td>
<td>*(2.478) **</td>
</tr>
</tbody>
</table>

### Year Dummy

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Industry Dummy

<table>
<thead>
<tr>
<th>Yes</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Adjusted R2

<table>
<thead>
<tr>
<th>0.069</th>
<th>0.054</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.108</td>
<td>0.0775</td>
</tr>
<tr>
<td>0.101</td>
<td>0.0845</td>
</tr>
<tr>
<td>1.3948</td>
<td>0.48</td>
</tr>
</tbody>
</table>

### Observations

<table>
<thead>
<tr>
<th>1336</th>
<th>1336</th>
</tr>
</thead>
<tbody>
<tr>
<td>1160</td>
<td>1160</td>
</tr>
<tr>
<td>647</td>
<td>647</td>
</tr>
<tr>
<td>99</td>
<td></td>
</tr>
</tbody>
</table>

### F statistics

<table>
<thead>
<tr>
<th>4.616</th>
<th>4.895</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.560</td>
<td>7.093</td>
</tr>
<tr>
<td>3.360</td>
<td>4.651</td>
</tr>
<tr>
<td>3.680</td>
<td></td>
</tr>
</tbody>
</table>

### VIP

<table>
<thead>
<tr>
<th>1.056</th>
<th>1.057</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.101</td>
<td>1.084</td>
</tr>
<tr>
<td>1.076</td>
<td>1.092</td>
</tr>
<tr>
<td>1.541</td>
<td></td>
</tr>
</tbody>
</table>
There are also some other interesting results from the Block-Ownership as it is noted that there is a change in the association between the log of the share price and ownership, with the 3% to 5% showing a significant positive association and then when ownership is 10% and above there is a negative significant relation. This shows that when ownership levels are high, the share price tends to be lower and when ownership levels are lower, (3% to 5%) the share price is higher. It could be that when investment levels are higher the institutions are targeting value stocks, whereas with less ownership the institutions are targeting ‘safer’ stocks, as from the results we know that the board score is positive associated with ownership, but so is Beta and these results are highly significant and positive. Suggesting that institutional share ownership at 3 to 5% level the institutions are targeting low risk (Beta), high value shares (positive association with price log) and good board structure.
Table 30 Logit regression for block holders board scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>Logit Regression 3% to 5%</th>
<th>Logit Regression 5% to 10%</th>
<th>Logit Regression 10% to 20%</th>
<th>Logit Regression 20% and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOARD</td>
<td>0.038 ***</td>
<td>0.040 ***</td>
<td>0.045 **</td>
<td>-0.016 *</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.036 **</td>
<td>-0.150 ***</td>
<td>-0.152 ***</td>
<td>-0.041 ***</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>0.003</td>
<td>0.092 ***</td>
<td>0.031</td>
<td>-0.043 **</td>
</tr>
<tr>
<td>BETA</td>
<td>0.063 ***</td>
<td>0.083 ***</td>
<td>-0.041</td>
<td>0.017</td>
</tr>
<tr>
<td>IODRISK</td>
<td>-0.970</td>
<td>-1.400</td>
<td>1.825</td>
<td>0.662</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-1.170</td>
<td>-1.266</td>
<td>1.341</td>
<td>0.926</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.000</td>
<td>-0.001 **</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>0.001</td>
<td>0.004</td>
<td>-0.004</td>
<td>-0.003</td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>0.000 **</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>ROE</td>
<td>0.000</td>
<td>-0.043</td>
<td>-2.319</td>
<td>-1.102</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.031</td>
<td>0.005</td>
<td>-0.054</td>
<td>0.007</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.031</td>
<td>0.096</td>
<td>0.091</td>
<td>0.03</td>
</tr>
<tr>
<td>Observations</td>
<td>1465</td>
<td>1465</td>
<td>1465</td>
<td>1465</td>
</tr>
<tr>
<td>F Statistic</td>
<td>3.330</td>
<td>8.745</td>
<td>0.045 **</td>
<td>2.877</td>
</tr>
<tr>
<td>VIF</td>
<td>1.032</td>
<td>1.106</td>
<td>(2.451)</td>
<td>1.026</td>
</tr>
</tbody>
</table>

As the relationship is not strictly linear a logit regression is run. As seen in Table 30 the results are consistent with the OLS regression for both 3-5% with a positive correlation coefficient of 0.038*** and 5-10% with 0.040***, however with the logit regression there is still a positive significant association for the 10-20% level of 0.045**, and a negative association for the 20% and above with a coefficient of -0.016*. Similar to results in the previous sections there is clearly a propensity for institutions with smaller stakes to be more prudent in their investments.
7.4.4.1 Robustness checks

In order to increase the reliability of the results a fixed firm effect is used, as can be seen from Table 31.

**Table 31 Results for block ownership with the board score**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fixed Effect Logit 3% to 5%</th>
<th>Fixed Effect Logit 5% to 10%</th>
<th>Fixed Effect Logit 10% to 20%</th>
<th>Fixed Effect Logit 20% and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOARD</td>
<td>0.015*</td>
<td>0.040*</td>
<td>-0.023</td>
<td>-0.023*</td>
</tr>
<tr>
<td>(1.614)</td>
<td>(1.847)</td>
<td>(-0.946)</td>
<td>(-1.831)</td>
<td></td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.113</td>
<td>0.014</td>
<td>-0.166</td>
<td>-0.151**</td>
</tr>
<tr>
<td>(-1.476)</td>
<td>(0.127)</td>
<td>(-1.344)</td>
<td>(-2.384)</td>
<td></td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>0.029</td>
<td>0.086**</td>
<td>0.012</td>
<td>-0.019</td>
</tr>
<tr>
<td>(1.121)</td>
<td>(2.307)</td>
<td>(0.275)</td>
<td>(-0.873)</td>
<td></td>
</tr>
<tr>
<td>BETA</td>
<td>0.066**</td>
<td>-0.025</td>
<td>-0.041</td>
<td>0.062**</td>
</tr>
<tr>
<td>(2.006)</td>
<td>(-0.526)</td>
<td>(-0.777)</td>
<td>(2.277)</td>
<td></td>
</tr>
<tr>
<td>IDORISK</td>
<td>-2.908***</td>
<td>-1.528</td>
<td>0.409</td>
<td>0.114</td>
</tr>
<tr>
<td>(-3.292)</td>
<td>(-1.205)</td>
<td>(0.287)</td>
<td>(0.156)</td>
<td></td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.000</td>
<td>0.001***</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>(-0.097)</td>
<td>(-2.634)</td>
<td>(0.069)</td>
<td>(0.345)</td>
<td></td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.000</td>
<td>0.000</td>
<td>0.001</td>
<td>-0.001</td>
</tr>
<tr>
<td>(0.415)</td>
<td>(0.273)</td>
<td>(1.150)</td>
<td>(-1.625)</td>
<td></td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-0.001</td>
<td>-0.001</td>
<td>0.000</td>
<td>-0.002</td>
</tr>
<tr>
<td>(-0.201)</td>
<td>(-0.074)</td>
<td>(-0.017)</td>
<td>(-0.422)</td>
<td></td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>0.000**</td>
<td>0.000</td>
<td>0.000***</td>
</tr>
<tr>
<td>(-0.830)</td>
<td>(-2.398)</td>
<td>(1.549)</td>
<td>(-3.715)</td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>0.001</td>
<td>0.005</td>
<td>0.002</td>
<td>-0.002</td>
</tr>
<tr>
<td>(0.276)</td>
<td>(1.371)</td>
<td>(0.352)</td>
<td>(-0.675)</td>
<td></td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.047</td>
<td>0.019</td>
<td>-0.014</td>
<td>0.125**</td>
</tr>
<tr>
<td>(0.696)</td>
<td>(0.195)</td>
<td>(-0.127)</td>
<td>(2.257)</td>
<td></td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.321</td>
<td>0.266</td>
<td>0.374</td>
<td>0.37</td>
</tr>
<tr>
<td>Observations</td>
<td>1465</td>
<td>1465</td>
<td>1465</td>
<td>1465</td>
</tr>
<tr>
<td>F statistic</td>
<td>2.549</td>
<td>2.192</td>
<td>2.958</td>
<td>2.916</td>
</tr>
<tr>
<td>VIF</td>
<td>1.472</td>
<td>1.363</td>
<td>1.596</td>
<td>1.584</td>
</tr>
</tbody>
</table>

Where BLOCK_DUMMY is the block ownership at each of the levels, 3-5%, 5-10%, 10-20% and 20% and above, is given a dummy variable for each regression, where for the 3-5% regression, all firms with ownership at 3-5% = 1 and firms without owners at 3-5% = 0 and this is the same for the other levels of ownership. BOARD is the Board score developed by Risk Metrics and have a range between 1 to 5, AVERAGE_TRADE_VOLUME, average number of shares traded over the month divided by the shares in issue x 100; BETA is the market model beta calculated from daily returns measured over a year; IDORISK, standard deviation of the market model residuals of daily returns measured over a year prior; MARKET_ADJ_RETURN, return on share for 1 year less risk free rate divided by beta for share; DEBT_ASSET, total debt including long and short term divided by total assets x 100; DIV_YLD, dividend per share/ last price; ROE, net income available for common shareholders divided by average common equity for that year x 100; P_B, Price of stock divided by trailing EPS; PRICE_LOG, the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

The correlation coefficient is positive and significant for 3-5% and 5-10% (0.015* and 0.040* respectively) and for 20% and above the relationship is -0.023*, which again is consistent with the findings for logit regressions without the fixed firm effect. These associations may be explained by if the institutions have a smaller proportion of the shares, then this makes
them less able to exhort change on the company, thus seeking firms that better corporate governance on the board would make sense. However, this does pose the question of why would institutions who have bigger stakes not have an interest in the board’s corporate governance.

The board is responsible for driving the company forward (Cadbury, 1992) and it would be expected that even if the institutions can force change, especially in the larger stakes, but if the institutions only own 5% to 10% of the firm, they could influence only limited change. For example, the board score included the ability to have annual election to the board, which is an important shareholder right and helps reduce takeover defences (Becht et al 2003, Guo et al, 2008; Cohen and Wang, 2013) and it also helps financial performance (Guo, Kruse, and Nohel, 2008; Cohen and Wang, 2013; Brown and Caylor, 2006). So why would the institutions not want this? Is it they are no looking for longer term investments or simply do not consider it as an issue?

This supports the hypothesis H3b that where block-ownership is greater there will be less association between institutional ownership and the Board Score.

7.4.5 Time Frame
This section discusses how the relationship between ownership and Board Score may have changed over the study period from 2006 to 2010, to create a better understanding of the period the study periods are broken down into three study periods; 2006 to 2007 Pre-crisis; 2008 crisis period and; 2009 to 2010 post crisis period. The crisis being the financial global financial crisis that began towards the latter part of 2007, just as a reminder the data is collected from the start of each period, thus 2007 is before the financial crisis. The results are presented in Table 32.
The results of this table show the results for the following regression model:

\[
OWN\_PERIOD_{it} = \beta_0 + \beta_1 BOARD\_SCORE_{it} + \beta_2 LOG\_MKT\_CAP_{it} + \beta_3 AVERAGE\_TRADE\_VOLUME_{it} + \beta_4 BETA_{it} + \beta_5 IDORSK_{it} + \beta_6 MARKET\_ADJ\_RETURN_{it} + \beta_7 DEBT\_ASSET_{it} + \beta_8 DIV\_YLD_{it} + \varepsilon_{it}
\]

Where OWN\_PERIOD\_it is the percentage ownership by institutional investors during the following periods; Pre-Crisis (2006-07) Crisis (2008) and Post-Crisis (2009-10). The regression is run with each of these ownership levels, BOARD is the audit environment score developed by Risk Metrics and have a range between 1 to 5, AVERAGE\_TRADE\_VOLUME\_it is average number of shares traded over the month divided by the shares in issue x 100, BETA\_it is the market model beta calculated from daily returns measure over a year, IDORSK\_it standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN\_it returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET\_it total debt including long and short term divided by total assets x 100; DIV\_YLD\_it dividend per share/ last price; ROE\_it net income available for common shareholders divided by average common equity for that year x 100; P\_E\_it Price of stock dividend by trailing EPS; PRICE\_LOG\_it is the LOG of last share price at t. *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS Regression Pre-Crisis</th>
<th>Hayes &amp; Cai</th>
<th>Pooled OLS Regression Crisis</th>
<th>Hayes &amp; Cai</th>
<th>Pooled OLS Regression Post Crisis</th>
<th>Hayes &amp; Cai</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOARD</td>
<td>1.779</td>
<td>1.8924</td>
<td>3.193</td>
<td>3.354</td>
<td>2.868</td>
<td>3.0168</td>
</tr>
<tr>
<td></td>
<td>(1.708)</td>
<td>(1.875)</td>
<td>(2.290)</td>
<td>(2.220)</td>
<td>(2.700)</td>
<td>(2.782)</td>
</tr>
<tr>
<td></td>
<td>(-6.654)</td>
<td>(-7.839)</td>
<td>(-4.954)</td>
<td>(-6.033)</td>
<td>(-6.914)</td>
<td>(-7.939)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>6.851</td>
<td>6.9402</td>
<td>-0.614</td>
<td>0.0083</td>
<td>-0.368</td>
<td>2.2203</td>
</tr>
<tr>
<td></td>
<td>(2.780)</td>
<td>(2.833)</td>
<td>(-0.161)</td>
<td>(0.002)</td>
<td>(-0.120)</td>
<td>(0.477)</td>
</tr>
<tr>
<td></td>
<td>(-1.201)</td>
<td>(-1.395)</td>
<td>(1.124)</td>
<td>(0.674)</td>
<td>(3.013)</td>
<td>(1.767)</td>
</tr>
<tr>
<td>IODRISK</td>
<td>10.470</td>
<td>32.1137</td>
<td>-118.255</td>
<td>-188.181</td>
<td>8.893</td>
<td>-42.2812</td>
</tr>
<tr>
<td></td>
<td>(0.094)</td>
<td>(0.218)</td>
<td>(-0.490)</td>
<td>(-0.797)</td>
<td>(0.109)</td>
<td>(-0.545)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.858</td>
<td>0.7335</td>
<td>-0.353</td>
<td>-0.3653</td>
<td>-0.206</td>
<td>-0.2286</td>
</tr>
<tr>
<td></td>
<td>(2.456)</td>
<td>(0.544)</td>
<td>(-0.693)</td>
<td>(-0.646)</td>
<td>(-1.601)</td>
<td>(-1.860)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.031</td>
<td>-0.0495</td>
<td>-0.042</td>
<td>-0.042</td>
<td>0.000</td>
<td>0.0136</td>
</tr>
<tr>
<td></td>
<td>(-0.826)</td>
<td>(-1.260)</td>
<td>(-0.788)</td>
<td>(-0.788)</td>
<td>(-0.002)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-11.355</td>
<td>-11.0753</td>
<td>1.122</td>
<td>-0.5777</td>
<td>-2.498</td>
<td>-3.1864</td>
</tr>
<tr>
<td></td>
<td>(-2.712)</td>
<td>(-3.602)</td>
<td>(0.293)</td>
<td>(0.050)</td>
<td>(-0.798)</td>
<td>(-0.370)</td>
</tr>
<tr>
<td>PE</td>
<td>-0.006</td>
<td>-0.0069</td>
<td>0.024</td>
<td>0.0251</td>
<td>0.008</td>
<td>0.0097</td>
</tr>
<tr>
<td></td>
<td>(-0.015)</td>
<td>(-0.0888)</td>
<td>(2.092)</td>
<td>(2.411)</td>
<td>(1.255)</td>
<td>(1.848)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.029</td>
<td>-0.9657</td>
<td>-3.754</td>
<td>-3.43</td>
<td>0.012</td>
<td>0.6135</td>
</tr>
<tr>
<td></td>
<td>(0.012)</td>
<td>(-0.305)</td>
<td>(-1.471)</td>
<td>(-1.194)</td>
<td>(0.006)</td>
<td>(0.293)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>1.745</td>
<td>1.4323</td>
<td>-4.337</td>
<td>-3.0298</td>
<td>1.235</td>
<td>0.9174</td>
</tr>
<tr>
<td></td>
<td>(0.775)</td>
<td>(0.577)</td>
<td>(-1.445)</td>
<td>(-0.812)</td>
<td>(0.605)</td>
<td>(0.407)</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.157</td>
<td>0.169</td>
<td>0.244</td>
<td>0.2573</td>
<td>0.191</td>
<td>0.1685</td>
</tr>
<tr>
<td>Observations</td>
<td>624</td>
<td>624</td>
<td>282</td>
<td>282</td>
<td>559</td>
<td>559</td>
</tr>
<tr>
<td>VIF</td>
<td>1.186</td>
<td>1.200</td>
<td>1.323</td>
<td>1.346</td>
<td>1.237</td>
<td>1.202</td>
</tr>
</tbody>
</table>
7.4.5.1 Robustness Checks
To determine whether the results in Table 33 shows a significant change in institutional pattern from before and after the crisis, firstly an interaction dummy is used and it is found that the correlation coefficient is 2.402, however it is insignificant and when a fixed firm effect is used again the results are insignificant with -1.589 correlation coefficient.
### Table 33: Results for Time Frame with Board Score and the Use of Interaction Dummy and Fixed Firm Effects

The results of this table show the results for the following regression model:

\[
INST\_OWN_{it} = \beta_0 + \beta_1 BOARD_{it} + \beta_2 TIME\_Dummy\_it + \beta_3 (BOARD_{it} \times Time\_Dummy_{it}) + \beta_4 LOG\_MKT\_CAP_{it} + \\
+ \beta_5 AVERAGE\_TRADE\_VOLUME_{it} + \beta_6 BEAUTY_{it} + \beta_7 (IOISK_{it} \times \beta_8) + \beta_9 MARKET\_ADJ\_RETURN_{it} + \\
+ \beta_{10} DEBT\_ASSET_{it} + \beta_{11} DIV\_YLD_{it} + \beta_{12} PE_{it} + \beta_{13} ROE_{it} + \beta_{14} PRICE\_LOG_{it} + \epsilon_{it}
\]

\[
INST\_OWN_{it} = \beta_0 + \beta_1 BOARD_{it} + \beta_2 TIME\_Dummy\_it + \beta_3 (BOARD_{it} \times Time\_Dummy_{it}) + \beta_4 LOG\_MKT\_CAP_{it} + \\
+ \beta_5 AVERAGE\_TRADE\_VOLUME_{it} + \beta_6 BEAUTY_{it} + \beta_7 (IOISK_{it} \times \beta_8) + \beta_9 MARKET\_ADJ\_RETURN_{it} + \beta_{10} DEBT\_ASSET_{it} + \\
+ \beta_{11} DIV\_YLD_{it} + \beta_{12} PE_{it} + \beta_{13} ROE_{it} + \beta_{14} PRICE\_LOG_{it} + \beta_{15} INTERACTIVE\_Dummy\_Board + \epsilon_{it}
\]

Where \( INST\_OWN \), is the percentage ownership by institutional investors. The regression is run with each of these ownership levels, \( BOARD \) is the board score developed by Risk Metrics and have a range between 1 to 5, \( Time\_Dummy \), is a dummy variable for before and after the financial crisis where 1 represent the period before the crisis (2005-2006) and 0 is after the crisis (2007-2010); \( Interactive\_Dummy\_Board \) is Time Dummy x BOARD; \( AVERAGE\_TRADE\_VOLUME \) is the average number of shares traded over the month divided by the shares in issue x 100; \( BEAUTY \) is the market model beta calculated from daily returns measure over a year, \( IOISK \), standard deviation of the market model residuals of daily returns measured over a year prior; \( MARKET\_ADJ\_RETURN \), t returns on share for 1 year less risk free rate divided by beta for share; \( DEBT\_ASSET \), t total debt including long and short term divided by total assets x 100; \( DIV\_YLD \), t dividend per share/ last price; \( ROE \), t net income available for common shareholders divided by average common equity for that year x 100; \( PRICE\_LOG \), t Price of stock dividend by trailing EPS, \( PRICE\_LOG \), t is the LOG of last share price at t. ***, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS Regression</th>
<th>Fixed Firm Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOARD</td>
<td>2.867</td>
<td>-0.576</td>
</tr>
<tr>
<td></td>
<td>(3.407)</td>
<td>(-0.712)</td>
</tr>
<tr>
<td>Interactive_Dummy_Board</td>
<td>-1.273</td>
<td>-0.539</td>
</tr>
<tr>
<td></td>
<td>(-1.032)</td>
<td>(-0.557)</td>
</tr>
<tr>
<td>Time_Dummy</td>
<td>2.402</td>
<td>-1.589</td>
</tr>
<tr>
<td></td>
<td>(0.444)</td>
<td>(-0.376)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-10.931</td>
<td>-10.788</td>
</tr>
<tr>
<td></td>
<td>(-11.408)</td>
<td>(-10.91)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>3.745</td>
<td>0.841</td>
</tr>
<tr>
<td></td>
<td>(3.226)</td>
<td>(0.828)</td>
</tr>
<tr>
<td>BETA</td>
<td>1.958</td>
<td>1.016</td>
</tr>
<tr>
<td></td>
<td>(1.438)</td>
<td>(0.693)</td>
</tr>
<tr>
<td>IOISK</td>
<td>-63.179</td>
<td>-14.068</td>
</tr>
<tr>
<td></td>
<td>(-1.546)</td>
<td>(-0.419)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.017</td>
<td>-0.028</td>
</tr>
<tr>
<td></td>
<td>(-1.151)</td>
<td>(-2.631)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.018</td>
<td>-0.033</td>
</tr>
<tr>
<td></td>
<td>(0.091)</td>
<td>(-0.927)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>0.375</td>
<td>0.073</td>
</tr>
<tr>
<td></td>
<td>(1.185)</td>
<td>(0.265)</td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.220)</td>
<td>(0.091)</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.315 *</td>
<td>0.045</td>
</tr>
<tr>
<td></td>
<td>(-1.843)</td>
<td>(0.358)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>-0.315</td>
<td>7.239</td>
</tr>
<tr>
<td></td>
<td>(-0.939)</td>
<td>(2.351)</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.177</td>
<td>0.649</td>
</tr>
<tr>
<td>Observations</td>
<td>1465</td>
<td>1465</td>
</tr>
<tr>
<td>F Statistic</td>
<td>16.668</td>
<td>7.057</td>
</tr>
<tr>
<td>VIF</td>
<td>1.215</td>
<td>2.846</td>
</tr>
</tbody>
</table>
This evidence does not support hypothesis H3c. There will be increasing in positive association between total institutional ownership and board score from before and after the financial crisis of 2007-8, thus the null hypothesis is rejected.

It does appear that the board score is the only one of the sub-indexes that has remained positively associated throughout the study period. This suggests that the financial failings of 2007 have has less of an impact on how institutions view the board. The level of significance has improved; however further tests did not support these observations. However, it has been long argued that the board is the most important element of corporate governance, as demonstrated by the Cadbury Report over 20 years ago. So, maybe institutions have taken on board these concerns before the financial crisis and especially since a lot of research into corporate governance and value of a firm pre dated the financial crisis (Gompers et al, 2003; Core, 2006; Brown and Caylor, 2006). The corporate governance in these papers considered elements like annual election and other anti-takeover provisions, which seems to be the flavour of American research and the ISS (RiskMetric) board score used in this research. However, the importance appears to have grown with the results suggesting it is of increase importance after the financial crisis. Again this could have been for similar reasons to the other sub-scores (Audit and Compensation), there is growing pressure upon institutions to take further action in monitoring their investments and one of the areas is the boards’ corporate governance.

7.4.6 Summary
In summary, there is a relationship between good board structure and practices and institutional ownership, thus accepting H3a. In addition, there is a change in association when block-ownership is greater; with only 3-5%, level of block-ownership being significant, accepting H3b. H3c is rejected as there is not sufficient evidence to show that the financial crisis is a critical juncture for investors.

7.5 Discussion
This section presents a comparison between the different elements of corporate governance in relation to total institutional share ownership for the whole study period. Within this study, the board score showed to have the most significant association to total institutional ownership, as it showed a positive significant association, with the fixed firm
effects and the change in variables, lagged change in board score and the 2SLS regressions. Although the audit score is fairly similar, it did not show significance with the lagged change in audit score. Whereas, the compensation score did not show significant association for any of the regression results. So, in order of importance the elements are ranked as follows:

1. Board Score
2. Audit Score
3. Compensations score

7.5.1 Discussion – Total ownership
The findings that the board score has the most significant association with institutional ownership, is consistent with prior research. Chung and Zhang (2011) found when examined the most important elements of their governance index in association to total institutional investors, found that out of the 36 elements of corporate governance, 10 are in their own right significant and from those 10, four are related to the board score and the other elements of the main indices. Therefore, from their findings, the board score is the most important of the sub-scores. When Hawas and Tse (2016) examined their sub-scores for corporate governance only the board score is found to be significant. Others, audit and accountability, board practices, compensation and shareholder relations are not significantly associated with major share ownership.

The results for the audit score are more unusual, as Chung and Zhang (2011) did include one of the elements of the audit score, non-audit fees should be less than audit fees, into their corporate governance index. Chung and Zhang (2011) did not find this element to be significant in its own right. Despite their seeming to be no similarity at first glance, it must be noted that Chung and Zhang (2011) data is from before the financial crisis, whereas this study included the financial crisis. In the following section, there is a discussion on the impact of the financial crisis on the association, and it is found that the audit score’s association to total institutional ownership is insignificant before the financial crisis, similar to Chung and Zhang’s (2011) results. Hawas and Tse (2016) did not find an association with major ownership and audit, but the key difference here is major ownership, not institutional ownership, given this study is examining only institutional owners and they are the group criticised for their inaction after the financial crisis (Walker, 2009 and Kay, 2011), so this may account for the difference. In addition, both Hawas and Tse (2016) and Chung and Zhang
(2011) used a different measure for audit, in this study a summary measure is used for the proxy of the audit environment, whereas for both Chung and Zhang (2011) and Hawas and Tse (2016) it would be expected that the institutions invest time to obtain this information and this may not be the case, as argued in the theoretical review, the diversity of the portfolio may mean that the cost benefit is minimal. Also, the could be the limited attention of investors (Hirshleifer and Teoh, 2003), which would mean as this information is not prominent in the accounts then it is not incorporated into investment decisions and this issue could be worsened by the diversity of portfolio that institutions have.

These results raise the question, why is the board the most significant of the governance scores? As it has been previously argued in the earlier in this chapter, the board is the backbone of a firm’s corporate governance and whatever corporate governance mechanisms are put into place would stem from the board (Cadbury Code, 1992). If the tone at the top is poor, then the general attitude to governance and risk will probably be poor. For example, if the board of directors consists of three executive directors and one non-executive director, it is not going to be possible to only have independent audit or remuneration committees. Thus, if it is important for a company to have good governance for institutional shareholders, then the most important element must be the board by default, as essentially the strength of the board is the strength of the governance by the fact there is interconnectivity between the board and general governance. These reasons help explain why the board is the most important factor within this study period. The audit score is the second most important of the elements, however, a possible explanation could be the study period, as there is a lot of regulatory pressure at this time. These arguments are explored in the following section.

The compensation scores are the only element of corporate governance that is not significantly associated to institutional ownership, suggesting that institutions do not tilt their portfolios to firms with good remunerations practices or they have little influence over them. These results are consistent with both Chung and Zhang (2011) and Hawas and Tse (2016). The possible explanations for this are explored further in the following section on the financial crisis.
These are important findings, as this is the first study of the UK that specifically analyses the total institutional investment association to corporate governance. Other studies have presented findings for major investors and have used a more UK based measure of corporate governance, as discussed in the literature review of corporate governance (Hawas and Tse, 2016), making more comparable to North American research. This is the first study to break down corporate governance into elements and analysis this against total institutional shareholdings.

This section\textsuperscript{34} has discussed why the board score is the most significant element of corporate governance in relation to institutional ownership. The following section is a discussion on how the financial crisis affected these associations, discussed in this section.

\textsuperscript{34} An additional regression is run for total institutional ownership and it uses all three sub-scores, audit, board and compensation. It is found that the results remain consistent with previous findings. For more detail see appendix E table 1.
7.6.2 Discussion - Block Ownership
This section discusses the impact block-ownership has on the relationship between institutional ownership and the sub-scores. It is found that both the audit and board score has changed in ownership levels for the different groups, whereas the compensation score has no impact on preferences for any of the ownership levels, as can be seen from the Table 34.

**Table 34 Summary of Correlation Coefficients for Logit Regression with Fixed Firm Effects**

<table>
<thead>
<tr>
<th>Summary of Correlation Coefficients for Logit Regressions with Fixed firm effect</th>
<th>3-5%</th>
<th>5-10%</th>
<th>10-20%</th>
<th>20% and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit Score</td>
<td>0.041***</td>
<td>0.051***</td>
<td>-0.047**</td>
<td>-0.001</td>
</tr>
<tr>
<td>Board Score</td>
<td>0.015*</td>
<td>0.040*</td>
<td>-0.023</td>
<td>-0.023*</td>
</tr>
<tr>
<td>Compensation Score</td>
<td>0.012</td>
<td>-0.003</td>
<td>0.014</td>
<td>-0.002</td>
</tr>
</tbody>
</table>

*.*, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

It is apparent from the results both the audit score and board score has more influence over institutional investors preferences when the ownership levels are below 10%. Whereas firms with higher ownership levels there was a negative association, this suggests that firms prefer to invest in firms with worse audit score for 10-20% level and worst board score for 20% and above ownership level. An explanation could be firms with larger stakes do not want to use proxy advisory services, like ISS (RiskMetrics), as institutions with this level of ownership can afford to do their own research into a firm, as there will be a cost benefit, compared to firms with smaller stakes. However, a flaw in this argument is that the ISS score may be generated from a proxy service, the governance scores are derived from actual corporate governance practices, so it would be expected that if an institution produced their own score, it would have some resemblance to the strength of governance the firm had. So, a possibly more plausible argument is that institutions that build up large stakes in firms, do so to force change and one area of change that has been known to produce good returns is improvements in corporate governance (Boyson and Mooradian, 2011; Bratton, 2007; Klien and Zur, 2009).

As institutional ownership is greater in the lower levels it may be seen as a way to fulfil their fiduciary duty by actively investing in firms with good governance. According to Hussain (2000) investing in firms with a high analyst following can show evidence that investors are meeting the legal requirements and investing in firms with good governance scores could be
an extension of this. Whereas, larger block-owners may show this in other ways, such as open dialogue with the investee firm.

These are general explanations for the results but do not address why audit and the board score. This section discusses the possible reasons for the subs scores in particular. The audit score represents the audit environment, and as part of the hypothesis development, it is explained that it is expected that firms with smaller stakes would prefer firms with good audit scores in order to reduce the agency cost of monitoring. The results are consistent with this view, as when a firm has smaller stakes in a firm they are more impotent to influence the firms’ audit environment. For example, if an institutional investor has a 30% block holding, they would have far more influence on the ratification of the external auditor, than if they had a 3% share. Thus, the results are consistent with expectations that the smaller stakes (10% and less) there is a positive significant association between institutional ownership and the audit score. For the board score again it is expected that the institutional investors with lower stakes would prefer firms with better audit score. Having an effective board should in theory help relieve agency problems of the directors acting in their best interest rather than the shareholders If the directors have less control over the shareholders, because of smaller stakes in the company, the board score is a good way to help reduce active monitoring costs (Bushee, et al, 2013).

Currently, there is no directly comparable research into how the level of ownership changes the association to corporate governance, when quite clearly from the findings there is a big difference in association for larger block-owners compared to smaller block-owners and is a clearly an under-researched area. This study provides new evidence on how UK block-owners behave in relation to corporate governance.

7.7.3 Discussion - Financial Crisis
This section assesses changes in institutional shareholders’ preferences of the individual proxies for corporate governance. The only sub-score to have significant influence over institutional investors is the audit score.

The financial crisis has been described as a critical juncture (Braun, 2015), the study questions whether the crisis has impacted on the institutional preferences on corporate governance. From the results presented here is a general trend for an increased association
between total institutional ownership and the audit score and the compensations score. Thus, suggesting there may have been a change in attitude. However, when using an interaction dummy to see if there are greater preferences for good governance before and after the crisis, only the audit score is significant. Whereas the compensation score did not show a significant change, thus the financial crisis cannot be identified as the reason why the change in pattern occurred.

The results from Table 17 for the audit score show insignificant results in the pre-crisis period, this may have been on account of the latest reviews on corporate governance are a few years before with the Smith Report (2003) on the audit committee. Therefore, investors may have considered these issues as resolved or they could have been less prominent in their minds. So, possibly this is why there is no association from 2006 to 2007. However, the association with the audit score changed during the crisis and showed a weak significance, maybe this is because of the financial collapse of high profile banks in 2008 e.g. Lehman Brothers, Merrill Lynch, HBOS and The Royal Bank of Scotland, all with clean audit reports prior to their collapse and no mention of possible going concern issues (Lehman Brothers, 2007; Merrill Lynch, 2007; HBOS, 2007, The Royal Bank of Scotland, 2007). Institutional investors may have become somewhat concern with the possible failure of auditors and the institutions’ priorities may have been readjusted.

It must be considered an important factor as institutional institutions were heavily criticised for their role in the financial crisis and a contributing factor is that their remuneration packages were criticised for the promoting risky behaviour. For example, comparing US banks and non-bank CEO pay it is found that there is greater pay risk sensitivity (Vega) from 1999 to 2006 and companies with high risk sensitivity typically the CEO pay included a lot of stock options (DeYoung, Peng, and Yan, 2013). However, the compensation score included elements about stock-options and not having too many because of excessive risk taking, and Banks are found to use stock-options. Consequently, it could be argued that from the institutional shareholder perspective stock-options are considered to be bad in times of economic turmoil, as stock-option promote risk taking.

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35 Where Pay risk sensitivity (Vega) is measured by the change in the dollar value of CEO wealth for a 0.01-unit change in stock return volatility
In the post-financial crisis period, however, the compensation score and the audit score, both presented a positive strongly significant association to total institutional ownership. Audit score strength of association to institutional ownership is in line with expectations, given the economic and regulatory pressure at this period in time.

The financial crisis has been described as a critical juncture for institutional investors, with the crisis being argued to be the catalyst for the implementation of the Stewardship Code (2010) (O’Dwyer, 2014) and the EU directive on auditing (European Commission, 2014). This shows the increased pressure for both institutional investors and the audit profession and caused a change in preference for institutional investors to invest in firms with a better audit environment.

The question remains, why is the compensation score the only element of corporate governance that did not have a positive association with institutional ownership until after the financial crisis?

Whereas, the association between good remunerations practices and value had not been widely established. Whilst there appears to have been a change for the compensation score, this may have been less pronounced to show a significant shift it could be argued that since the financial crisis there is a growing body of reports trying to establish the causes of the financial crisis. One of these reports is from The Committee of European Banking Supervisors (CEBS) who published its guidelines on Remunerations Policies and Practices in December 2010 (CEBS, 2010) where it states that there should be a cap on bonuses for banks operating in Europe. Suggesting that the institutions themselves were in the spotlight for their remuneration packages.

The board is one of the areas that have a significant positive association for each period of study and the financial crisis did not appear to impact the institutional preferences on the board score, suggesting that this is one of the areas that is always important for investors, thus there is no real possibility of demonstrating a sizable shift in attitude, as institutions already showed a preference for good governance, as is shown from the results.

Another explanation for the audit score being the only sub score preference that changed after the financial crisis is the simplicity of the score in comparison to the board score and
compensation score, as both are far more complex. The compensation score included elements that are subjective and the board score contained far more elements (see Appendix A for more detail). Therefore, applying the theory of limited attention (Hirshleifer and Teoh, 2003), if the information is simpler it could be incorporated easier into investment choices.

This study has produced important evidence, demonstrating that institutions have changing preferences of institutions and that exerting pressure upon a group does appear to help shape their behaviour. No other study has researched this important time period and examined how it has affected the behaviour of institutional shareholders and corporate governance.

7.6 Summary
The aim of this chapter is to answer the research question, is a particular element of good governance that is more influential over investors’ preferences? The answer is clearly yes, from the results the elements that are the biggest influence over investment preferences are the board score and the audit score, however, the remuneration score shows no significant association throughout all the regression analysis, suggesting that institutions do not consider remunerations as an issue for when they invest.

In addition to this question, the results in this section provide some evidence on whether institutional investors’ preferences change when they have different levels of block-ownership? There appears to be a clear difference for the audit score and compensation score, but no difference for the compensation score. Therefore, there are differences, but not for all of the elements of corporate governance.

The final question this chapter provides evidences on is, whether there is a change in association before and after the financial crisis. The evidence is mixed, the results show that financial crisis had an impact on institutional preferences in relation to the audit score, but none of the other scores showed a change in preference from before and after the crisis.

The following chapter examines the results for the preferences on institutional investors on overall corporate governance.
Chapter Eight

Overall Corporate Governance Results and discussion
8.0 Corporate Governance
This section presents the results and discussion for the association between institutional share ownership and a firm’s overall corporate governance. In the previous chapter, the results have examined certain elements of corporate governance, audit environment, the board of directors and directors’ remunerations. In this section, all of those elements are incorporated into the two percentile scores, plus some additional elements of corporate governance, for example, voting requirements. For more detail, refer to Appendix A. There are two types of governance rating comparing against the companies’ industry as defined by S&P’s Global Industry Classification Standard (GICS) (INDUSTRY) and the other MSCI EAFE index (INDEX). Details are provided in the Methodology chapter section 4.5.

The results presented in this chapter will answer the research question outlined in the introductory chapter, do institutional investors prefer to invest in firms with good corporate governance? In the previous chapter results related to the research question about whether institutional owners’ preferences change for the different ownership levels is presented. This is found to be true for the audit score and the board score. In this chapter, there is further examination of whether this is true for overall corporate governance. Again in the previous chapter, it is found that there is a change in institutional preferences for the audit score after the financial crisis and in this chapter, there is an analysis of whether this is the case for overall corporate governance.

8.1 Corporate Governance – Aims
The aims of the study are to assess the relationship between institutional ownership and the index and industry score for corporate governance, in particular, it is addressing the following hypotheses

H4a There is a positive association between total institutional shareholder ownership and the overall corporate governance score.

H4b Where block-ownership is greater there will be less association between institutional ownership and the overall corporate governance scores.
H4c There will be an increase in the positive association between total institutional ownership and overall corporate governance from before and after the financial crisis of 2007-8.

8.2 Descriptive Statistics

This section presents the descriptive statistics for both the industry and index scores for overall corporate governance.

**Table 35 Descriptive Statistics for Index and Industry Score**

<table>
<thead>
<tr>
<th></th>
<th>INDEX</th>
<th>INDUSTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
<td>Maximum</td>
</tr>
<tr>
<td>INDEX</td>
<td>11.60</td>
<td>100.00</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Crisis</td>
<td>41.56</td>
<td>100.00</td>
</tr>
<tr>
<td>Crisis</td>
<td>31.10</td>
<td>100.00</td>
</tr>
<tr>
<td>Post-Crisis</td>
<td>11.60</td>
<td>99.90</td>
</tr>
<tr>
<td>3-5% Ownership</td>
<td>11.60</td>
<td>100.00</td>
</tr>
<tr>
<td>5-10% Ownership</td>
<td>17.10</td>
<td>100.00</td>
</tr>
<tr>
<td>10-20% Ownership</td>
<td>11.60</td>
<td>99.90</td>
</tr>
<tr>
<td>20%+ Ownership</td>
<td>41.56</td>
<td>98.20</td>
</tr>
</tbody>
</table>

Table 35 presents the descriptive statistics for the two general indices (INDEX and INDUSTRY). Both scores means are in the 80s, with the INDUSTRY score having a slightly lower score and higher standard deviation. This suggests that there is more variability in the corporate governance of a firm when comparing it against firms in a similar industry than firms in the index. This could infer that there is more association between a firm’s corporate governance and the firm size than the industry type.

When reviewing the mean for the different time frames, the governance score for the INDEX has generally improved from the pre-crisis mean of 82.76 to 84.64 for both crisis and post-crisis period. The INDEX score is the corporate governance score in comparison to the
MSCI EAFE index uses UK companies’ corporate governance, so as the INDEX score has improved from 2006 to 2010, the increase could be because of an improvement in actual corporate governance, or it could be others in the index have worsened so, the UK firms appear better. The INDUSTRY score does not follow the same pattern, with a sudden spike in the score for the crisis period of 83.35 compared to pre-crisis 81.43 and post crisis 81.71. These means imply that UK firms improved their governance in comparison to their industry during the crisis, and then returned to the pre-crisis norms.

The descriptive statistics for the amount of institutional ownership levels show that if a firm has smaller block holder ownership (i.e. more firms with institutional owners at the 3-5% level) then the better the corporate governance score. This is consistent with the findings for the sub-indices, Audit Score, Board Score and Compensation Score, in sections 7.2, 7.3 and 7.4.

Table 36 presents the mean institutional ownership for each quartile group for the industry score. The results show that the mean total institutional ownership of firms belonging to the lowest ranking is 33.17%, whereas the highest ranking is 34.17%. A t-test is run for the whole period for the firms belonging to the lowest and highest ranked group it is significant with a p-value of 0.05, thus suggesting that from the initial analysis there is an association between institutional ownership and the industry score. For the post financial crisis period there is a big difference between the total institutional ownership in relation to the industry score, where it is found that firms belonging to the lowest ranking have a mean ownership of 29.19% compared to the best group with 32.86% and the t test on for this period for firms belonging to the lowest and highest ranked groups has a significant of 1%. Suggesting that there is a change in preferences after the financial crisis. The only other value that proved to be significant is the ownership level of 10-20% with the bottom industry quartile having a mean ownership of 18.84% compared to the highest industry quartile of 17.04 with a t-test significance of 1%. Thus, it seems from these results that firms with 10-20% ownership level prefer firms with a poorer industry rating.
Table 36 Descriptive Statistics for the Change in Industry Score and Institutional Ownership

The firm year data is ranked by Industry score into quantiles, where 1 is the lowest quantile score and 4 is the highest quantile score. The 1st column of the table represents the mean total institutional ownership within each quantile. Column 2 represents the mean total institutional ownership for the pre-crisis period (2006-07). Column 3 represents the mean total institutional ownership for the crisis period (2008). Column 4 represents the mean total institutional ownership for the post-crisis period (2009-10). Column 5 represents the mean institutional ownership for owners with between 3-5% blockholdings for the whole period. Column 6 represents the mean institutional ownership for owners with between 5-10% blockholdings for the whole period. Column 7 represents the mean institutional ownership for owners with between 10%-20% blockholdings for the whole period. Column 8 represents the mean institutional ownership for owners with 20% and above blockholdings for the whole period. The T test is performed on value of institutional ownership for firms that belonged to the highest Industry score quantile is statistically different from the corresponding value for firms that belong to the lowest Industry score.

<table>
<thead>
<tr>
<th>Industry Score Quartile</th>
<th>Total Institutional Ownership Mean</th>
<th>Pre Crisis Mean</th>
<th>Crisis Mean</th>
<th>Post Crisis Mean</th>
<th>3-5% Ownership Mean</th>
<th>5-10% Ownership Mean</th>
<th>10-20% Ownership Mean</th>
<th>20%≥ Ownership Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (bottom)</td>
<td>33.13</td>
<td>33.41</td>
<td>36.34</td>
<td>29.19</td>
<td>11.97</td>
<td>15.39</td>
<td>18.84</td>
<td>28.62</td>
</tr>
<tr>
<td>2</td>
<td>34.63</td>
<td>34.06</td>
<td>36.27</td>
<td>36.18</td>
<td>12.70</td>
<td>15.38</td>
<td>17.33</td>
<td>29.38</td>
</tr>
<tr>
<td>3</td>
<td>34.77</td>
<td>32.96</td>
<td>33.71</td>
<td>36.24</td>
<td>13.36</td>
<td>15.19</td>
<td>17.93</td>
<td>29.39</td>
</tr>
<tr>
<td>4 (highest)</td>
<td>34.17</td>
<td>31.12</td>
<td>37.64</td>
<td>32.86</td>
<td>12.52</td>
<td>15.42</td>
<td>17.04</td>
<td>29.60</td>
</tr>
</tbody>
</table>

Mean T Test

<table>
<thead>
<tr>
<th></th>
<th>T statistic</th>
<th>F statistic</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.03</td>
<td>3.78</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>1.16</td>
<td>1.58</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>-0.41</td>
<td>0.89</td>
<td>0.35</td>
</tr>
<tr>
<td></td>
<td>-1.78</td>
<td>8.68</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>-1.23</td>
<td>0.12</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>-0.04</td>
<td>2.06</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>2.12</td>
<td>8.11</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>-0.38</td>
<td>1.74</td>
<td>0.19</td>
</tr>
</tbody>
</table>

The Table 37 shows the same information as the Table 36, however for the index score. It is found that the pattern for the industry score is mirrored in the index score, with the mean institutional share ownership for the companies in the bottom quartile for the index score at 32.01% compared to the top quartile of 33.09% with a 10% significance. Again the post crisis shows significant changes with the bottom quartile having a mean ownership of 29.19% compared to the highest of 32.86% with 1% significance. The ownership level of 10-20% also suggests investors from this group prefer to invest in firms with poor corporate governance, as the companies from the bottom quartile of industry score 18.84% compared to the highest of 17.04% with a 1% significance.

216
Table 3 Descriptive Statistics for the Change in Index Score and Institutional Ownership

The firm year data is ranked by Index score into quantiles, where 1 is the lowest quantile score and 4 is the highest quantile score. The 1st column of the table represents the mean total institutional ownership within each quantile. Column 2 represents the mean total institutional ownership for the pre-crisis period (2006-07). Column 3 represents the mean total institutional ownership for the crisis period (2008). Column 4 represents the mean total institutional ownership for the post crisis period (2009-10). Column 5 represents the mean institutional ownership for owners with between 3-5% block-holdings for the whole period. Column 6 represents the mean institutional ownership for owners with between 5-10% block-holdings for the whole period. Column 7 represents the mean institutional ownership for owners with between 10%-20% block-holdings for the whole period. Column 8 represents the mean institutional ownership for owners with 20% and above block-holdings for the whole period. The T test is performed on value of institutional ownership for firms that belonged to the highest Index score quantile is statistically different from the corresponding value for firms that belong to the lowest Index score.

<table>
<thead>
<tr>
<th>Audit Score ranking</th>
<th>Mean Total Institutional Ownership</th>
<th>Pre Crisis</th>
<th>Crisis</th>
<th>Post Crisis</th>
<th>3-5% Ownership</th>
<th>5-10% Ownership</th>
<th>10-20% Ownership</th>
<th>20%≥ Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (bottom)</td>
<td>32.01 32.98 35.58 28.77</td>
<td>11.75</td>
<td>15.11</td>
<td>18.30</td>
<td>28.66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>34.86 33.75 35.87 35.51</td>
<td>12.86</td>
<td>15.68</td>
<td>18.11</td>
<td>29.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>35.40 33.62 36.98 36.44</td>
<td>13.13</td>
<td>15.25</td>
<td>17.64</td>
<td>30.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 (highest)</td>
<td>33.09 30.97 36.25 33.28</td>
<td>12.57</td>
<td>15.33</td>
<td>17.26</td>
<td>27.31</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean T Test

<table>
<thead>
<tr>
<th></th>
<th>T statistic</th>
<th>F statistic</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.85</td>
<td>3.35</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>1.03</td>
<td>0.82</td>
<td>0.37</td>
</tr>
<tr>
<td></td>
<td>-39.90</td>
<td>3.12</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>-2.30</td>
<td>3.75</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>-1.74</td>
<td>0.05</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>-0.30</td>
<td>1.64</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>1.13</td>
<td>4.82</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>0.54</td>
<td>0.57</td>
<td>0.45</td>
</tr>
</tbody>
</table>

The following section presents the findings for the regression analysis for corporate governance as a whole.
8.3 Total Institutional Ownership

Table 38 presents the OLS regression results for total institutional ownership and overall corporate governance (INDEX, INDUSTRY). The results indicate that there is a positive significant relation between corporate governance and total institutional ownership after controlling for other possible determinates of institutional ownership, with the index score showing a 0.248*** and the industry score 0.198*** correlation coefficient for the OLS regression and 0.2548*** for the index score and 0.204*** correlation coefficient for the Hayes and Cai method that controls for heteroscedasticity. These results are consistent with some previous research (Chung and Zhang, 2011; Hawas and Tse, 2016). It is expected that institutional investors have a high level of ownership in companies that have better corporate governance, as it provides better investor protection. Also by investing in firms with good governance, it fulfils part of the requirements of their fiduciary duties.
Table 38 Regression Results for Total Ownership against Index Score & Industry

The results of this table show the results for the following regression model:

\[
\text{INST_OWN}_{it} = \alpha + \beta_1 \text{GOVERNANCE}_{it} + \beta_2 \text{LOG_MKT_CAP}_{it} + \beta_3 \text{AVERAGE_TRADE_VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IODRISK}_{it} + \beta_6 \text{MARKET_ADJ_RETURN}_{it} + \beta_7 \text{MARKET_ADJ_RETURN}_{it} + \beta_8 \text{ROE}_{it} + \beta_9 \text{P_E}_{it} + \beta_{10} \text{PRICE_LOG}_{it} + \varepsilon_{it}
\]

Where \( \text{INST_OWN}_{it} \) is that ratio of the number of shares held by institutional investors to the total number of shares outstanding, \( \text{GOVERNANCE} \) is either the INDEX or INDUSTRY score developed by Risk Metrics and have a range between 1 to 100 to measure a firm's overall corporate governance, \( \text{AVERAGE_TRADE_VOLUME} \) is the average number of shares traded over the month divided by the shares in issue x 100, \( \text{BETA} \) is the market model beta calculated from daily returns measure over a year, \( \text{IODRISK} \) is standard deviation of the market model residuals of daily returns measured over a year prior; \( \text{MARKET_ADJ_RETURN} \) is returns on share for 1 year less risk free rate divided by beta for share; \( \text{DEBT_ASSET} \) is total debt including long and short term divided by total assets x 100; \( \text{DIV_YLD} \) is dividend per share/ last price; \( \text{ROE} \) is net income available for common shareholders divided by average common equity for that year x 100; \( \text{P_E} \) is Price of stock dividend by trailing EPS; \( \text{PRICE_LOG} \) is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDEX</td>
<td>0.248 ***</td>
<td>0.2548 ***</td>
<td>(5.782)</td>
<td>(5.347)</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>0.198 ***</td>
<td>0.204 ***</td>
<td>(5.902)</td>
<td>(5.475)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-11.228 ***</td>
<td>-10.626 ***</td>
<td>-11.512 ***</td>
<td>-10.626 ***</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>1.985</td>
<td>2.1307</td>
<td>3.099</td>
<td>2.964 **</td>
</tr>
<tr>
<td>BETA</td>
<td>1.912</td>
<td>2.1709</td>
<td>0.387</td>
<td>0.586</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.042</td>
<td>-0.0602</td>
<td>-0.039</td>
<td>-0.060</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.032</td>
<td>-0.0332</td>
<td>-0.022</td>
<td>-0.023</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-4.691 **</td>
<td>-4.5707</td>
<td>-4.952 **</td>
<td>-4.837 **</td>
</tr>
<tr>
<td>PE</td>
<td>0.004</td>
<td>0.0035</td>
<td>0.004</td>
<td>0.004</td>
</tr>
<tr>
<td>ROE</td>
<td>-1.262</td>
<td>-1.1605</td>
<td>-0.924</td>
<td>-0.799</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.491</td>
<td>0.3517</td>
<td>0.482</td>
<td>0.375</td>
</tr>
<tr>
<td>Year Dummy Included</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Industry Dummies</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.185</td>
<td>0.190</td>
<td>0.171</td>
<td>0.172</td>
</tr>
<tr>
<td>Observations</td>
<td>1470</td>
<td>1470</td>
<td>1470</td>
<td>1470</td>
</tr>
<tr>
<td>F Statistic</td>
<td>16.857</td>
<td>23.458</td>
<td>10.607</td>
<td>23.300</td>
</tr>
<tr>
<td>VIF</td>
<td>1.227</td>
<td>1.234</td>
<td>1.206</td>
<td>1.207</td>
</tr>
</tbody>
</table>
To add to the robustness of the results, year dummies are introduced to the regression, where the pre-crisis period is the observations from 2006 to 2007, crisis year is 2008 and post crisis is 2009 to 2010. This is to control for time effects over this volatile time period. In addition, for the INDEX score industry dummy variables are used, to control for any industry specific effects. It is not used for the INDUSTRY score, as the score already controls for industry effects, as it is a corporate governance score in comparison to the industry that it is in.

8.3.1 Robustness checks
To help control for endogeneity four measures are used; a fixed firm effect, 2SL, and change in variables.

The results for the fixed firm effect show correlation coefficients of 0.093** and 0.088** for the INDEX and INDUSTRY. This is consistent with the results presented in Table 39.

The results for the second stage of the regression show that in the first stage of the regression, where INDEX and INDUSTRY are used as the dependent variable and CEO tenure is introduced as the instrumental variable, it is found that both the have a negative significant association with CEO tenure which is consistent with expectations. The second stage shows that the INDEX and INDUSTRY are still significant and positive after controlling for possible endogeneity problems, with correlations coefficients of 0.257*** and 0.208*** for the INDEX and INDUSTRY.

When examining for causality the use of change in variables and lagged changes in variables, the results still showing a positive association, they are not significant, shown in Appendix E in tables E1 and E2. These results suggest that there is an association between institutional shareholdings and corporate governance, however there is mixed evidence to support the view that institutional shareholders are actually targeting firms with good governance and it could be argued that there is reverse causality where large amounts of institutional ownership cause firms to adopt better corporate governance.

Thus the hypothesis H4a that there is a positive association between total institutional sharehold ownership and the corporate governance score can be accepted, however, an extension of causality cannot be shown.
Table 39: Results for Total Ownership with the Index Score

The results of this table show the results for the following regression model:

\[ \text{INST}_{OWN_{it}} = \alpha + \beta_1 \text{GOVERNANCE}_{it} + \beta_2 \text{LOG}_MKT\_CAP_{it} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IDORISK}_{it} + \beta_6 \text{MARKET\_ADI\_RETURN}_{it} + \beta_7 \text{DEBT\_ASSET}_{it} + \beta_8 \text{DIV\_YLD}_{it} + \beta_9 \text{ROE}_{it} + \beta_{10} \text{PRICE\_LOG}_{it} + \epsilon_{it} \]

Where \( \text{INST}_{OWN_{it}} \) is the ratio of the number of shares held by institutional investors to the total number of shares outstanding; \( \text{GOVERNANCE} \) is either the INDEX or INDUSTRY score developed by RiskMetrics and has a range between 1 to 100 to measure a firm’s overall corporate governance; \( \text{AVERAGE\_TRADE\_VOLUME} \) is average amount of shares traded over the month divided by the shares in issue × 100; \( \text{BETA} \) is the market model beta calculated from daily returns over a year; \( \text{IDORISK} \) is standard deviation of the market model residuals of daily returns measured over a year prior; \( \text{MARKET\_ADI\_RETURN} \) returns on share for 1 year less risk free rate divided by beta for share; \( \text{DEBT\_ASSET} \) total debt including long and short term divided by total assets × 100; \( \text{DIV\_YLD} \) dividend per share/last price; \( \text{ROE} \) net income available for common shareholders divided by average common equity for that year × 100. \( \text{P} \), \( \text{L} \), \( \text{T} \) Price of stock dividend by trailing EPS; \( \text{PRICE\_LOG} \) is the LOG of last share price at t - 5, * **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t-statistics.

<table>
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<th>Variables</th>
<th>INDUSTRY</th>
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<th>LOG_MKT_CAP</th>
<th>AVERAGE_TRADE_VOLUME</th>
<th>BETA</th>
<th>IODRISK</th>
<th>MARKET_ADI_RETURN</th>
<th>DEBT_ASSET</th>
<th>DIV_YLD</th>
<th>PE</th>
<th>ROE</th>
<th>PRICE_LOG</th>
<th>Year Dummy Included</th>
<th>Adjusted R2</th>
<th>Observations</th>
<th>F Statistic</th>
<th>VIF</th>
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<td>0.257***</td>
<td>-0.214***</td>
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<td>0.556</td>
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<td>0.090</td>
<td>-0.206</td>
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<td></td>
<td>(0.294)</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>0.050</td>
<td></td>
<td>2.704***</td>
<td>(3.618)</td>
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<td>(0.445)</td>
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<td></td>
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</tr>
<tr>
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<td>-11.120***</td>
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<td>-9.750***</td>
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<td>-0.262***</td>
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<td>2.704***</td>
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<td>-0.018</td>
<td>0.077</td>
<td>0.005</td>
<td>0.005</td>
<td>0.005</td>
<td>0.005</td>
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<td>0.000</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-11.120***</td>
<td>3.013**</td>
<td>4.046</td>
<td>17.787</td>
<td>1.163</td>
<td>37.429</td>
<td>40.046</td>
<td>0.028</td>
<td>0.028</td>
<td>0.028</td>
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<td>0.028</td>
<td>0.028</td>
<td>0.028</td>
<td></td>
</tr>
<tr>
<td>Fixed Firm Effect</td>
<td>0.093**</td>
<td>0.088**</td>
<td>-11.058</td>
<td>2.704***</td>
<td>3.013</td>
<td>1.344</td>
<td>-0.050</td>
<td>-0.018</td>
<td>0.077</td>
<td>0.005</td>
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<td>Fixed Firm Effect</td>
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<td>3.013**</td>
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<td>17.787</td>
<td>1.163</td>
<td>37.429</td>
<td>40.046</td>
<td>0.028</td>
<td>0.028</td>
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<td></td>
</tr>
</tbody>
</table>

Results for Total Ownership with Index Score

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8.4 Block-Ownership

This section discusses the results found for when institutional shareholders have different levels of ownership and whether there is a difference in the association between corporate governance and ownership when regressing the results at different block ownership levels. The block ownership levels are taken as the sum of the ownerships between the following bands, 3-5%, 5-10%, 10-20% and 20% and above, similar to Kurshed (2011).

The results are presented in Tables 40 and 41, it is evident that the results mirror those of the sub score for the audit environment and only show significance at ownership levels of 3-5% and 5-10% using both the Pooled OLS regression and the Hayes and Cai method that controls for heteroscedasticity. The number of observations is differences for these regressions, as they only include firms with the corresponding level of ownership, so for the 3-5% level only 1340 firms, from the population have block-owners of 3-5%. It can be seen there are fewer firms with higher block-ownership.
Table 40 Block-Ownership Regression Results for Index Score

The results of this table show the results for the following regression model:

\[ \text{BLOCK}_{i,t} = \beta_0 + \beta_1 \text{INDEX}_{i,t} + \beta_2 \text{LOG}_\text{MKT_CAP}_{i,t} + \beta_3 \text{AVERAGE}_\text{TRADE}_\text{VOLUME}_{i,t} + \beta_4 \text{ROE}_{i,t} + \beta_5 \text{BETA}_{i,t} + \beta_6 \text{DEBT}_\text{Asset}_{i,t} + \beta_7 \text{DIV}_\text{YLD}_{i,t} + \beta_8 \text{PE}_{i,t} + \beta_9 \text{ROE}_{i,t} + e_{i,t} \]

Where Block is the block ownership at each of the levels, 3-5%, 5-10%, 10-20% and 20% and above. The regression is run with each of these ownership levels. The regression is run with each of these ownership levels, INDEX is the overall corporate governance score in relation to the index developed by Risk Metrics and have a range between 1 to 100, AVERAGE_TRADE_VOLUME _i,t_ average number of shares traded over the month divided by the shares in issue x 100, BETA_t is the market model beta calculated from daily returns measure over a year, IDORISK_t standard deviation of the market model residuals of daily returns measured over a year prior; MARKET_ADJ_RETURN_t returns on share for 1 year less risk free rate divided by beta for share; DEBT_ASSET_t total debt including long and short term divided by total assets x 100; DIV_YLD_t dividend per share/ last price; ROE_t net income available for common shareholders divided by average common equity for that year x 100; P_E_t Price of stock dividend by trailing EPS; PRICE_LOG_t is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
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<tr>
<th>Variables</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai</th>
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<th>Hayes &amp; Cai</th>
<th>Pooled OLS Regression</th>
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<td>0.041 **</td>
<td>0.0538 **</td>
<td>0.060 **</td>
<td>0.0792 ***</td>
<td>0.014 **</td>
<td>-0.0136</td>
<td>-0.032</td>
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<tr>
<td>(2.194)</td>
<td>(2.544) **</td>
<td>(2.227) **</td>
<td>(2.926) ***</td>
<td>(0.407) **</td>
<td>(0.374) ***</td>
<td>(0.370)</td>
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<td>LOG_MKT_CAP</td>
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<td>-2.2523 ***</td>
<td>-4.519 ***</td>
<td>-3.9414 ***</td>
<td>-0.320 ***</td>
<td>-0.8958</td>
<td>17.298 ***</td>
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<td>(6.026)</td>
<td>(5.909) ***</td>
<td>(6.708) ***</td>
<td>(6.610) ***</td>
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<td>(-1.149) ***</td>
<td>(5.344)</td>
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<td>AVERAGE_TRADE_VOLUME</td>
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<td>-0.3524 ***</td>
<td>-0.189 **</td>
<td>1.7481 *</td>
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<td>(2.776)</td>
<td>(1.220) **</td>
<td>(1.357) **</td>
<td>(0.416) **</td>
<td>(0.153) **</td>
<td>(0.076) **</td>
<td>(2.593)</td>
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<td>BETA</td>
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<td>-0.1731 ***</td>
<td>-1.916 *</td>
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<tr>
<td>(3.501)</td>
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<td>(0.093) **</td>
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<td>(-1.295) ***</td>
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<td>(1.238)</td>
<td>(1.070) **</td>
<td>(1.251) **</td>
<td>(0.934) **</td>
<td>(0.843) **</td>
<td>(1.876) **</td>
<td>(0.207)</td>
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<tr>
<td>MARKET_ADJ_RETURN</td>
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<td>-0.04 **</td>
<td>0.131 *</td>
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<td>-0.036</td>
<td>-0.0214</td>
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<tr>
<td>(0.348)</td>
<td>(-0.649)</td>
<td>(1.810)</td>
<td>(0.863) **</td>
<td>(0.490) **</td>
<td>(-0.335) **</td>
<td>(0.116)</td>
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<tr>
<td>DEBT_ASSET</td>
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<td>0.0058 **</td>
<td>0.000 **</td>
<td>0.0013 **</td>
<td>-0.020 **</td>
<td>-0.0163</td>
<td>0.020 **</td>
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<tr>
<td>(0.610)</td>
<td>(0.581) **</td>
<td>(-0.002) **</td>
<td>(0.088) **</td>
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<td>(0.000) **</td>
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<td>DIV_YLD</td>
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<td>-1.7511 **</td>
<td>-0.678 **</td>
<td>-0.615 **</td>
<td>-0.288 **</td>
<td>-0.388</td>
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<td>(-0.565) **</td>
<td>(-0.260) **</td>
<td>(-0.168) **</td>
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<td>PE</td>
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<td>0.0029 *</td>
<td>0.004</td>
<td>0.0039</td>
<td>0.003 **</td>
<td>0.0027 **</td>
<td>-0.033 **</td>
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<tr>
<td>(1.482)</td>
<td>(1.709)</td>
<td>(1.546)</td>
<td>(1.643) **</td>
<td>(0.877) **</td>
<td>(1.040) **</td>
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<td>ROE</td>
<td>0.650</td>
<td>0.7232 **</td>
<td>-1.129 **</td>
<td>-0.9728 ***</td>
<td>0.878 **</td>
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<td>(1.217)</td>
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<td>(0.941) **</td>
<td>(1.109) **</td>
<td>(-1.116)</td>
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<td>0.949 **</td>
<td>1.0954 ***</td>
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<td>(2.422)</td>
<td>(2.837) **</td>
<td>(1.142) **</td>
<td>(1.204) **</td>
<td>(3.892) **</td>
<td>(-3.939) **</td>
<td>(2.169) **</td>
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<td>Year Dummy</td>
<td>Yes</td>
<td>Yes No</td>
<td>Yes Yes</td>
<td>Yes No Yes</td>
<td>Yes</td>
<td>Yes Yes</td>
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<td>Yes Yes</td>
<td>Yes Yes</td>
<td>Yes Yes Yes</td>
<td>Yes</td>
<td>Yes Yes</td>
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<tr>
<td>Adjusted R2</td>
<td>0.055</td>
<td>0.058 **</td>
<td>0.092 **</td>
<td>0.0819</td>
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<td>1.071</td>
<td>1.088</td>
<td>1.553</td>
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</tr>
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</table>

**Table 40** Block-Ownership Regression Results for Index Score

Results for Block Ownership with Index Score
### Table 41 Block-Ownership results against Industry Score

The results of this table show the results for the following regression model:

\[ \beta_{it} = \beta_0 + \beta_1 \text{GOV}_I + \beta_2 \text{LOG}_MKT + \beta_3 \text{AVERAGE}_V + \beta_4 \text{DIV}_YLD + \beta_5 \text{DECL}_PER + \beta_6 \text{PRC}_T + \epsilon_{it} \]

Where Block is the block ownership at each of the levels, 3-5%, 5-10%, 10-20% and 20% and above. The regression is run with each of these ownership levels, INDUSTRY is the overall corporate governance score in relation to its’ industry developed by Risk Metrics and have a range between 1 to 100. AVERAGE_VOLUME \( i \) is average number of shares traded over the month divided by the shares in issue \( x \) 100. \( \text{DIV}_YLD \) is the market model beta calculated from daily returns measure over a year, \( \text{IDORISK} \) is standard deviation of the market model residuals of daily returns measured over a year prior; \( \text{MARKET}_R \) returns on share for 1 year less risk free rate divided by beta for share; \( \text{DEBT}_S \) total debt including long and short term divided by total assets \( x \) 100; \( \text{DIV}_YLD \) dividend per share/ last price; ROE is net income available for common shareholders divided by average common equity for that year \( x \) 100; \( \text{PE} \) is Price of stock dividend by trailing EPS; \( \text{PRICE}_L \) is the LOG of last share price at the. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th></th>
<th>Pooled OLS Regression 3 to 5%</th>
<th>Pooled OLS Regression 5 to 10%</th>
<th>Pooled OLS Regression 10% to 20%</th>
<th>Pooled OLS Regression 20% and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDUSTRY</td>
<td>0.032 (2.177)</td>
<td>0.061 (2.375)</td>
<td>0.019 (3.366)</td>
<td>0.006 (0.832)</td>
</tr>
<tr>
<td>H &amp; C</td>
<td>0.0391 (2.889)</td>
<td>0.0708 (2.891)</td>
<td>0.019 (0.688)</td>
<td>0.006 (0.228)</td>
</tr>
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<td>LOG_MKT_CAP</td>
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<td>-4.874 (1.62)</td>
<td>-7.648 (2.15)</td>
<td>-1.593 (0.578)</td>
</tr>
<tr>
<td>AVERAGE_VOLUME</td>
<td>2.190 (1.692)</td>
<td>1.373 (1.469)</td>
<td>-0.224 (0.271)</td>
<td>-1.159 (0.080)</td>
</tr>
<tr>
<td>BETA</td>
<td>1.812 (2.777)</td>
<td>-0.139 (0.863)</td>
<td>-0.3099 (0.471)</td>
<td>-1.338 (0.354)</td>
</tr>
<tr>
<td>IDORISK</td>
<td>-36.557 (0.934)</td>
<td>-43.176 (0.82)</td>
<td>23.942 (0.778)</td>
<td>-1.812 (0.961)</td>
</tr>
<tr>
<td>MARKET_RETURN</td>
<td>-0.016 (0.934)</td>
<td>0.126 (1.746)</td>
<td>-0.034 (0.863)</td>
<td>-0.0202 (0.347)</td>
</tr>
<tr>
<td>DEBT_ASSERT</td>
<td>0.010 (0.934)</td>
<td>-0.003 (1.746)</td>
<td>0.0004 (0.863)</td>
<td>-0.0194 (0.471)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-1.549 (2.234)</td>
<td>-1.012 (2.375)</td>
<td>1.001 (0.82)</td>
<td>-1.159 (0.578)</td>
</tr>
<tr>
<td>PE</td>
<td>0.003 (1.773)</td>
<td>0.004 (1.643)</td>
<td>0.002 (1.701)</td>
<td>0.000 (0.898)</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.664 (1.500)</td>
<td>-0.692 (0.789)</td>
<td>1.062 (1.154)</td>
<td>-0.7016 (1.199)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>1.188 (2.343)</td>
<td>1.339 (2.641)</td>
<td>-2.358 (1.687)</td>
<td>-3.826 (1.606)</td>
</tr>
<tr>
<td>F statistic</td>
<td>6.012 (2.641)</td>
<td>9.724 (1.687)</td>
<td>4.529 (1.606)</td>
<td>5.510 (1.606)</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.046 (0.043)</td>
<td>0.089 (0.072)</td>
<td>0.066 (0.069)</td>
<td>0.31</td>
</tr>
<tr>
<td>Observations</td>
<td>1340 (2.177)</td>
<td>1163 (2.177)</td>
<td>1163 (2.177)</td>
<td>1163 (2.177)</td>
</tr>
<tr>
<td>VIF</td>
<td>1.049 (2.889)</td>
<td>1.098 (2.891)</td>
<td>1.071 (0.688)</td>
<td>1.074 (0.228)</td>
</tr>
</tbody>
</table>

224
Table 42 shows the results for block-ownership for the logit regression, as the previous Tables 40 and 41 show the results assuming that the relationship is linear. The results are similar to the results for OLS regression, however, there is a positive correlation coefficient of 0.004*** for 10-20% for the INDEX.

When examining the control variables for the regression results for block ownership at ≥10% there is a negative significant relation with the natural log of the share price. Suggesting that these institutions are buying ‘cheap’ shares possibly undervalued. According to Boyson and Mooradian (2011), active hedge funds targeted firms with poor recent stock performance and often hedge funds sought change in corporate governance practices to (Boyson and Mooradian, 2011; Bratton, 2007; Klien and Zur, 2009). It could be that in that case institutions with larger shareholdings are indeed targeting poorly performing firms and plan to force change in corporate governance as a whole to help improve financial performance, thus this group of institutions would not actively tilt their portfolios to firms with good governance, as they would not be able to obtain these gains, if good corporate governance is already in place. This could be tested in further research.
Table 42 Block ownership results for the logit regression for the index

The results of this table show the results for the following regression model:

\[ BLOCK_{it} = \beta_0 + \beta_1 INDEX_{it} + \beta_2 LOG\_MKT\_CAP_{it} + \beta_3 AVERAGE\_TRADE\_VOLUME_{it} + \beta_4 BETA_{it} + \beta_5 IDORISK_{it} + \beta_6 MARKET\_ADJ\_RETURN_{it} + \beta_7 DEBT\_ASSET_{it} + \beta_8 DIV\_YLD_{it} + \beta_9 PE_{it} + \beta_10 ROE_{it} + \beta_11 PRICE\_LOG_{it} + \epsilon_{it} df \]

Where BLOCK\_DUMMY is the block ownership at each of the levels, 3-5%, 5-10%, 10-20% and 20% and above, is given a dummy variable for each regression, where for the 3-5% regression, all firms with ownership at 3-5% = 1 and firms without owners at 3-5% = 0 and this is the same for the other levels of ownership. The regression is run with each of these ownership levels, INDEX is the overall corporate governance score in relation to the index developed by Risk Metrics and have a range between 1 to 100, AVERAGE\_TRADE\_VOLUME \( t \) average number of shares traded over the month divided by the shares in issue \( x \) 100, BETA\( t \) is the market model beta calculated from daily returns measure over a year, IDORISK\( t \) standard deviation of the market model residuals of daily returns measured over a year prior,

MARKET\_ADJ\_RETURN\( t \) returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET\( t \) total debt including long and short term divided by total assets \( x \) 100; DIV\_YLD\( t \) dividend per share/ last price; ROE\( t \) net income available for common shareholders divided by average common equity for that year \( x \) 100; P\_E\( t \), Price of stock dividend by trailing EPS; PRICE\_LOG\( t \) is the LOG of last share price at t.

*** and ** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Logit Regression 3% to 5%</th>
<th>Logit Regression 5% to 10%</th>
<th>Logit Regression 10% to 20%</th>
<th>Logit Regression 20% and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDEX</td>
<td>0.004***</td>
<td>0.003***</td>
<td>0.004***</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(6.158)</td>
<td>(2.938)</td>
<td>(3.311)</td>
<td>(-0.958)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.035**</td>
<td>-0.147***</td>
<td>-0.151***</td>
<td>-0.045***</td>
</tr>
<tr>
<td></td>
<td>(-2.155)</td>
<td>(-6.688)</td>
<td>(-5.604)</td>
<td>(-3.191)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>0.000</td>
<td>0.089***</td>
<td>0.028</td>
<td>-0.045**</td>
</tr>
<tr>
<td></td>
<td>(-0.017)</td>
<td>(3.083)</td>
<td>(0.796)</td>
<td>(-2.439)</td>
</tr>
<tr>
<td>BETA</td>
<td>0.055**</td>
<td>0.081***</td>
<td>-0.048</td>
<td>0.017</td>
</tr>
<tr>
<td></td>
<td>(2.353)</td>
<td>(2.600)</td>
<td>(-1.260)</td>
<td>(0.827)</td>
</tr>
<tr>
<td>IDORISK</td>
<td>-0.443</td>
<td>-0.951</td>
<td>2.240*</td>
<td>0.589</td>
</tr>
<tr>
<td></td>
<td>(-0.537)</td>
<td>(-0.861)</td>
<td>(1.653)</td>
<td>(0.826)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.000</td>
<td>-0.001**</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.151)</td>
<td>(-2.108)</td>
<td>(0.863)</td>
<td>(-0.304)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(-1.089)</td>
<td>(-0.368)</td>
<td>(-0.048)</td>
<td>(1.187)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>0.001</td>
<td>0.004</td>
<td>-0.004</td>
<td>-0.004</td>
</tr>
<tr>
<td></td>
<td>(0.140)</td>
<td>(0.609)</td>
<td>(-0.447)</td>
<td>(-0.771)</td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(-0.607)</td>
<td>(-2.443)</td>
<td>(0.929)</td>
<td>(-1.112)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.000</td>
<td>0.002</td>
<td>-0.002</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(0.141)</td>
<td>(0.530)</td>
<td>(-0.411)</td>
<td>(-0.734)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.034*</td>
<td>0.011</td>
<td>-0.049</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>(1.661)</td>
<td>(0.412)</td>
<td>(-1.445)</td>
<td>(0.565)</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.050</td>
<td>0.096</td>
<td>0.079</td>
<td>0.02</td>
</tr>
<tr>
<td>Observations</td>
<td>1470</td>
<td>1470</td>
<td>1470</td>
<td>1470</td>
</tr>
<tr>
<td>F Statistic</td>
<td>4.849</td>
<td>8.785</td>
<td>7.328</td>
<td>2.832</td>
</tr>
<tr>
<td>VIF</td>
<td>1.052</td>
<td>1.106</td>
<td>1.086</td>
<td>1.025</td>
</tr>
</tbody>
</table>

Whereas, from the INDUSTRY again the 10-20% has a positive association at 0.003***, the 20% and above has a negative association with -0.001*** correlation coefficient.
### Table 43 Block-Ownership results against Industry Score

The results of this table show the results for the following regression model:

\[
BLOCK\_DUMMY_{it} = \beta_0 + \beta_{GOV\_INDUSTRY_{it}} + \beta_{LOG\_MKT\_CAP_{it}} + \beta_{AVERAGE\_TRADE\_VOLUME_{it}} + \beta_{BETA_{it}} + \beta_{IDORISK_{it}} + \beta_{MARKET\_ADI\_RETURN_{it}} + \beta_{DEBT\_ASSET_{it}} + \beta_{DIV\_YLD_{it}} + \beta_{ROE_{it}} + \beta_{PRICE\_LOG_{it}} + \epsilon_{it}\]

Where \(BLOCK\_DUMMY\) is the block ownership at each of the levels, 3-5%, 5-10%, 10-20% and 20% and above, is given a dummy variable for each regression, where for the 3-5% regression, all firms with ownership at 3-5% = 1 and firms without ownership at 3-5% = 0 and this is the same for the other levels of ownership. \(INDUSTRY\) is the overall corporate governance score in relation to its’ industry developed by Risk Metrics and have a range between 1 to 100, \(AVERAGE\_TRADE\_VOLUME\) is the average number of shares traded over the month divided by the shares in issue x 100, \(BETA\) is the market model beta calculated from daily returns measure over a year, \(IDORISK\) standard deviation of the market model residuals of daily returns measured over a year prior; \(MARKET\_ADI\_RETURN\) returns on share for 1 year less risk free rate divided by beta for share; \(DEBT\_ASSET\) is total debt including long and short term divided by total assets x 100; \(DIV\_YLD\) dividend per share/ last price; \(ROE\) net income available for common shareholders divided by average common equity for that year x 100; \(P\_E\) Price of stock dividend by trailing EPS; \(PRICE\_LOG\) is the LOG of last share price at t, ***, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the \(t\) statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Logit Regression 3% to 5%</th>
<th>Logit Regression 5% to 10%</th>
<th>Logit Regression 10% to 20%</th>
<th>Logit Regression 20% and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDUSTRY</td>
<td>0.004 ***</td>
<td>0.003 ***</td>
<td>0.003 ***</td>
<td>-0.001 **</td>
</tr>
<tr>
<td>(7.645)</td>
<td>(3.932)</td>
<td>(3.536)</td>
<td>-2.362</td>
<td></td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.048 ***</td>
<td>-0.156 ***</td>
<td>-0.161 ***</td>
<td>-0.023 *</td>
</tr>
<tr>
<td>(3.071)</td>
<td>(-7.458)</td>
<td>(-6.321)</td>
<td>-1.736</td>
<td></td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>0.012</td>
<td>0.104 ***</td>
<td>0.025 ***</td>
<td>-0.042 **</td>
</tr>
<tr>
<td>(0.559)</td>
<td>(3.623)</td>
<td>(0.716)</td>
<td>-2.275</td>
<td></td>
</tr>
<tr>
<td>BETA</td>
<td>0.019</td>
<td>0.049 *</td>
<td>-0.034</td>
<td>-0.002</td>
</tr>
<tr>
<td>(0.846)</td>
<td>(1.654)</td>
<td>(-0.935)</td>
<td>-0.081</td>
<td></td>
</tr>
<tr>
<td>IODRISK</td>
<td>-1.303</td>
<td>-1.444</td>
<td>2.270 *</td>
<td>0.571</td>
</tr>
<tr>
<td>(1.933)</td>
<td>(-3.121)</td>
<td>(1.702)</td>
<td>(0.810)</td>
<td></td>
</tr>
<tr>
<td>MARKET_ADI_RETURN</td>
<td>0.000</td>
<td>-0.001 **</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>(0.086)</td>
<td>(-2.155)</td>
<td>(0.868)</td>
<td>-0.373</td>
<td></td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>(0.000)</td>
<td>(0.118)</td>
<td>(-0.336)</td>
<td>(1.406)</td>
<td></td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>0.000</td>
<td>0.004</td>
<td>-0.004</td>
<td>-0.003</td>
</tr>
<tr>
<td>(0.080)</td>
<td>(0.611)</td>
<td>(-0.302)</td>
<td>(-0.721)</td>
<td></td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>0.000 **</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>(0.380)</td>
<td>(2.093)</td>
<td>(0.773)</td>
<td>-1.072</td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>0.001</td>
<td>0.002</td>
<td>-0.002</td>
<td>-0.002</td>
</tr>
<tr>
<td>(0.213)</td>
<td>(0.496)</td>
<td>(-0.378)</td>
<td>(-0.793)</td>
<td></td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.024</td>
<td>-0.001</td>
<td>-0.033</td>
<td>0.000</td>
</tr>
<tr>
<td>(1.206)</td>
<td>(-0.036)</td>
<td>(-0.998)</td>
<td>(-0.004)</td>
<td></td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.034</td>
<td>0.085</td>
<td>0.078</td>
<td>0.01</td>
</tr>
<tr>
<td>Observations</td>
<td>1470</td>
<td>1470</td>
<td>1470</td>
<td>1470</td>
</tr>
<tr>
<td>F Statistic</td>
<td>5.230</td>
<td>11.998</td>
<td>11.039</td>
<td>2.693</td>
</tr>
<tr>
<td>VIF</td>
<td>1.036</td>
<td>1.092</td>
<td>1.084</td>
<td>1.014</td>
</tr>
</tbody>
</table>

### 8.4.2 Robustness checks

To help establish if the relationship suffered from endogeneity issues, a fixed firm effect is introduced into the logit regressions. The results in Tables 44 and 45 show that the only the results for the 3-5% remained significant with the INDEX showing correlations coefficients of 0.002** and INDUSTRY of 0.001*. 
### Table 44 Results for Block Ownership Logit Regression with Fixed Effects for the Index

The results of this table show the results for the following regression model:

\[
BLOCK\_DUMMY_{it} = \beta_0 + \beta_1INDEX_{it} + \beta_2\log\_MKT\_CAP_{it} + \beta_3AVERAGE\_TRADE\_VOLUME_{it} + \beta_4BETA_{it} + \beta_5IDORISK_{it} \\
+ \beta_6MARKET\_ADJ\_RETURN_{it} + \beta_7DEBT\_ASSET_{it} + \beta_8DIV\_YLD_{it} + \beta_9PE_{it} + \beta_{10}ROE_{it} \\
+ \beta_{11}PRICE\_LOG_{it} + \beta_{12}FIXED\_EFFECTS_{it}
\]

Where BLOCK\_DUMMY is the block ownership at each of the levels, 3-5%, 5-10%, 10-20% and 20% and above, is given a dummy variable for each regression, where for the 3-5% regression, all firms with ownership at 3-5% = 1 and firms without owners at 3-5% = 0 and this is the same for the other levels of ownership, AUDIT\_SCORE is the Audit score developed by Risk Metrics and have a range between 1 to 5, AVERAGE\_TRADE\_VOLUME \_it average number of shares traded over the month divided by the shares in issue x 100, BETA, is the market model beta calculated from daily returns measure over a year, IDORISK, standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN, returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET \_it total debt including long and short term divided by total assets x 100; DVD\_YLD.divide per share/ last price; ROE,t net income available for common shareholders divided by average common equity for that year x 100; P\_B \_it Price of stock dividend by trailing EPS; PRICE\_LOG_{it} is the LOG of last share price at t. *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Logit Fixed Firm Effect 3% to 5%</th>
<th>Logit Fixed Firm Effect 5% to 10%</th>
<th>Logit Fixed Firm Effect 10% to 20%</th>
<th>Logit Fixed Firm Effect 20% and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDEX</td>
<td>0.002 **</td>
<td>0.001</td>
<td>0.000</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>(2.322)</td>
<td>(0.954)</td>
<td>(0.078)</td>
<td>(0.890)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.048</td>
<td>0.078</td>
<td>-0.136</td>
<td>-0.162 ***</td>
</tr>
<tr>
<td></td>
<td>(-0.629)</td>
<td>(0.711)</td>
<td>(-1.109)</td>
<td>(-2.582)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>0.030</td>
<td>0.093 **</td>
<td>0.010</td>
<td>0.022</td>
</tr>
<tr>
<td></td>
<td>(1.123)</td>
<td>(2.459)</td>
<td>(0.229)</td>
<td>(-0.006)</td>
</tr>
<tr>
<td>BETA</td>
<td>0.064 *</td>
<td>-0.016</td>
<td>-0.045</td>
<td>0.061 **</td>
</tr>
<tr>
<td></td>
<td>(1.931)</td>
<td>(-0.334)</td>
<td>(-0.853)</td>
<td>(2.263)</td>
</tr>
<tr>
<td>IDORISK</td>
<td>-2.243 **</td>
<td>-1.075</td>
<td>0.491</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>(-2.502)</td>
<td>(-0.843)</td>
<td>(0.342)</td>
<td>(0.002)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.000</td>
<td>-0.001 **</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(-0.030)</td>
<td>(2.417)</td>
<td>(0.035)</td>
<td>(0.337)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.000</td>
<td>0.000</td>
<td>0.001</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(0.239)</td>
<td>(0.325)</td>
<td>(0.977)</td>
<td>(-1.461)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-0.001</td>
<td>0.000</td>
<td>0.000</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(-0.124)</td>
<td>(-0.011)</td>
<td>(0.004)</td>
<td>(-0.413)</td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>0.000 **</td>
<td>0.000</td>
<td>0.000 ***</td>
</tr>
<tr>
<td></td>
<td>(-0.857)</td>
<td>(-2.302)</td>
<td>(1.478)</td>
<td>(-3.604)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.001</td>
<td>0.006</td>
<td>0.002</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(0.463)</td>
<td>(1.430)</td>
<td>(0.378)</td>
<td>(-0.564)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.024</td>
<td>-0.012</td>
<td>-0.020</td>
<td>0.124 **</td>
</tr>
<tr>
<td></td>
<td>(0.359)</td>
<td>(-0.122)</td>
<td>(-0.181)</td>
<td>(2.235)</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.311</td>
<td>0.263</td>
<td>0.368</td>
<td>0.36</td>
</tr>
<tr>
<td>Observations</td>
<td>1470</td>
<td>1470</td>
<td>1470</td>
<td>1470</td>
</tr>
<tr>
<td>F Statistic</td>
<td>2.489</td>
<td>2.169</td>
<td>2.918</td>
<td>2.887</td>
</tr>
<tr>
<td>VIF</td>
<td>1.452</td>
<td>1.358</td>
<td>1.582</td>
<td>1.572</td>
</tr>
</tbody>
</table>
Where BLOCK_DUMMY is the block ownership at each of the levels, 3-5%, 5-10%, 10-20% and 20% and above, is given a dummy variable for each regression, where for the 3-5% regression, all firms with ownership at 3-5% = 1 and firms without owners at 3-5% = 0 and this is the same for the other levels of ownership. INDUSTRY is the overall corporate governance score in relation to its' industry developed by Risk Metrics and have a range between 1 to 100, AVERAGE_TRADE_VOLUME is the average number of shares traded over the month divided by the shares in issue x 100, BETA is the market model beta calculated from daily returns measured over a year, IDORISK is the standard deviation of the market model residuals of daily returns measured over a year prior, MARKET_ADJ_RETURN returns on share for 1 year less risk free rate divided by beta for share; DEBT_ASSET variable for each regression, where for the 3-5% group, whilst the two groups in-between 5-10 and 10-20% has a negative association, but are not significant. This is also consistent with the findings from the board score presented in Table 31 in chapter 7 section 7.4.4.1. These results suggest that the investors are more sensitive to beta in these groups, where they choose to invest in firms with higher betas, 

Table 45 Results for Block Ownership Logit Regression with Fixed Effects for the Industry

<table>
<thead>
<tr>
<th>Table 45</th>
<th>Logit with Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fixed Firm Effect</td>
</tr>
<tr>
<td>Variables</td>
<td>3% to 5%</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>0.001 *</td>
</tr>
<tr>
<td>(1.028)</td>
<td>(1.091)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.054</td>
</tr>
<tr>
<td>(-0.702)</td>
<td>(0.653)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>0.030</td>
</tr>
<tr>
<td>(1.134)</td>
<td>(2.304)</td>
</tr>
<tr>
<td>BETA</td>
<td>0.066 **</td>
</tr>
<tr>
<td>(2.000)</td>
<td>(-0.296)</td>
</tr>
<tr>
<td>IDORISK</td>
<td>2.355 ***</td>
</tr>
<tr>
<td>(-2.631)</td>
<td>(-0.882)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.000</td>
</tr>
<tr>
<td>(0.082)</td>
<td>(-2.568)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.000</td>
</tr>
<tr>
<td>(0.222)</td>
<td>(0.170)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-0.001</td>
</tr>
<tr>
<td>(-0.131)</td>
<td>(-0.027)</td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
</tr>
<tr>
<td>(-0.843)</td>
<td>(-2.393)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.001</td>
</tr>
<tr>
<td>(0.376)</td>
<td>(1.431)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>-0.025</td>
</tr>
<tr>
<td>(0.366)</td>
<td>(-0.038)</td>
</tr>
<tr>
<td>Year Dummy Yes Yes Yes Yes</td>
<td></td>
</tr>
<tr>
<td>Industry Dummy No No No No</td>
<td></td>
</tr>
<tr>
<td>Adjusted R2 0.309 0.264 0.368 0.36</td>
<td></td>
</tr>
<tr>
<td>observations 1470 1470 1470 1470</td>
<td></td>
</tr>
<tr>
<td>F Statistic 2.477 2.180 2.918 2.886</td>
<td></td>
</tr>
<tr>
<td>VIF 1.448 1.358 1.582 1.572</td>
<td></td>
</tr>
</tbody>
</table>

The results show a change in association for beta across the ownership groups, with the INDEX showing 0.064* for the 3-5% level and 0.061** for 20% and above group. This is consistent with the INDUSTRY showing 0.066** for 3-5% and 0.062** for the 20% above group, whilst the two groups in-between 5-10 and 10-20% has a negative association, but are not significant. This is also consistent with the findings from the board score presented in Table 31 in chapter 7 section 7.4.4.1. These results suggest that the investors are more sensitive to beta in these groups, where they choose to invest in firms with higher betas,
suggesting the institutions prefer firms with higher systematic risk. There is more of a
(correlation between the board score and INDEX and INDUSRTY than any other of the
measures for corporate governance (see correlation in Table 8, chapter 7 section 7.1).

Overall the results presented in this section show that there is a difference in association at
different block-ownership levels. Thus, the hypothesis H4b “Where block-ownership is
greater there will be less association between institutional ownership and the overall
corporate governance” is accepted as only investments at 3-5% proved significant in each
regression mode.

8.5 Time Period Differences
This section is examining the changes in association over the time frame. The tables 46 and
47 shows the results for the regression in the following time periods; pre-crisis 2006-7, crisis
2008 and post crisis 2009-10. The number of companies reduced over the time frame, as
fewer companies are listed on the FTSE All Share index.
Table 46: The Regression Results for Different Time Frames for the Index

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai</th>
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</thead>
<tbody>
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<td>Pre Crisis</td>
<td>Crisis</td>
<td>Pre Crisis</td>
<td>Crisis</td>
<td>Pre Crisis</td>
<td>Crisis</td>
</tr>
<tr>
<td>INDEX</td>
<td>0.194</td>
<td>0.217</td>
<td>0.2566</td>
<td>0.354</td>
<td>0.393</td>
<td>0.339</td>
</tr>
<tr>
<td>(2.734)</td>
<td>(2.253)</td>
<td>(2.582)</td>
<td>(5.315)</td>
<td>(4.585)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7.774)</td>
<td>(8.017)</td>
<td>(5.640)</td>
<td>(7.491)</td>
<td>(8.682)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>6.069</td>
<td>-0.381</td>
<td>0.0841</td>
<td>-2.381</td>
<td>-0.780</td>
<td>0.962</td>
</tr>
<tr>
<td>(2.457)</td>
<td>(2.505)</td>
<td>(0.022)</td>
<td>(0.702)</td>
<td>(0.1442)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BETA</td>
<td>-3.433</td>
<td>4.144</td>
<td>2.4663</td>
<td>6.781</td>
<td>4.3757</td>
<td>*</td>
</tr>
<tr>
<td>(1.441)</td>
<td>(1.555)</td>
<td>(1.066)</td>
<td>(3.148)</td>
<td>(1.902)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IODRISK</td>
<td>104.495</td>
<td>-121.795</td>
<td>47.222</td>
<td>-2.2311</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(0.905)</td>
<td>(0.767)</td>
<td>(0.523)</td>
<td>(0.580)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.869</td>
<td>-0.326</td>
<td>-0.226</td>
<td>-0.2121</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2.491)</td>
<td>(0.571)</td>
<td>(0.675)</td>
<td>(-1.780)</td>
<td>(-2.125)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.035</td>
<td>-0.052</td>
<td>-0.052</td>
<td>-0.022</td>
<td>-0.0142</td>
<td></td>
</tr>
<tr>
<td>(0.923)</td>
<td>(1.380)</td>
<td>(0.986)</td>
<td>(0.630)</td>
<td>(0.000)</td>
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<td>DIV_YLD</td>
<td>-12.155</td>
<td>-2.415</td>
<td>-3.0955</td>
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<td></td>
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<tr>
<td>(2.098)</td>
<td>(2.120)</td>
<td>(2.505)</td>
<td>(1.495)</td>
<td>(2.451)</td>
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<tr>
<td>PE</td>
<td>0.007</td>
<td>0.022</td>
<td>0.0248</td>
<td>0.010</td>
<td>0.0109</td>
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<tr>
<td>(1.022)</td>
<td>(0.909)</td>
<td>(1.210)</td>
<td>(2.145)</td>
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<td></td>
</tr>
<tr>
<td>ROE</td>
<td>-0.118</td>
<td>0.0106</td>
<td>1.082</td>
<td>0.5714</td>
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<tr>
<td>(0.049)</td>
<td>(0.492)</td>
<td>(1.198)</td>
<td>(0.434)</td>
<td>(0.280)</td>
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<td></td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>2.303</td>
<td>-3.717</td>
<td>-2.7277</td>
<td>1.8567</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1.024)</td>
<td>(0.661)</td>
<td>(1.249)</td>
<td>(0.746)</td>
<td>(0.842)</td>
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<td></td>
</tr>
<tr>
<td>Year Dummy</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.162</td>
<td>0.175</td>
<td>0.234</td>
<td>0.2553</td>
<td>0.215</td>
<td>0.205</td>
</tr>
<tr>
<td>Observations</td>
<td>624</td>
<td>624</td>
<td>284</td>
<td>562</td>
<td>562</td>
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</tr>
<tr>
<td>F statistic</td>
<td>7.714</td>
<td>14.0204</td>
<td>5.832</td>
<td>10.5041</td>
<td>8.684</td>
<td>15.8116</td>
</tr>
<tr>
<td>VIF</td>
<td>1.194</td>
<td>1.211</td>
<td>1.306</td>
<td>1.343</td>
<td>1.274</td>
<td>**</td>
</tr>
</tbody>
</table>

The results of this table show the results for the following regression model:

$$\text{OWN\_PERIOD}_{i,t} = \beta_0 + \beta_1\text{INDEX}_{i,t} + \beta_2\text{LOG\_MKT\_CAP}_{i,t} + \beta_3\text{AVERAGE\_TRADE\_VOLUME}_{i,t} + \beta_4\text{BETA}_{i,t} + \beta_5\text{IODRISK}_{i,t} + \beta_6\text{MARKET\_ADJ\_RETURN}_{i,t} + \beta_7\text{DEBT\_ASSET}_{i,t} + \beta_8\text{DIV\_YLD}_{i,t} + \beta_9\text{PRICE\_LOG}_{i,t} + \epsilon_{i,t}$$

Where OWN\_PERIOD, is the percentage ownership by institutional investors during the following periods; Pre-Crisis (2006-07) Crisis (2008) and Post-Crisis (2009-10). The regression is run with each of these ownership levels, INDEX is the overall corporate governance score developed by Risk Metrics and have a range between 1 to 100; AVERAGE\_TRADE\_VOLUME, t average number of shares traded over the month divided by the shares in issue x 100; BETA, t is the market model beta calculated from daily returns measure over a year; IDORISK, t standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN, t returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET, t total debt including long and short term divided by total assets x 100; DIV\_YLD, t dividend per share/ last price; ROE, t net income available for common shareholders divided by average common equity for that year x 100; P\_E, t Price of stock dividend by trailing EPS; PRICE\_LOG, t is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.
### Table 47 Regression Results for Different Time Frames for Industry Score

The results of this table show the results for the following regression model:

\[ \text{OWN}_\text{PERIOD}_{i,t} = \beta_0 + \beta_1 \text{INDUSTRY}_{i,t} + \beta_2 \text{LOG}_\text{MKT}_\text{CAP}_{i,t} + \beta_3 \text{AVERAGE}_\text{TRADE}_\text{VOLUME}_{i,t} + \beta_4 \text{PRICE}_\text{LOG}_{i,t} + \epsilon_{i,t} \]

Where \( \text{OWN}_\text{PERIOD} \) is the percentage ownership by institutional investors during the following periods; Pre-Crisis (2006-07) Crisis (2008) and Post-Crisis (2009-10). The regression is run with each of these ownership levels, \( \text{INDUSTRY} \) is the overall corporate governance score developed by Risk Metrics and have a range between 1 to 100, \( \text{AVERAGE}_\text{TRADE}_\text{VOLUME} \) \( i,t \) average number of shares traded over the month divided by the shares in issue \( x \) 100, \( \text{PRICE}_\text{LOG} \) \( i,t \) is the market model beta calculated from daily returns measured over a year, \( \text{MARKET}_\text{ADJ}_\text{RETURN} \) \( i,t \) returns on share for 1 year less risk free rate divided by beta for share; \( \text{DEBT}_\text{ASSET} \) \( i,t \) total debt including long and short term divided by total assets \( x \) 100; \( \text{DIV}_\text{YLD} \) \( i,t \) dividend per share/ last price; \( \text{ROE} \) \( i,t \) net income available for common shareholders divided by average common equity. For the year \( x \) 100, \( \text{P}_E \) \( i,t \) Price of stock dividend by trailing EPS; \( \text{PRICE}_\text{LOG} \) \( i,t \) is the LOG of last share price at \( t \), **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai</th>
<th>Pooled OLS Regression</th>
<th>Hayes &amp; Cai</th>
<th>Hayes &amp; Cai</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Crisis</td>
<td>Pre-Crisis</td>
<td>Crisis</td>
<td>Crisis</td>
<td>Post Crisis</td>
<td>Post Crisis</td>
<td>Post Crisis</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>0.108 **</td>
<td>0.1053 *</td>
<td>0.209 ***</td>
<td>0.2092 **</td>
<td>0.310 ***</td>
<td>0.3092 ***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.026)</td>
<td>(1.825)</td>
<td>(2.766)</td>
<td>(2.372)</td>
<td>(5.869)</td>
<td>(4.871)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-7.140)</td>
<td>(-7.973)</td>
<td>(-5.787)</td>
<td>(-5.721)</td>
<td>(-7.634)</td>
<td>(-8.505)</td>
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</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>6.587 ***</td>
<td>6.6092 ***</td>
<td>0.410</td>
<td>0.4097</td>
<td>0.246</td>
<td>0.6895</td>
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</tr>
<tr>
<td></td>
<td>(2.752)</td>
<td>(2.670)</td>
<td>(0.112)</td>
<td>(0.107)</td>
<td>(0.081)</td>
<td>(0.817)</td>
<td></td>
</tr>
<tr>
<td>BETA</td>
<td>-3.581</td>
<td>-3.4781</td>
<td>2.324</td>
<td>2.3236</td>
<td>3.985 *</td>
<td>4.1016 *</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-1.591)</td>
<td>(-1.498)</td>
<td>(0.623)</td>
<td>(0.683)</td>
<td>(1.916)</td>
<td>(1.830)</td>
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<tr>
<td></td>
<td>(0.722)</td>
<td>(0.514)</td>
<td>(0.475)</td>
<td>(0.452)</td>
<td>(0.025)</td>
<td>(0.154)</td>
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<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.749 **</td>
<td>0.7517</td>
<td>-0.358</td>
<td>-0.3582</td>
<td>-0.177</td>
<td>-0.1768 *</td>
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<td></td>
<td>(2.178)</td>
<td>(0.580)</td>
<td>(-0.697)</td>
<td>(-0.797)</td>
<td>(-1.374)</td>
<td>(-1.739)</td>
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</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.046</td>
<td>-0.0471</td>
<td>-0.038</td>
<td>-0.0382</td>
<td>-0.007</td>
<td>-0.0039</td>
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<tr>
<td></td>
<td>(-1.328)</td>
<td>(-1.187)</td>
<td>(-0.772)</td>
<td>(-0.725)</td>
<td>(-0.218)</td>
<td>(-0.000)</td>
<td></td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-11.806 ***</td>
<td>-11.6703 *</td>
<td>-0.457</td>
<td>-0.4573</td>
<td>-2.896</td>
<td>-2.8304</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-2.847)</td>
<td>(-1.680)</td>
<td>(-0.121)</td>
<td>(-0.038)</td>
<td>(-0.935)</td>
<td>(-0.325)</td>
<td></td>
</tr>
<tr>
<td>PE</td>
<td>-0.007</td>
<td>-0.0065 **</td>
<td>0.025 **</td>
<td>0.025</td>
<td>0.0099 **</td>
<td>0.0099 **</td>
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</tr>
<tr>
<td></td>
<td>(-1.044)</td>
<td>(-0.819)</td>
<td>(2.179)</td>
<td>(2.559)</td>
<td>(1.560)</td>
<td>(2.190)</td>
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<td>0.7774</td>
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<tr>
<td></td>
<td>(-0.357)</td>
<td>(-0.423)</td>
<td>(-1.309)</td>
<td>(-1.151)</td>
<td>(0.901)</td>
<td>(0.381)</td>
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<td>PRICE_LOG</td>
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<td>-2.559</td>
<td>-0.076</td>
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<td></td>
<td>(0.840)</td>
<td>(0.692)</td>
<td>(-0.898)</td>
<td>(-0.710)</td>
<td>(-0.857)</td>
<td>(0.704)</td>
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</tr>
<tr>
<td>Year Dummy</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Industry Dummy</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Adjusted R2</td>
<td>0.155</td>
<td>0.171</td>
<td>0.226</td>
<td>0.2558</td>
<td>0.187</td>
<td>0.2035</td>
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<td>624</td>
<td>284</td>
<td>284</td>
<td>562</td>
<td>562</td>
<td></td>
</tr>
<tr>
<td>VIF</td>
<td>1.204</td>
<td>1.206</td>
<td>1.344</td>
<td>1.344</td>
<td>1.257 **</td>
<td>1.255 **</td>
<td></td>
</tr>
</tbody>
</table>
8.5.2 Robustness checks
The results shown in table 48 are consistent with the findings in the Table 46, as the time interactive time dummy correlation coefficient is -0.161** for the OLS regression for the INDEX and for the INDUSTRY it is -0.148**. Given that before the crisis is a 1 and after the crisis is 0 if there is a difference in the preference before and after the crisis, it would be expected that there would be a negative significant association. As it suggests the institutional owners became more sensitive to the corporate governance after the financial crisis. To add to the robustness of these results a fixed firm effect is introduced and the interactive time dummy correlation coefficient is -0.036 for the INDEX and -0.088* for the INDUSTRY, suggesting that the is a shift in attitude for institutional investors for the INDUSTRY, but not for the INDEX.
TABLE 48 RESULTS FOR TIME FRAME WITH INDEX WITH THE USE OF INTERACTION DUMMY AND FIXED FIRM EFFECT

Table 48
Results for Time Frame with INDUSTRY with the use of interaction dummy and fixed firm effect

The results of this table show the results for the following regression model:

\[ \text{INSTOWN}_{it} = \beta_0 + \beta_1 \text{INDEX}_{it} + \beta_2 \text{Time\_Dummy}_{it} + \beta_3 (\text{INDEX}_{it} \times \text{Time\_Dummy}_{it}) + \beta_4 \text{LOG\_MKT\_CAP}_{it} \]

\[ + \beta_5 \text{AVG\_TRADE\_VOLUME}_{it} + \beta_6 \text{BETA}_{it} + \beta_7 \text{IORDRISK}_{it} + \beta_8 \text{MARKET\_ADJ\_RETURN}_{it} \]

\[ + \beta_9 \text{DEBT\_ASSET}_{it} + \beta_{10} \text{DIV\_YLD}_{it} + \beta_{11} \text{PE}_{it} + \beta_{12} \text{ROE}_{it} + \beta_{13} \text{PRICE\_LOG}_{it} + \epsilon_{it} \]

\[ \text{INSTOWN}_{it} = \beta_0 + \beta_1 \text{INDEX}_{it} + \beta_2 \text{Time\_Dummy}_{it} + \beta_3 (\text{INDEX}_{it} \times \text{Time\_Dummy}_{it}) + \beta_4 \text{LOG\_MKT\_CAP}_{it} \]

\[ + \beta_5 \text{AVG\_TRADE\_VOLUME}_{it} + \beta_6 \text{BETA}_{it} + \beta_7 \text{IORDRISK}_{it} + \beta_8 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_9 \text{DEBT\_ASSET}_{it} \]

\[ + \beta_{10} \text{DIV\_YLD}_{it} + \beta_{11} \text{PE}_{it} + \beta_{12} \text{ROE}_{it} + \beta_{13} \text{PRICE\_LOG}_{it} + \beta_{14} \text{FIXED\_EFFECT}_{it} + \epsilon_{it} \]

Where INST\_OWN is the percentage ownership by institutional investors. The regression is run with each of these ownership levels, INDEX is the overall corporate governance score developed by Risk Metrics and have a range between 1 to 100, Time\_Dummy is a dummy variable for before and after the financial crisis where 1 represent the period before the crisis (2005-2006) and 0 is after the crisis (2007-2010); Interactive\_Dummy\_Audit is Time\_Dummy x AUDIT\_SCORE; AVERAGE\_TRADE\_VOLUME is average number of shares traded over the month divided by the shares in issue x 100, BETA\_t is the market model beta calculated from daily returns measure over a year, IORDRISK\_t standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN\_t returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET\_t total debt including long and short term divided by total assets x 100; DIV\_YLD\_t dividend per share/ last price; ROE\_t net income available for common shareholders divided by average common equity for that year x 100; P\_E\_t Price of stock dividend by trailing EPS; PRICE\_LOG\_t is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS Regression</th>
<th>Fixed Firm Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDEX</td>
<td>0.253</td>
<td>0.079</td>
</tr>
<tr>
<td></td>
<td>(4.742)</td>
<td>(1.404)</td>
</tr>
<tr>
<td>Time_Dummy</td>
<td>11.076</td>
<td>-0.645</td>
</tr>
<tr>
<td></td>
<td>(1.730)</td>
<td>(-0.119)</td>
</tr>
<tr>
<td>Interactive_Dummy_Index</td>
<td>-0.161</td>
<td>0.036</td>
</tr>
<tr>
<td></td>
<td>(-2.126)</td>
<td>(-0.557)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-11.137</td>
<td>-10.866</td>
</tr>
<tr>
<td></td>
<td>(-11.754)</td>
<td>(-3.108)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>3.504</td>
<td>0.905</td>
</tr>
<tr>
<td></td>
<td>(3.022)</td>
<td>(0.892)</td>
</tr>
<tr>
<td>BETA</td>
<td>1.874</td>
<td>1.071</td>
</tr>
<tr>
<td></td>
<td>(1.382)</td>
<td>(0.729)</td>
</tr>
<tr>
<td>IORDRISK</td>
<td>-36.539</td>
<td>-13.431</td>
</tr>
<tr>
<td></td>
<td>(-0.900)</td>
<td>(-0.400)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.015</td>
<td>-0.028</td>
</tr>
<tr>
<td></td>
<td>(-1.046)</td>
<td>(-2.596)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.015</td>
<td>-0.029</td>
</tr>
<tr>
<td></td>
<td>(0.995)</td>
<td>(-0.813)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>0.372</td>
<td>0.075</td>
</tr>
<tr>
<td></td>
<td>(1.174)</td>
<td>(0.271)</td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(-0.002)</td>
<td>(-0.023)</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.310</td>
<td>0.057</td>
</tr>
<tr>
<td></td>
<td>(-1.802)</td>
<td>(0.449)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>-0.310</td>
<td>7.163</td>
</tr>
<tr>
<td></td>
<td>(-0.533)</td>
<td>(3.212)</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.176</td>
<td>0.647</td>
</tr>
<tr>
<td>Observations</td>
<td>1470</td>
<td>1470</td>
</tr>
<tr>
<td>F Statistic</td>
<td>16.651</td>
<td>7.021</td>
</tr>
<tr>
<td>VIF</td>
<td>1.214</td>
<td>2.829</td>
</tr>
</tbody>
</table>
**Table 49 Results for Time Frame with INDUSTRY with the use of interaction dummy and fixed firm effect**

The results of this table show the results for the following regression model:

\[
INST\_OWN_{it} = \beta_0 + \beta_1 \text{AUDIT}_{it} + \beta_2 \text{Time\_Dummy}_{it} + \beta_3 (\text{AUDIT}_{it} \times \text{Time\_Dummy}_{it}) + \beta_4 \text{LOG\_MKT\_CAP}_{it} + \\
\beta_5 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_6 \text{BETA}_{it} + \beta_7 \text{IODRISK}_{it} + \beta_8 \text{MARKET\_ADJ\_RETURN}_{it} + \\
\beta_9 \text{DEBT\_ASSET}_{it} + \beta_{10} \text{DIV\_YLD}_{it} + \beta_{11} \text{PE}_{it} + \beta_{12} \text{ROE}_{it} + \beta_{13} \text{PRICE\_LOG}_{it} + \epsilon_{it}
\]

\[
INST\_OWN_{it} = \beta_0 + \beta_1 \text{AUDIT}_{it} + \beta_2 \text{Time\_Dummy}_{it} + \beta_3 (\text{AUDIT}_{it} \times \text{Time\_Dummy}_{it}) + \beta_4 \text{LOG\_MKT\_CAP}_{it} + \\
\beta_5 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_6 \text{BETA}_{it} + \beta_7 \text{IODRISK}_{it} + \beta_8 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_9 \text{DEBT\_ASSET}_{it} + \\
\beta_{10} \text{DIV\_YLD}_{it} + \beta_{11} \text{PE}_{it} + \beta_{12} \text{ROE}_{it} + \beta_{13} \text{PRICE\_LOG}_{it} + \beta_{14} \text{FIXED\_EFFECT}_{it} + \epsilon_{it}
\]

Where \(\text{INST\_OWN}_{it}\) is the percentage ownership by institutional investors. The regression is run with each of these ownership levels, \(\text{INDUSTRY}\) is the overall corporate governance score developed by Risk Metrics and have a range between 1 to 100, \(\text{Time\_Dummy}\), is a dummy variable for before and after the financial crisis where 1 represent the period before the crisis (2005-2006) and 0 is after the crisis (2007-2010); \(\text{Interactive\_Dummy\_Industry}\) is Time\_Dummy \times AUDIT\_SCORE; \(\text{AVERAGE\_TRADE\_VOLUME}\) \(t\) average number of shares traded over the month divided by the shares in issue \(t\) x 100; \(\text{MARKET\_ADJ\_RETURN}\) \(t\) returns on share for 1 year less risk free rate divided by beta for share; \(\text{DEBT\_ASSET}\) \(t\) total debt including long and short term divided by total assets \(t\) x 100; \(\text{DIV\_YLD}\) \(t\) is the dividend per share/ last price; \(\text{ROE}\) \(t\) net income available for common shareholders divided by average common equity for that year \(t\); \(\text{PRICE\_LOG}\) \(t\) is the LOG of last share price at \(t\); \*, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS Regression</th>
<th>Fixed Firm Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDUSTRY</td>
<td>0.226 ***</td>
<td>0.118 **</td>
</tr>
<tr>
<td></td>
<td>(5.120)</td>
<td>(2.567)</td>
</tr>
<tr>
<td>Time_Dummy</td>
<td>9.588 *</td>
<td>3.634</td>
</tr>
<tr>
<td></td>
<td>(1.824)</td>
<td>(0.840)</td>
</tr>
<tr>
<td>Interactive_Dummy_Industry</td>
<td>-0.148 **</td>
<td>-0.088 *</td>
</tr>
<tr>
<td></td>
<td>(-2.355)</td>
<td>(-1.710)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-11.138 ***</td>
<td>-10.793 ***</td>
</tr>
<tr>
<td></td>
<td>(-11.776)</td>
<td>(-3.095)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>3.436 ***</td>
<td>0.897</td>
</tr>
<tr>
<td></td>
<td>(2.966)</td>
<td>(0.888)</td>
</tr>
<tr>
<td>BETA</td>
<td>1.710</td>
<td>1.042</td>
</tr>
<tr>
<td></td>
<td>(1.261)</td>
<td>(0.712)</td>
</tr>
<tr>
<td>IODRISK</td>
<td>-35.020</td>
<td>-12.895</td>
</tr>
<tr>
<td></td>
<td>(-0.865)</td>
<td>(-0.386)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.017</td>
<td>-0.028 ***</td>
</tr>
<tr>
<td></td>
<td>(-1.124)</td>
<td>(-2.612)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.017</td>
<td>-0.027</td>
</tr>
<tr>
<td></td>
<td>(1.030)</td>
<td>(-0.776)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>0.371</td>
<td>0.084</td>
</tr>
<tr>
<td></td>
<td>(1.174)</td>
<td>(0.304)</td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.047)</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.321 *</td>
<td>0.045</td>
</tr>
<tr>
<td></td>
<td>(-1.876)</td>
<td>(0.356)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>-0.321</td>
<td>7.019</td>
</tr>
<tr>
<td></td>
<td>(-0.516)</td>
<td>(2.280)</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.178</td>
<td>0.648</td>
</tr>
<tr>
<td>Observations</td>
<td>1470</td>
<td>1470</td>
</tr>
<tr>
<td>F Statistic</td>
<td>16.855</td>
<td>7.058</td>
</tr>
<tr>
<td>VIF</td>
<td>1.217</td>
<td>2.841</td>
</tr>
</tbody>
</table>
From reviewing the results in Table 48 the regressions over the financial crisis there is clearly not enough evidence to suggest that there has been a change in preference, as both before, during and after the crisis the association is shown to be significant. However, the results in Tables 48 and 49 showed that significance has improved and the line of the slope has increased, suggesting the effect is greater.

However, when examining the fixed firm effect and the interaction dummy it is evident that there is a change in the association, yes the patterns shown in Tables 48 and 49, both showed a consistent positive association, but there is an improvement. The inaction dummy identifies if this the time and INDEX/INDUSTRY score altered the institutions’ preferences, and it did for the INDUSTY but not the INDEX, possible reasons for this shall be discussed in the following section. However, it is accepted that the is a change thus the hypothesis H4c There will be increase in the positive association between total institutional ownership and overall corporate governance from before and after the financial crisis of 2007-8. Is accepted, however, this is true only for the INDUSTY score.

8.6 Discussion
In this section, the results for overall corporate governance are discussed. There is a comparison between the INDEX and INDUSTRY measures for the results and there is a discussion on the possible reasons for the results found. It starts with a discussion on the association between total institutional ownership, then the block-ownership levels and finally the impact the financial crisis has upon the institutional shareholder preferences. Finally providing a summary of how the research questions are addressed.

8.6.1 Total Institutional Ownership
The general governance indexes (INDUSTRY and INDEX) are consistent with prior research that there is a positive significant association between institutional ownership and corporate governance (Bushee et al 2013; Chung and Zhang 2011; Aggarwal et al 2011).

The results are consistent with the idea that institutions may tilt their portfolios to firms to better corporate governance to reduce the monitoring costs (Bushee, et al 2014). These
results are consistent with the results from the audit score and the board score. Where the board score used in this study is incorporated into the main scores (INDEX and INDUSTRY), with 17 of the 55 variables being based upon the board score, giving it a greater weighting than the other two sub scores, audit and compensation. Therefore, could it be possible that the main scores (INDEX and INDUSTRY) are only significant due to the board score. The counter argument is that in the Chung and Zhang (2011) study, it is found that 6 out of the 10 elements that are significant in their own right are not from the board score, so this might not be the case. As there are 55 factors and only 17 come from the board, the vast majority of elements are not related to the board score. This may be partially why the change in variable did not produce strong enough results to be significant.

8.6.2 Block Ownership
The results showed a positive association only being positive and significant for ownership levels below 5%, could be because of a number of reasons. It could be that institutions that have smaller shares in a firm are more reliant on the company corporate governance, as there is less possibility to have an influence over the directors, whereas, when if an institution has said a 20% stake in a firm it can exert a lot more influence over the directors. It could also be that institutions with a smaller stake are happy to use an ‘off the shelf product’ like the index developed by ISS (RiskMetrics), while those with a larger stake they might rate the firm themselves. However, ISS (RiskMetrics) corporate governance score does rate all the standard areas of what is considered to be good governance e.g. having an independent director on the board (see detail in Appendix A for more detail on the score composition). This is consistent with the view that institutions have diverse portfolios (Wong, 2010), especially if they only have a stake of between 3-5%, as the cost of monitoring would be high, and it is simpler to tilt the portfolio to firms with better governance than actively monitor all investments.

In addition, it could be argued that firms with smaller stakes are more likely to suffer from limitation attention (Hirshleifer and Teoh, 2003), as institutions with smaller stakes are perhaps more prone to cutting corners in their research about the company, thus making them more likely to use an off the shelf product like ISS’s governance score.
The results were slightly different for the block-ownership for the general governance scores (INDEX and INDUSTRY) and the two valid sub-scores (audit and board). The general governance scores only showed a positive significant association for the 3-5% level, whereas the two sub-scores had positive significant results for both the 3-5% and 5-10% level. In the UK shareholders with above, 5% have additional rights compared with shareholders below this level. For example, they have a right to call a general meeting (Summerfield and McKenzie, 2015). However, this right to ask for a resolution may mean that institutions are less concerned with overall governance at this level, as they may feel they have a say on the company and could put pressure on the firm if required.

8.6.3 Time frame
From the results presented in section 8.5, it is clear that the financial crisis has the least impact on institutional shareholder preferences for general corporate governance, as measured by the INDUSTRY and INDEX score, as the relationship is positive and significant for all of the periods studied (pre-crisis, crisis and post-crisis). The general corporate governance’s scores include a multitude of elements related to good corporate governance and in studies by both Bushee, et al (2013) and Chung and Zhang (2011) showed positive significant association between their general governance scores and institutional ownership when using data from before the financial crisis, thus it could be expected that institutions have considered overall corporate governance important for some time.

These results are different from Hawas and Tse (2016) who found that before the crisis (2005-2006) there is no significant association between major shareholders and corporate governance. Whereas, the results are significant after the financial crisis and during the crisis (2007-2008). Whereas, this research showed a consistent positive association between institutional shareholdings and good governance. This could be because Hawas and Tse (2016) used total major shareholders, whereas this study examines institutional shareholders and excludes directors, companies and private investors. The results may differ from Hawas and Tse (2016), as the index and industry scores are in comparison to other firms, whereas, Hawas and Tse (2016) score are an absolute.

From the results, it appears that the financial crisis has more of an impact on the institutional preferences on the INDUSTRY score rather than the INDEX. As, stated in the
methodology the INDUSTRY score is in comparison to firms within their industry, unlike INDEX score which is in comparison to the MSCI EAFE index. It could be that institutions choose to invest in firms from a certain industry and the use of the INDUSTRY.

8.6 Conclusion
The aim of this chapter is to answer a number of research questions. The main question is, do institutional investors prefer to invest in firms with good corporate governance? There is an association between institutional investors ownership and corporate governance, there is some evidence from the results that implied that the firms did active tilt their portfolio to firms with better governance, however, it is not conclusive.

The other questions are partially answered in chapter seven, however, this chapter provides some additional evidence. So, for the question on whether institutional owners’ preferences change for the different ownership levels, again this is found to be true, there is a clear difference in preference for different level of owners, with institutions with smaller stakes being impacted more. The final question is whether the financial crisis caused a change in investor preferences, it is found that it did change preferences for investors in relation to the INDUSTRY score.

The following chapter discusses the results for the different type of institutional investors and how the association to good governance differs from each institutional group.
Chapter Nine

Results and discussion for institutional type
9.0 Institutional Type

It has been argued that institutional owners are not a homogenous group that have the same preference for corporate governance mechanisms (Stapleton, 1996) as has been assumed in the previous chapters. This chapter examines whether; pension funds, banks, insurance, hedge funds and investment advisors all have an equal preference in their portfolio allocation to firms with good corporate governance. Once the results have been presented the implications of these results are discussed.

The primary aim of the chapter is to answer the research question *Do different types of institutions have different preferences for good governance?*

Firstly, the section begins with outlining the descriptive statistics for each institutional type, then goes on to discuss the results found for each group, and finally concludes with a summary of the finding for this section.

The research provides the first evidence of the different types of institutional shareholder preferences on corporate governance in the UK market. It also continues to examine how certain types of institutional shareholders have different preferences for governance elements.

9.0.1 Institutional Types - Aims

The aims of this section are to present the evidence used to support or reject the following hypothesis.

H5a There is a positive significant association between pension fund ownership and good corporate governance.

H5b There is a positive association with banks ownership and good corporate governance.

H5c There is a positive association with insurance firm ownership and good corporate governance.

H5d There is a positive association with hedge fund ownership and good corporate governance.
H5e There is a positive association between investment advisor ownership and good corporate governance

9.2 Descriptive Statistics

The institutional shareholders that have been examined in this research are pension, banks, insurance, hedge funds and investment advisors. For each firm, the shareholdings above 3% are classed, as one of these groups. Investment Advisors are the largest group of institutional shareholders from 2006 to 2010 for the main UK market. Pensions, Hedge Funds and Bank ownership in the UK are around a similar level with means of about 0.7% ownership, and the smallest group is insurance firm ownership. These findings are similar to that of Chung and Zhang (2011), who also found that independent investment advisors are the largest group of investors in the US market. Given the size of the investment advisors, it would be expected that the results of the regressions should be similar to that of total ownership.

**Table 50 Descriptive Statistics for Institutional Ownership Type**

<table>
<thead>
<tr>
<th>Ownership Type</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Ownership</td>
<td>0.000%</td>
<td>99.846%</td>
<td>33.832%</td>
<td>18.675%</td>
</tr>
<tr>
<td>Pension</td>
<td>0.000%</td>
<td>40.081%</td>
<td>0.765%</td>
<td>3.209%</td>
</tr>
<tr>
<td>Insurance</td>
<td>0.000%</td>
<td>26.069%</td>
<td>0.260%</td>
<td>1.303%</td>
</tr>
<tr>
<td>HEDGE_FUND</td>
<td>0.000%</td>
<td>31.835%</td>
<td>0.777%</td>
<td>2.868%</td>
</tr>
<tr>
<td>INVESTMENT_ADVISOR</td>
<td>0.000%</td>
<td>91.037%</td>
<td>30.080%</td>
<td>17.743%</td>
</tr>
<tr>
<td>Bank</td>
<td>0.000%</td>
<td>49.403%</td>
<td>0.700%</td>
<td>2.578%</td>
</tr>
</tbody>
</table>

36 So, for example for pension funds, for each firm in sample the mean ownership is calculated, it would be calculated as follows Firm1 3% pension fund ownership + Firm2 0% pension fund ownership + Firm3 0% pension fund ownership + Firm4 4.5% pension fund ownership = 1.875% would be the mean ownership for this population.
Table 51 Descriptive statistics for the change in mean for Pension Fund ownership in relation to the various governance scores.

<table>
<thead>
<tr>
<th>Sub Score ranking</th>
<th>Audit</th>
<th>Compensation</th>
<th>Board</th>
<th>Overall Governance ranking</th>
<th>Index</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (bottom)</td>
<td>0.99</td>
<td>0.85</td>
<td>0.82</td>
<td>1 (bottom)</td>
<td>1.01</td>
<td>0.79</td>
</tr>
<tr>
<td>2 (middle)</td>
<td>0.92</td>
<td>1.19</td>
<td>0.97</td>
<td>2</td>
<td>0.74</td>
<td>0.93</td>
</tr>
<tr>
<td>3 (highest)</td>
<td>0.66</td>
<td>0.45</td>
<td>0.58</td>
<td>3</td>
<td>0.50</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 (highest)</td>
<td>0.77</td>
<td>0.53</td>
</tr>
</tbody>
</table>

Table 51 shows the descriptive statistics when comparing the difference between pension fund ownership and the best and the worst governance score. From the mean ownership of pensions, it appears pension funds prefer to invest in firms with worse corporate governance. For example, the index score has an average ownership of 1.01% for the worse quartile compared that to 0.77% for the highest quartile and the t-test which compares the difference between the highest and lowest group is significant at 1%. This pattern is present for all of the corporate governance ratings. The following section examines this association further.

9.3 Pension

The summary of the results is presented in this section in Table 52, for further detail on the results for each regression this is found in Appendix F.

Pensions are concentrated group with only 26 different pension firms investing in the UK stock market. The results presented in Appendix F show the detailed results for each of the results for pension funds. From Appendix F tables F1 and F2 there is a similarly to the previous results that there is a significant negative association between the size of a firm (LOG_MKT_CAP). It can be conjected that, as in the UK the ownership is only reported above 3%, the level of ownership has to be quite high to be reported and the larger the firm the monetary value of the share has to be far greater to reach the 3% level. There is also a
negative significant association between both measures of risk Beta with a correlation coefficient of -0.547** for the OLS and -0.5209 for the Hayes and Cai method (BETA) for overall corporate governance (INDEX and INDUSTRY.) Idiosyncratic risk (IODRISK) with correlation coefficient of -19.4486 ** for the Hayes and Cai method and pension fund ownership, implying that pension funds do not invest so much into firms whose shares are synchronised to the market. There is also a negative association between pension fund ownership and dividend yield (DIV_YLD). This might be because pension firms favour companies with higher capital growth rather than dividend pay-outs when the investment is high. The final control variable that has a significant association is the return on equity (ROE) where there is a negative relation between this and pension fund ownership. This infers that pension funds prefer firms with lower ROE, this may be because pension firms are targeting companies have good prospects, but have not realised their potential this is consistent with Erengburg, Smith and Smith (2016) findings where active pension firm ownership has a negatively associated with subsequent ROE.

It could be argued that pension funds should in principle have long term investment horizons and thus may tilt their portfolios to older firms, such as firms with higher dividend yield. With more mature firms, there could arguably be less scope for agency problems, thus this could explain the lack of association between pension funds and corporate governance scores.

**Table 52 Summary of findings for pension funds**

| Table 52 Summary of regression results for the relation between Pension Fund ownership and various governance scores |
|---|---|---|---|
| | Pooled OLS | Hayes & Cai | 2SL (2nd Stage Regression) |
| GOV_INDEX | -0.001 | -0.003 | -0.008 |
| | (-0.168) | (-0.302) | (-0.891) |
| GOV_INDUSTRY | 0.002 | 0.001 | -0.004 |
| | (0.248) | (0.131) | (0.620) |
| AUDIT | -0.038 | -0.080 | -0.036 |
| | (-0.300) | (-0.567) | (-0.266) |
| BOARD | -0.047 | -0.048 | -0.101 |
| | (-0.384) | (-0.412) | (-0.745) |
| COMP | -0.160 * | -0.135 | -0.157 * |
| | (-1.776) | (-1.470) | (-1.694) |

*, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The number in the parentheses are t-statistics.
9.3.1 Corporate Governance
From the results presented in Table 52 that it is evident that there is no significant association between pension fund ownership and corporate governance as measured by the INDEX and INDUSTRY RiskMetrics rating for corporate governance. This is line with expectations that there would be no association for pension funds as this is consistent with Hawas and Tse (2015) and Faccio and Lasfer (2002) findings. Despite other results being consistent, it is still somewhat surprising that pension funds have little interest in companies with good corporate governance. The results could be partially because of the reporting threshold, as both Bushee et al (2010) and Chung and Zhang (2011) did find a positive association when using US data, whose reporting threshold is a monetary value rather than a percentage value, so it could be there is a positive association at the lower levels, but not at the higher levels. This poses the question why would that be? It would be logical to think that given pension funds fiduciary duty is high, as is the expectation that the investment is safe, so why would they not actively choose firms with good governance? It could be that good governance is not deemed an important part of the investment choices.

9.3.2 Audit
In Table 52 shows the results of the regression for pension fund ownership against the audit environment score (AUDIT) which are similar to the results for the general corporate governance scores (INDEX, INDUSTRY) as there is no significant association between the variables. This suggests that pension funds do not tilt their portfolio to firms with a good audit environment.

9.3.3 Board
The results from Table 52 show that there is no significant association between the pension fund ownership and the board score (BOARD). Again this is similar to the general score (INDEX, INDUSTRY) and audit score (AUDIT).

9.3.4 Remunerations
There results from Table 52 show that there is a weak negative significance association between pension fund ownership and the Compensation Score (COMP). This infers that pension funds prefer firms with a lower COMP. For the 2SL there is no significance for the instrumental variable (CEO_TENURE), this has invalidated the results for the second part of the regression. In addition, there is a fixed firm effect and again this does not yield
significant results with a correlation coefficient of -0.105. When using the Hayes and Cai method that controls for heteroscedasticity the results are no longer significant, and the p-value is increased to 0.14. Therefore, from the results it could be concluded that either pension funds, have no association or some weak negative association depending on the methods used. Either way, this suggests that pension funds are not interested in the remuneration committees’ independence or the reasonableness of pay.

9.3.5 Summary of Pensions
In conclusion, the evidence presented suggests that there is no evidence that pension funds tilt their portfolio to firms with good corporate governance, thus the hypotheses H5a can be rejected.

H5a There is a positive association with hedge fund ownership and good corporate governance.

It seems from this research that despite all the pressure that has been put on pension funds from the Hampel Review in 1998 and the Myner Review in 2001, both highlighted the short-termism of pension funds and it appears despite best efforts that this has yielded a poor response, as it seems the pension funds are not considering corporate governance of a firm, which could be argued to help secure a companies’ long term future.

However, the results are consistent with prior research (Hawas and Tse, 2016; Faccio and Lasfer, 2002). A possible explanation is that the pension market is highly concentrated with their only being 26 different pension funds investing in the UK over the study period, thus it is these 26 pension funds with over 3% ownership that do not tilt their portfolios to firms with good governance. Where pension fund ownership below this level could tilt their portfolios to firms with good governance. Although, it could be because of the possible preference for mature firms, which do not suffer so much from agency problems. In addition, it could be argued that it may be a more plausible argument that the extended investment chain is the reason for the lack of association, as the pension fund itself does not have much influence over the investments, thus their preferences are not reflected in the investment choices.
9.4 Banks
From the results presented in this section, it is shown that bank ownership has a positive significant association with trade volume. This suggests that they chose to invest in firms with high liquidity of shares, this supports the view of Del Guerico, (1996) who found that banks tended to invest in firms with a good S&P rating, however, it is viewed that this could also have been because of the high liquidity. There is also a significant negative association between dividend yield and bank ownership, this could again be for similar reasons as pension funds, that they target firms with higher capital growth rather than a dividend. The PE ratio is also having a negative association to bank ownership, this may be because firms with high share price related to earnings tend to be smaller firms that are less well established and thus have less liquidity and this could be something that banks consider important.

The results for bank ownership are summarised in table 53 and the detailed regressions can be found in Appendix G.
**TABLE 53 SUMMARY OF THE FINDINGS FOR BANK OWNERSHIP**

**Summary of regression results for the relation between Banks ownership and various governance scores**

Where GOV_INDEX and GOV_INDUSTRY is the overall all governance score compared to the index/Industry, AUDIT is the governance rating for the audit environment, BOARD is the governance rating for the board of directors and COMP is the governance rating for the remunerations practices. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The number in the parentheses are t-statistics.

<table>
<thead>
<tr>
<th></th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>2SL (2nd Stage Regression)</th>
<th>Fixed Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOV_INDEX</td>
<td>0.009</td>
<td>0.009</td>
<td>0.007</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>(1.566)</td>
<td>(1.524)</td>
<td>(1.213)</td>
<td>(0.264)</td>
</tr>
<tr>
<td>GOV_INDUSTRY</td>
<td>0.008 *</td>
<td>0.008 *</td>
<td>0.005</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>(1.771)</td>
<td>(1.786)</td>
<td>(1.059)</td>
<td>(0.453)</td>
</tr>
<tr>
<td>AUDIT</td>
<td>-0.011</td>
<td>-0.009</td>
<td>-0.070</td>
<td>-0.026</td>
</tr>
<tr>
<td></td>
<td>(-0.132)</td>
<td>(-0.087)</td>
<td>(-0.782)</td>
<td>(-0.250)</td>
</tr>
<tr>
<td>BOARD</td>
<td>0.119</td>
<td>0.116</td>
<td>0.114</td>
<td>0.108</td>
</tr>
<tr>
<td></td>
<td>(1.380)</td>
<td>(1.157)</td>
<td>(1.266)</td>
<td>(0.966)</td>
</tr>
<tr>
<td>COMP</td>
<td>-0.029</td>
<td>-0.036</td>
<td>-0.057</td>
<td>-0.041</td>
</tr>
<tr>
<td></td>
<td>(-0.463)</td>
<td>(-0.549)</td>
<td>(-0.917)</td>
<td>(-0.571)</td>
</tr>
</tbody>
</table>

**TABLE 54 DESCRIPTIVE STATISTICS FOR THE CHANGE IN MEAN FOR BANK FUND OWNERSHIP IN RELATION TO THE VARIOUS GOVERNANCE SCORES.**

**Descriptive statistics for the change in mean for Bank Fund ownership in relation to the various governance scores.**

The firm year data is ranked by each sub score (audit, compensation and board) into groups based on frequency, where 1 is lowest group score (Audit score between 1-3) and 3 is the highest group score (Audit score of 5), whereas the overall governance scores (index and industry) are ranking into quantiles, where 1 is the lowest quantile score and 4 is the highest quantile score. The 1st column of the table represents the mean total institutional ownership within each group based on the Audit score ranking. Column 2 column of the table represents the mean total institutional ownership within each group based on the compensation score ranking. Column 3 column of the table represents the mean total institutional ownership within each group based on the board score ranking. Column 4 represents the mean total ownership based on the quartile for the Index score, whereas column 5 does the same for the industry score. The T test is performed on value of institutional ownership for firms that belonged to the highest score ranking is statistically different from the corresponding value for firms that belong to the lowest score.

<table>
<thead>
<tr>
<th>Sub Score ranking</th>
<th>Mean</th>
<th>Compensation</th>
<th>Board</th>
<th>Overall Governance ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (bottom)</td>
<td>1.06</td>
<td>0.83</td>
<td>0.50</td>
<td>1 (bottom)</td>
</tr>
<tr>
<td>2 (middle)</td>
<td>0.60</td>
<td>0.63</td>
<td>0.72</td>
<td>2</td>
</tr>
<tr>
<td>3 (highest)</td>
<td>0.69</td>
<td>0.69</td>
<td>0.74</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 (highest)</td>
</tr>
<tr>
<td>Mean T Test</td>
<td>1.79</td>
<td>0.85</td>
<td>-1.26</td>
<td>-0.27</td>
</tr>
<tr>
<td>T statistic</td>
<td>12.69</td>
<td>2.17</td>
<td>4.79</td>
<td>0.04</td>
</tr>
<tr>
<td>F statistic</td>
<td></td>
<td>0.14</td>
<td>0.03</td>
<td>0.85</td>
</tr>
<tr>
<td>Significance</td>
<td></td>
<td></td>
<td></td>
<td>0.45</td>
</tr>
</tbody>
</table>
The only means differences that are significant are the audit score and the board score, however, the associations are in a different direction. Where the banks’ ownership is higher for firms with poor audit scores, whereas the board score banks have lower ownership with firms with better board scores with a mean of 0.74% compared to the worse group of 0.50%. The following section examines these values further with more rigorous analysis.

9.4.1 Corporate Governance
There is some evidence that banks choose firms with good corporate governance in relation to the industry that they are in. As shown in Table 53 (for detail Appendix G Table E2), there is a weak positive association between bank ownership and INDUSTRY (0.008* and 0.008*), however the results for the fixed firm effect and from 2SL are insignificant, thus it could be that firms with good governance compared to the industry they operate in is dependent on bank ownership. However, from the results in Table 53 (detail in Appendix G Table E1) there is no association between INDEX and bank ownership. As, found by of Del Guerico, (1996) banks are attracted to firms with good S&P ratings and this could be part of the indexation of their portfolios, suggesting that banks may just choose their portfolio based on the market position and ignore other factors such as corporate governance.

9.4.2 Audit
The results for bank ownership (BANK) and the audit score (AUDIT) are negative (-0.011 OLS and -0.0087 Hays and Cai) and not significant, as can be seen in Table 53 and for more detail in Appendix ETtable E3. Suggesting that banks do not tilt their portfolios to firms with good audit environments. Some have blamed banks for the global financial crisis of 2007-08 (Lodge and Wegrich, 2011) and the banks are criticised for their attitude towards risk (Walker, 2009), thus banks may not have fully appreciated the audit environment now. In essence, if the banks could not manage their own risk, then why would they prize this in their investments?

9.4.3 Board
The results are summarised in Table 53 and details are presented in Appendix G Table E4. The results show that there is a positive association between bank ownership (BANK) and the board score (BOARD), but it is not significant. Thus, suggesting that banks are not tilting their portfolios to firms with good board features.

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9.4.4 Remunerations
Consistent with the findings for all of the measures of corporate governance (INDEX, INDUSTRY, AUDIT, BOARD) there is no significant association between bank ownership (BANK) and the compensation score (COMP), as summarised in Table 53.

9.4.5 Summary of Banks
The hypothesis that there is a positive association with banks and good governance (H5d) has to be rejected and the null hypothesis accepted that there is no association between good governance and bank ownership.

H5d There is a positive association with banks ownership and good corporate governance

The results are not consistent with the findings of Bushee et al (2013) and Chung & Zhang (2011) whom both found that there is a positive association. This may be because of the reporting threshold in the UK is different and there are no observations below 3% in the sample. It could be that banks do have a preference for good governance, but this is not shown in the sample of above 3%, it could be of more interest to them, when they have smaller stakes and less able to force change. In addition, prior research found that there is a positive association between bank ownership levels and the granting of anti-takeover provisions (Payne et al, 1996) suggesting that banks are pressure sensitive institutions (David et al, 1998). The findings from this study are consistent with the description of banks, as being pressure sensitive institutions.

9.5 Insurance
Insurance firms are said to behave in a very similar way to pension funds, however insurance has been described as a pressure sensitive institution, unlike pension funds which is often classified as pressure resistant, due to not having a close business relationship with firms in which they invest in (Almazan, Hartzell and Starks, 2005; Hutchinson, Seamer and Chapple, 2015; Muniandy, Tanewski and Johl, 2016; Brickley, Lease et al. 1988; David, Kochhar et al. 1998, Johnson, Schnatterly, Hohnson and Chiu, 2010).

The summary of the results for insurance is presented in Table 55 and for the details of each of the regressions; the results are shown in Appendix H.
## Table 55 Summary of Findings for Insurance Fund Ownership

Summary of regression results for the relation between Insurance Fund ownership and various governance scores.

Where GOV_INDEX and GOV_INDUSTRY is the overall all governance score compared to the index/Industry, AUDIT is the governance rating for the audit environment, BOARD is the governance rating for the board of directors and COMP is the governance rating for the remunerations practices. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The number in the parentheses are t-statistics.

<table>
<thead>
<tr>
<th></th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>2SL (2nd Stage Regression)</th>
<th>Fixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOV_INDEX</td>
<td>0.004</td>
<td>0.004</td>
<td>0.002</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>(1.372)</td>
<td>(1.293)</td>
<td>(0.692)</td>
<td>(0.245)</td>
</tr>
<tr>
<td>GOV_INDUSTRY</td>
<td>0.000</td>
<td>0.000</td>
<td>-0.001</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(-0.064)</td>
<td>(-0.145)</td>
<td>(-0.564)</td>
<td>(0.123)</td>
</tr>
<tr>
<td>AUDIT</td>
<td>0.128 ***</td>
<td>0.113 **</td>
<td>0.109 **</td>
<td>0.097 *</td>
</tr>
<tr>
<td></td>
<td>(2.700)</td>
<td>(2.546)</td>
<td>(2.198)</td>
<td>(1.717)</td>
</tr>
<tr>
<td>BOARD</td>
<td>0.087 *</td>
<td>0.090 *</td>
<td>0.085 *</td>
<td>0.072</td>
</tr>
<tr>
<td></td>
<td>(1.860)</td>
<td>(1.859)</td>
<td>(1.704)</td>
<td>(1.180)</td>
</tr>
<tr>
<td>COMP</td>
<td>-0.033</td>
<td>-0.015</td>
<td>-0.035 *</td>
<td>-0.050</td>
</tr>
<tr>
<td></td>
<td>(-0.959)</td>
<td>(-0.550)</td>
<td>(-1.004)</td>
<td>(-1.275)</td>
</tr>
</tbody>
</table>
TABLE 56 DESCRIPTIVE STATISTICS FOR THE CHANGE IN MEAN FOR INSURANCE FUND OWNERSHIP IN RELATION TO THE VARIOUS GOVERNANCE SCORES

<table>
<thead>
<tr>
<th>Sub Score ranking</th>
<th>Audit</th>
<th>Compensation</th>
<th>Board</th>
<th>Overall Governance ranking</th>
<th>Index</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (bottom)</td>
<td>0.17</td>
<td>0.31</td>
<td>0.23</td>
<td>1 (bottom)</td>
<td>0.25</td>
<td>0.36</td>
</tr>
<tr>
<td>2 (middle)</td>
<td>0.26</td>
<td>0.34</td>
<td>0.27</td>
<td>2</td>
<td>0.27</td>
<td>0.16</td>
</tr>
<tr>
<td>3 (highest)</td>
<td>0.28</td>
<td>0.19</td>
<td>0.26</td>
<td>3</td>
<td>0.33</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 (highest)</td>
<td>0.20</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Mean T Test
-1.19  1.73  -0.28  0.65  1.49
F statistic
5.55  11.64  0.36  1.72  8.79
Significance
0.02  0.00  0.55  0.19  0.00

From Table 56 it is noted that it seems that insurance firms prefer firms with better audit scores. With the mean ownership for the lowest ranked audit score of 0.17% compared to the best group of 0.28% with a 5% significance. However, for both the compensation score and industry, insurance firm ownership is lower for the firms with the worse rating and both with a 1% significance. However, these results do not control for any other variables.

The results presented in Appendix H, Tables H1 and H2 show that the control variable for the regression for Insurance show that insurance ownership (INSURANCE) that there is a negative significant association to size (LOG_MKT_CAP). Insurance ownership (INSURANCE) also have a negative significant association to idiosyncratic risk (IDORISK) suggesting that insurance firms are not averse to firms with higher level of return volatility, however, with volatility, there would be a greater possible reward. The final control variable that insurance is negatively is the debt to asset ratio (DEBT_ASSET) suggesting that insurance firms prefer to invest in firms with lower debt.

The following sections discuss the results found for the regression analysis.

9.4.1 Corporate Governance
From the results found in Table H1 and H2 in Appendix H again, it is a very similar picture to pension funds, there is no significant association between insurance company ownership and good corporate governance as measured by INDEX and INDUSTRY. It is expected that
there would be a positive association between these variables, as Chung and Zhang (2011) found insurance to have a positive significant association, unlike these findings. However, despite the results being insignificant the P values for insurance are in the 0.15 to 0.19 range. Therefore, it may have been the lack of observations that reduced the significance of the association. As stated earlier Chung and Zhang (2011) research is based upon US data where the reporting threshold is different, while Hawas and Tse (2016) found no association between insurance and pensions combined and good governance.

9.4.2 Audit
According to the results in Table H3 in Appendix H, there is a positive significant association between insurance firm ownership and the audit environment at 1% level for Pooled OLS and 5% for the Hayes and Cai method. In addition to a 2SL regression is run to control for endogeneity and it is shown that there is a positive significant relationship again. However, there are issues with the model and the fixed firm which again showed a positive correlation coefficient of 0.097*. This shows that insurance firms actively chose firms with a good audit environment to invest in. The reasons for this should be similar to any other institutional investor and wanting to ensure that the financial reporting is of better quality and the risk associated this. However, the question is why do insurance firms care more about the audit environment than general corporate governance? It could be that as insurance firms are pressure sensitive firms and do not like to exert change upon the management then, this might be why they have chosen firms with good audit scores, as they will not have to interfere and risk damaging business relationships. But why is this not the case with general governance and why the interest in an audit? It could be that the audit environment score only really has three meaningful elements in the UK, independence of the audit committee, the level of non-audit fees, and the length of tenure. These are clearly definable factors and easy to examine without the use of the proxy advisor service like ISS (RiskMetrics), thus it could be these factors are influencing the investment decision, as there is a wish to avoid the risk of an earnings re-statement in their investee firms. In addition, Insurance firms have a long term investment strategy, this could mean that they are wanting to ensure earnings quality as it helps them with the investment.
9.4.3 Board
The results presented in Table H4 in Appendix H show there is a weakly significant association between insurance firm ownership and the board score. It again has been shown to be significant using both methods and when using 2SL, however, it does not when using a fixed firm effect as it has a correlation confident of 0.0072, thus showing an association but not causality that insurance firms actively choose investee firms with good board structure. Again, this may be because of the unwillingness to pressure firms to change their board structure.

9.4.4 Remuneration
Similarly, to the results for pensions funds (PENSION), banks (BANK) there is no significant relationship between insurance ownership (INSURANCE) and the compensation score (COMP), as presented in Table H5 in Appendix H.

9.4.5 Summary of Insurance
Overall, the evidence is mixed on the association between insurance fund ownership and good governance. With significant positive relationships with the audit score (AUDIT) and the board score (BOARD) inferring that insurance firms do have a positive association to good governance like the hypothesis H5c “There is a positive association with insurance firm ownership and good corporate governance”. However, for the general governance scores (INDEX, INDUSTRY) and the compensation score (COMP), there is no association. Thus, the main hypothesis is rejected as; there is only an association for audit and the board.

Insurance funds have a positive significant association to the audit environment (AUDIT) and the board practices (BOARD). This suggests that insurance firms are most sensitive of the institutions discussed so far in the area of the audit environment and the board practices.

9.6 Hedge Fund
This section outlines the results for the hedge fund ownership (HEDGE_FUND). Table 57 presents a summary of the results for the hedge fund ownership and for each of the individual regressions performed the results are shown in Appendix I.

Hedge funds activism has been a feat to be reckoned with, as being described as having wolf pack tactics in forcing change (Briggs, 2007). From reviewing the control variables in this
study it can be seen that they have a unique feature of a having a positive significant relationship with ownership and debt to asset (DEBT_ASSET), suggesting that they chose firms that have a higher level of debts. None of the other institutional types in this study has this association. This may be because previous research has stated that hedge funds target firms that have been managed with good fundamentals (Boyson and Mooradian, 2011; Bratton 2007), and high debt could be perceived as a sign of poor management.

The following parts to this section are discussing the findings for hedge funds preferences for corporate governance.

**Table 57 Summary of Results for Hedge Fund Ownership**

<table>
<thead>
<tr>
<th></th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>25L (2nd Stage Regression)</th>
<th>Fixed Firm effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOV_INDEX</td>
<td>0.016</td>
<td>0.017</td>
<td>0.016</td>
<td>0.011</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td>***</td>
<td>**</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>(2.304)</td>
<td>(2.853)</td>
<td>(2.249)</td>
<td>1.985</td>
</tr>
<tr>
<td>GOV_INDUSTRY</td>
<td>0.011</td>
<td>0.011</td>
<td>0.011</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>**</td>
<td>*</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(1.939)</td>
<td>(2.344)</td>
<td>(1.911)</td>
<td>-0.079</td>
</tr>
<tr>
<td>AUDIT</td>
<td>0.106</td>
<td>0.122</td>
<td>0.060</td>
<td>0.009</td>
</tr>
<tr>
<td></td>
<td>(0.977)</td>
<td>(1.325)</td>
<td>(0.529)</td>
<td>0.073</td>
</tr>
<tr>
<td>BOARD</td>
<td>0.158</td>
<td>0.162</td>
<td>0.148</td>
<td>-0.044</td>
</tr>
<tr>
<td></td>
<td>(1.476)</td>
<td>(1.682)</td>
<td>(1.310)</td>
<td>-0.352</td>
</tr>
<tr>
<td>COMP</td>
<td>0.061</td>
<td>0.064</td>
<td>0.084</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>(0.786)</td>
<td>(0.881)</td>
<td>(1.073)</td>
<td>0.010</td>
</tr>
</tbody>
</table>
Table 58: Descriptive Statistics for the Change in Mean for Hedge Funds

<table>
<thead>
<tr>
<th>Sub Score ranking</th>
<th>Audit Mean</th>
<th>Compensation Mean</th>
<th>Board Mean</th>
<th>Overall Governance ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (bottom)</td>
<td>0.67</td>
<td>0.85</td>
<td>0.52</td>
<td>1 (bottom) 0.55 0.62</td>
</tr>
<tr>
<td>2 (middle)</td>
<td>0.69</td>
<td>0.49</td>
<td>0.69</td>
<td>2 0.63 0.59</td>
</tr>
<tr>
<td>3 (highest)</td>
<td>0.84</td>
<td>0.92</td>
<td>0.93</td>
<td>3 0.84 0.89</td>
</tr>
<tr>
<td>4 (highest)</td>
<td></td>
<td></td>
<td></td>
<td>4 (highest) 1.08 1.00</td>
</tr>
</tbody>
</table>

The hedge funds have higher ownership in firms with better corporate governance, for all of the corporate governance measures (INDEX, INDUSTRY, AUDIT, COMP, BOARD). However, just the board, index and industry are significantly different when comparing the highest and lowest rank ownership groups. The results show that firms with the lowest board score have a mean ownership of 0.52% compared to the highest group of 0.93% with a 1% significant. The firms with the lowest industry rating have mean hedge fund ownership of 0.62% compared to the best group with 1% ownership. This is similar to the index, where the firms with the lowest index rating have 0.55% hedge fund ownership compared to the highest have 1.0% hedge fund ownership, with a 1% significance.

9.6.1 Corporate Governance

Hedge Funds have preferences for firms with good corporate governance, as shown in Tables I1 and I2 for both measures of general corporate governance (INDEX and INDUSTRY) with a correlation coefficient of 0.016** for OLS and 0.017*** for the Hays and Cai. Furthermore, for the INDEX and for the INDUSTRY, it showed a positive correlation coefficient for OLS 0.011* and 0.011** for Hayes and Cai. It is also demonstrated by the fixed firm effects and 2SL, that the relationship has been controlled for endogenic issues for the INDEX, but only the 2SL for INDUSTRY, thus causality cannot be determined for INDUSTRY. Hedge funds appear to have a preference for companies that have good governance. Prior research suggests that active hedge funds do pressure for change in...
governance issues (Bratton, 2007; Boyson and Mooradian 2011; Klien and Zur, 2009), however this study is not examining ‘active’ hedge funds, just hedge funds that have share ownership in the UK, it might not be that the hedge funds are actually active. It is obvious from the prior research that in the hedge fund community do prefer firms with good governance, as their performance is better, thus it is expected that the hedge funds would prefer firms with better governance. Shareholder activism comes at a cost, and maybe not all hedge funds are willing to invest the time and money in targeting firms and making them improve their governance, so it may be deemed easier just to target firms with off the shelf good governance.

9.6.2 Audit
There is no significant association between the audit environment (AUDIT) and hedge fund ownership. This suggests that the hedge funds are not concerned with the earnings integrity of the firm. This could be for a number of reasons. One that the hedge funds are targeting firms that have poorer financial performance, hence the high debt levels, so they might consider that part of the monitoring of the firms is done through debt, in the sense that it must be paid back, thus there must be enough cash to do this, so whether the financial statements are correct is irrelevant when the firm is bound by its debt payments (Diamond, 1984). However, this argument does not support why hedge funds would care about general corporate governance, but not audit, as if the debt is functioning as an external monitor, then why would hedge funds favour firms with good governance? It could be because the hedge funds care more about the direction of the company and the overall status of the firm and take little notice of the audit environment, as this is more of a longer-term issue and hedge funds are possibly more myopic in their horizons, as they may be seeking short-term profits unlike, pensions and insurance.

9.6.3 Board
There is a weak positive association between hedge fund ownership using both pooled OLS and Hayes and Cai methods, however, when testing for endogenous issues the second stage of the regression is insignificant. This suggests that there are possible endogenous issues with the data and that there could be a feedback loop between the dependent (hedge fund ownership) and the independent variable (BOARD) and there is a possibility that hedge fund ownership influences the board. This might be the case as when previous researchers have
examined active hedge funds the issues they targeted the firm on are ones relating to the board mainly (Bratton, 2007; Boyson and Mooradian 2011; Klien and Zur, 2009), rather than the other areas of corporate governance.

The weak association could be explained by the fact the BOARD forms part of the main governance score, and there is an association. However, it could be hedge funds take more of a holistic view of firms when initially investing in them, and believe that the board can be corrected, but where a firm has persistently poor governance scores in comparison to other firms, there is little point in targeting them for change.

9.6.4 Remuneration
There is no association between hedge fund ownership (HEDGE_FUND) and the compensation score (COMP), this is similar to that of the other institutional investors.

9.6.5 Summary of Hedge Funds
The results for hedge funds show that there is a positive association between both of the general governance scores (INDEX and INDUSTRY), and there is a weak association with the board structure (BOARD). As the results are strongly significant for overall governance the hypothesis H5a has been accepted.

H5a There is a positive association with hedge fund ownership and good corporate governance.

9.7 Investment Advisors
The investment advisor group is the largest group of institutional shareholders, as most investment firms do not fall into one of the traditional categories i.e. Bank, but they offer a multitude of services, thus cannot easily be classified. For example, Barclays is categorised as an investment advisor and not a bank, as it does not solely offer traditional banking services. The summary of results is shown in Table 59 and the detailed of each regression are shown in Appendix J. The investment advisors’ investment preferences appear to follow the classical view of what institutional investors prefer, with a preference to firms with, lower debt (DEBT_ASSET), as this would suggest that there is less risk, as the returns are more protected if a firm has lower debt, as less capital has to be used to service the debt. Investment Advisors prefer firms with and higher PE ratio (PE), it could be suggested that
they prefer firms with a higher share price in relation to accounting earnings. In some of the regression results, there is a weak positive relationship between ownership and Beta, suggesting that sometimes investment advisors prefer firms with higher risk in relation to share price which moves with the market.

This section is going to cover the results found for investment advisor ownership and corporate governance preferences.

**Table 59 Summary of Findings for Investment Advisors**

Table 59

| Summary of regression results for the relation between Investment Advisor ownership and various governance scores |
|---|---|---|---|
| **GOV_INDEX** | Pooled OLS | Hayes & Cai | 2SLS (2nd Stage Regression) | Fixed Firm Effect |
| | 0.223 | 0.238 | 0.002 | 0.088 |
| | (5.616) | (5.650) | (0.692) | (2.185) |
| **GOV_INDUSTRY** | 0.165 | 0.176 | 0.193 | 0.074 |
| | (5.268) | (4.935) | (5.642) | (2.201) |
| **AUDIT** | 2.357 | 2.643 | 2.940 | 0.138 |
| | (3.860) | (4.390) | (5.582) | 0.248 |
| **BOARD** | 2.017 | 1.895 | 2.377 | -0.587 |
| | (3.322) | (3.041) | (3.654) | -0.983 |
| **COMP** | 0.373 | -0.251 | -0.418 | 0.352 |
| | (0.842) | (-0.552) | (-0.927) | (0.914) |
### Table 60 Descriptive statistics for the change in mean for investment advisor ownership

The firm year data is ranked by each sub score (audit, compensation and board) into groups based on frequency, where 1 is lowest group score (Audit score between 1-3) and 3 is the highest group score (Audit score of 5), whereas the overall governance scores (index and industry) are ranking into quantiles, where 1 is the lowest quantile score and 4 is the highest quantile score. The 1st column of the table represents the mean total institutional ownership within each group based on the Audit score ranking. Column 2 column of the table represents the mean total institutional ownership within each group based on the compensation score ranking. Column 3 column of the table represents the mean total institutional ownership within each group based on the board score ranking. Column 4 represents the mean total institutional ownership based on the quartile for the Index score, whereas column 5 does the same for the Industry score. The T test is performed on value of institutional ownership for firms that belonged to the highest score ranking is statistically different from the corresponding value for firms that belong to the lowest score.

<table>
<thead>
<tr>
<th>Sub Score ranking</th>
<th>Audit Mean</th>
<th>Compensation</th>
<th>Board Mean</th>
<th>Overall Governance ranking</th>
<th>Index</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (bottom)</td>
<td>29.34</td>
<td>30.62</td>
<td>30.63</td>
<td>1 (bottom)</td>
<td>28.51</td>
<td>28.61</td>
</tr>
<tr>
<td>2 (middle)</td>
<td>29.23</td>
<td>30.37</td>
<td>30.68</td>
<td>2</td>
<td>31.76</td>
<td>32.22</td>
</tr>
<tr>
<td>3 (highest)</td>
<td>30.84</td>
<td>29.69</td>
<td>29.52</td>
<td>3</td>
<td>30.74</td>
<td>30.10</td>
</tr>
<tr>
<td>Mean T Test</td>
<td>-1.16</td>
<td>0.90</td>
<td>0.86</td>
<td>-0.81</td>
<td>-0.79</td>
<td></td>
</tr>
<tr>
<td>F statistic</td>
<td>0.38</td>
<td>0.48</td>
<td>4.82</td>
<td>7.01</td>
<td>12.35</td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>0.54</td>
<td>0.49</td>
<td>0.03</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The descriptive statistics for the change in means ownership for investment advisors indicates that ownership by investment advisors is higher when the ratings are higher for both the index and industry, with firms with the lowest index rating having a mean value of 28.51% compared to the highest quartile 29.48% with a 1% significance. The industry has similar results with the lowest industry 28.61% compared to the mean 29.58% ownership by investment advisors. However, there are inconsistencies with the board score, which indicates the mean ownership for firms with the lowest board score has a 30.63% investment advisor ownership compared to the highest of 29.52%. These relationships are examined further in the following section.

#### 9.7.1 Corporate Governance

The results show that investment advisors have a positive significant association with good corporate governance, as represented by the regressions in Table J1 in Appendix J for INDEX and J2 for INDUSTRY. These results are consistent with the findings of Chung and Zhang (2011), who also found that independent investment advisors and investment companies have a positive association with good governance. To examine the association further the fixed firm effect is added and then the 2SL. As can be seen in Table J1 and J2 that in the INDEX and INDUSTRY have correlation coefficients of 0.088** and 0.074** respectively. It means that investment advisors actively seek firms with good governance to invest in.
9.7.2 Audit
Again, it is shown that there is a positive significant association between audit score and investment advisor ownership and the 2SLS also show a positive significant relationship for both the instrumental variable (CEO_TENURE) and the audit environment (AUDIT) with a correlation coefficient of 2.940***, however when introducing a fixed firm effect, the results become insignificant. Suggesting that there is an association between investment advisors and good audit environment, but the institutional investors do not actively choose firms with a good audit score.

9.7.3 Board
Again, there is a positive significant association between the board structure (BOARD) and investment advisor ownership, however, it is not significant when introducing a fixed firm effect. Therefore, there is an association, but causation cannot be claimed.

9.7.4 Remunerations
The remuneration environment (COMP) is not significant for investment advisors, as well as all the others institutions (HEDGE_FUND, BANK, INSURANCE). It seems that remunerations are not of interest to investment advisors.

9.7.5 Summary of Investment Advisors
Overall, it can be seen from the results presented in this section that investment advisors are interested in all areas of corporate governance with the exception of the remunerations (COMP). Given overwhelming evidence, the hypothesis H5e should be accepted that there is a positive association between investment advisor ownership and good corporate governance.

9.8 Discussion
This section of the discussion compares and contrast the findings for all five types of institutions. An important point to note is that investment advisor results mirror the results of total institutional ownership, as they are the largest shareholder group. Therefore, this section focuses primarily on the other four. Pension funds and hedge funds have been described as pressure resistant group of institutional investors, whereas insurance and banks as pressure sensitive group (Hutchinson et al, 2015). The group for investment advisors is more of an umbrella term for other institutional investors, thus could be
described as pressure indeterminate. It is expected that there would be a positive association between corporate governance and total ownership all for all of the institutional types. Next, there is a discussion on which type of institution showed significant associations for each type of corporate governance measure. It will begin with the general governance scores (INDEX and INDUSTRY), followed by the audit score (AUDIT), the board score (BOARD) and finally the compensation score (COMP).

9.8.1 General Corporate Governance
The hedge funds and investment advisor showed the most significant results with both having a positive significant association to both the INDEX and INDUSTRY score.

There is no directly comparable research to this on hedge funds, as the research that is broadly comparable to this study (Bushee et al, 2013; Chung and Zhang, 2011; Hawas and Tse, 2016) however, they do not examine hedge funds. Therefore, this is the first study on how hedge funds have a preference for firms with good governance when measured by the INDEX. Providing new knowledge in this area.

Hedge funds are one of the pressure resistant groups of institutional investors, so they could act in a more forceful manner to effect change. The results do not prove causation, for all measures and are only demonstrating association for the majority of governance measure (INDUSTRY, BOARD), so it could be that that the hedge funds have used activism in these firms to improve their corporate governance and not actually choosing the firms with good governance. There is prior research to suggest that hedge funds are the most active of the institutions (McCAherY et al, 2008) and they also have a good success rate in their activism (Klien and Zur, 2009; Bebchuk et al, 2015; Brav, et al, 2009).

The results for investment advisors having a significant association to both INDEX and INDUSTRY corresponds with previous findings. Chung and Zhang (2011) found independent investment advisors to have a positive significant association to good corporate governance. Hawas and Tse (2016) found a positive association between their groups called other institutional investors, which would consist of investment advisors.

Why do the other types of institutional shareholders not have a significant association with good governance? Pension funds are not expected to have a significant association with good governance, which is comparable to both Hawas and Tse (2015), and Faccio and Lasfer
(2002) findings. There is evidence that pension funds do not reduce their holdings in firms that perform badly (Erengburg et al, 2016), this could suggest that pension funds are not going to change their investments based on corporate governance and take a buy and hold strategy to investments. Both banks and insurance funds are expected to have a positive association to both INDEX and INDUSTRY, however, they did not. This is inconsistent with the findings of Bushee, et al (2013), Chung, and Zhang (2011). Both banks and insurance funds are described as being a pressure sensitive group, thus unlikely to try and actively force changes in corporate governance. The insignificant results could be due to the number of observations for pension’s funds, insurance funds and bank ownership within the UK market make it statistically more difficult to demonstrate significance.

9.8.2 Audit Score
Both the insurance fund and investment advisor ownership proved to have a significant positive association to the audit score (AUDIT), so when a firm has a better audit score the more ownership of these two groups. It has been established that the audit score (AUDIT) is only significant during and after the financial crisis, so it could be that these two institutions are more sensitive to the apparent audit failings. Hawas and Tse (2016) found that there is a significant association between insurance and pension funds ownership and their audit score, so there is some consistency to the finding in this study. However, it is difficult to make a direct comparison, as Hawas and Tse (2016) combined insurance and pensions. The other institutions did not show any significance to the AUDIT, it could be arguable that institutions with a more short-term view may be less concerned with the AUDIT. There is evidence that a better audit environment improves reporting quality (Klein, 2002), however, if it is a shorter-term investment this may be less of an issue. In the research about hedge funds, the activism that they sought for corporate governance, tended to be more board focused, rather than audit focused (Bratton, 2007; Boyson and Mooradian, 2011), whereas banks tend to invest in firms with good credit ratings and use an indexation approach to investment (Del Guerico, 1996), thus if this is the case, then there would not be changes to the portfolios based on changes in corporate governance.

9.8.3 Board Score
The board score has the most significant association to the different institutional ownership types, with: insurance funds, hedge funds and investment advisor all presenting positive
significant associations. This is consistent to previous results that the board score (BOARD) is the most important element of corporate governance, so it might be described as unsurprising that more of the types of the institutions have a positive association. It is only banks and pension funds that have no association to the audit score, again this may be to them using an indexation approach to investments.

9.8.4 Compensation Score
The compensation score (COMP) results have shown that institutions have homogenous preferences for the importance of the remuneration environment, that there is no association between ownership and the compensation score (COMP). This is consistent with previous findings that the remuneration environment is the least important to total institutional investors.

9.9 Summary
Overall the results show that there are some differences between institutional ownership preference. With both pension and banks preferring firms with a lower dividend yield, both insurance firms and investment advisors preferring firms with lower debt, yet hedge funds preferring firms with higher debt. It is not surprising that there are differences and commonalities between their preferences for good governance.

The sub score that yielded the weakest results is the compensation score, where only pensions have a weak significance before controlling for heteroscedasticity. This suggests that institutional investors do not place any weight on their investment choices on how directors are paid and how much. The audit score is important for both insurance firms and investment advisors, but no others. The board score is the most influential of the sub score on investment choices with insurance, hedge funds, and investment advisors having significant results. The general governance indexes are significant for only hedge funds and investment advisors, and for the industry index, there is a weak significance.

From the results, it is evident that the type of institution that has the most significant association to good corporate governance is investment advisors, then hedge funds, and finally insurance funds and no positive associations for pension funds or banks. This evidence suggests that institutional investors are not a homogenous group in their
corporate governance preferences. The two types of institution that are distinctive in their lack of association to good governance are banks and pension funds. Given the environment at the time of the study, there is a lot of pressure on financial institutions to take more responsibility for their investment choices. Pension funds are heavily scrutinised for their behaviour in the Myners Review (2001), and it may have been presumed to be logical for pension funds to take more of an active role in reviewing the corporate governance of their investee firms. The evidence is rather conflicting to the recent findings of NAPF (2014) that pension funds are the largest group that have signed up for the Stewardship Code. However, prior research is comparable to the results presented in this study (Hawas and Tse, 2015; Faccio and Lasfer, 2002).

This chapter addresses the research question *Do different types of institutions have different preferences for good governance?* Yes, they do there is a clear difference between the types of owners.
Chapter Ten
Conclusion
10.0 Conclusion

The main aim of the study was to examine the institutional shareholder preferences on corporate governance. The study first examined the impact of three specific areas of corporate governance, the audit environment, remuneration characteristics and board features. Secondly, it examined the impact of overall corporate governance on preferences. Finally, it investigated the association between the different types of institutional investors and all of the measures for corporate governance used. Exploring the area of institutional preferences on corporate governance helps expand knowledge upon their preferences, which is of public interest (Kay, 2012; Walker, 2009).

The primary motive for this study stems from the agency principal relationship and to establish if there had been a breakdown in this relationship. In the UK, the investment chain has become increasingly long and complex, the ONS (2016) cites multiple-ownership pooled accounts as an issue, as they account for 62.5% of UK Shares at the end of 2016. This makes it more difficult to establish the true owners of the shares. This raises the question of how do institutions meet their fiduciary duties to their principal. The increasingly complex share ownership makes it increasingly difficult, so for example, an individual invests in their company’s pension scheme, the trustees of that scheme employ an investment advisor to invest the funds, and the investment advisor pools their investments with other investment advisors into a firm’s shares. It makes it very difficult to monitor director’s behaviour when the investment chain is so long. Regulators have cited the investment chain as an issue without adequate monitoring (Walker, 2009 and Kay, 2012). Despite these concerns there is has been lack of empirical evidence on this area. This study is the first UK study to examine institutional investors preferences on corporate governance. It is important as the public are reliant on the institutions to monitor the investments they make on their behalf.

Portfolio diversification has been cited as a reason why institutional investors find monitoring difficult (Wong, 2010). This study has used ISS (RiskMetrics) measure for corporate governance, this is a simple score and can be used by investors who do not wish to use their time to monitor the investee firms themselves. Thus, this study is an improvement on past studies. As, this study found that the smaller the ownership stake an investor has the greater the preferences for good governance, as measured by ISS proxy.
is important, as prior studies have not examined the block-ownership levels for overall corporate governance, the audit environment and remunerations (Chung and Zhang, 2011; Bushee et al, 2013). This is important for regulators, as this information would help them target different levels of block-holdings for the regulatory changes.

The study period provides the opportunity to examine if the financial crisis was a critical juncture for investors in the UK and it was found there was a change in preference for overall corporate governance and the audit environment. This is important for business leaders and regulators, as it helps them understand the potential shifts in practice that can occur after a crisis. The results for the audit score are particularly important, as both the institutions and auditors were criticised for their role in the financial crisis of 2007-8 (Hooke, 2014; Kay, 2012), yet the change in preference for firms with better audit score began prior to the implementation of any regulations. Therefore, this demonstrates that changes in behaviour can predate the enforcement of regulation.

The study provides evidence of the change in behaviour by investors, this helps deepen the understanding of institutional investors behaviour, which is of importance to regulators and policymakers.

The chapter summarises the main findings presented in chapters seven, eight and nine. Then it outlines the main theoretical and practical implications of the research, followed by a discussion of the limitations and recommendations for further research.

### 10.1 Summary of Findings

The study began by obtaining the institutional share ownership of 3% and above, for all FTSE All-Share firms. Once the ownership was obtained it was necessary to categorise all of the institutional investors into investor type. This involved searching the Bloomberg database for each institution and categorising them based upon the information.

The following stage involved obtaining each of these firm’s corporate governance score through the Bloomberg database using the CGQ function to obtain the ISS (RiskMetrics) governance scores. The following scores were obtained; audit, compensation, board, index and industry scores. Once this data had been obtained, the control variables were downloaded.
To identify the extent of the relationship between institutional shareholder preferences on corporate governance, an OLS regression was run and then another using a fixed firm effect. Other robustness checks were used, however, the fixed firm effect regressions were used to derive the significance of the results and whether to accept or reject the hypothesis. It was found that there was a positive significant association between total institutional ownership and the audit score, board score and overall corporate governance, which is consistent with (Chung and Zhang, 2011). It is also consistent with the theoretical arguments presented in chapter 2, where it was argued that good governance could be a substitute for monitoring (Bushee, et al 2013). Where monitoring costs can be higher for institutional investors because of the diversification of the portfolio (Wong, 2010).

To establish if the institutional preferences altered when there were different levels of block-holdings, a logit regression was run. Where the firm level ownership was categorised into four blocks 3-5%, 5-10%, 10-20% and 20% and above. This was done by examining each firm’s ownership for each of the blocks. In addition, an OLS regression was run for each block category, where the sum of the block ownership level was used as the dependent variable. The results showed that for the audit, board, industry and index, institutional investors showed a stronger preference for good governance when the ownership stakes were lower. The results are consistent with the theory of limited attention (Hirshleifer and Teoh, 2003), as it was theorised in chapter two that institutions may use a proxy measure for corporate governance because it is simple and easy to understand and is therefore incorporated into economic decisions. The results are also consistent with the agency costs view, that corporate governance reduces monitoring costs, and these are more of an issue for firms with smaller investments, as the cost benefit of active monitoring is less within smaller investments, thus using corporate governance as a substitute for monitoring could be more appealing. Whereas firms with higher ownership stakes are possibly more willing to invest greater time monitoring, thus are less likely to use a proxy service like the one used in this study.

To examine the extent of change in preference on corporate governance after the financial crisis, an interactive dummy was introduced into the regression with a fixed firm effect. In addition, as OLS regression for three periods was used to see if there was a change in the pattern. It was found that there was a change in the pattern. It was found that there was a
change in preference for the audit score and industry score, whereas the other measures were not found to be significant. These results were consistent with the findings of Hawas and Tse (2016) that there was a change in preference for major shareholders. The results correspond with the critical juncture theory discussed in chapter two, that argued that the financial crisis was a critical juncture for investors.

The results from chapter nine showed the differences in preference for the separate institutional investors. Where a fixed firm regression was used to examine the ownership type. It was found there were differences in the association, with no association between a pension fund and bank ownership and corporate governance, this is inconsistent with the view that corporate governance can reduce monitoring costs. Whereas, both hedge funds and investment advisors demonstrated a preference for firms with good corporate governance, whereas insurance firms only showed a significant positive association for the audit score.

10.2 Theoretical and practical implications

10.2.1 Theoretical Implications
The results discussed in the previous section raised some important theoretical implications. Institutional investors preferred to invest in firms with good governance, supporting the results of Chung and Zhang (2011), and there is a greater preference for better corporate governance when the ownership levels are lower. Therefore, the results suggest that investing in firms use good governance to reduce monitoring costs.

There is a theoretical argument that an economic crisis can be a critical juncture (Hall, 1993; Braun, 2015), such as the financial crisis of 2007-8. The results support this view. The thesis argues that the financial crisis was a critical juncture for institutional investors, as there was a shift in practice, and it was especially noticeable for the audit environment, as both the institutions’ and the auditors were subject to later financial regulatory changes (Stewardship Code and EU directive on auditing).

The theoretical argument that investors have limited attention (Hirshleifer and Teoh, 2003), which means that complex information is not incorporate into investment choices, is supported by the results of institutional preference on audit environment. As both Chung
and Zhang (2011) and Hawas and Tse (2016) did not find a significant association between for individual audit factors. The key difference is that this study used ISS (RiskMetrics) to measure the audit environment, which is easier to incorporate into investment decisions, as it is simple and easy to obtain and understand.

10.2.1 Practical Implications
One of the most interesting elements of the findings is the lack of institutional interest in remunerations, before the financial crisis. From the results this lack of interest was not just one type of institution, none of the institutions exhibited a preference for good corporate governance in this area. The lack of preference for good remuneration practices by institutions could be part of the reason why directors’ remunerations are rising (Alissa, 2015) and that remuneration packages encouraged myopic behaviour before the financial crisis (Kay, 2012). These results clearly provide a contribution to the literature.

The insights gained from this study may be of assistance to policymakers and regulators, as it helps provide evidence on the importance of corporate governance is to institutional shareholders and the lack of interest in the directors’ remunerations policy. This will help regulators in future reviews of corporate governance and institutional share ownership. For example, it is socially desirable to monitor and check directors’ remuneration, as financial institutions did not consider remunerations in their investment decisions, unlike the other areas of corporate governance.

10.3 Limitations and Future research
This section discusses the limitations of the research and how it may have affected the results, which are then future research ideas are linked to them.

The governance score is a proxy for good corporate governance, so cannot completely reflect the governance of a company, as there are factors that cannot be included in codes or an index for example, such as personality type of the CEO. It may be useful to take an alternative approach to this study and survey or interview investor upon their preferences on corporate governance. One particularly interesting group would be large block-holders, to attempt to ascertain the reasons for the apparent lack of interest in corporate governance.
The number of firm years at 1,470, is less than comparable US studies (Chung and Zhang, 2011 and Bushee et al 2014), however in comparison to UK studies in this area the sample size tends to be much smaller, this is part of the cultural differences (Hawas and Tse, 2016; Zalata and Roberts, 2016). To be able to expand the sample size, it would be necessary to extend the study duration.

The study has controlled for time effects with the use of dummy variables and further analysis of the impact of the period on the results. Despite these attempts to control for timing issues, the majority of the observations were made after the financial crisis of 2007-8. This could lead to an unrepresentative sample. It could be that the behaviour changed for institutions immediately after the financial crisis, however, it reverted once the business resumed as usual. The governance score was also reconfigured by RiskMetrics (ISS) in 2010/11 making it impossible to extend the research further, without reconfiguring the score as a whole. A recommendation for further research would be to examine if this relationship held in the following years, one particular area of interest could be remuneration, as CEO pay did take a dip during the financial crisis in the UK, however it recovered to pre-crisis levels by 2010 (Alissa, 2015), so it would be interesting to see if the association between the compensation score and institutional ownership held afterwards and see if it was just a temporary phenomenon.

In the UK the reporting requirements for ownership are 3% and above in the annual report, due to this it was not possible to report on the relationship between institutional ownership at the lower levels. It could be argued that more myopic investors tend to keep their ownership below this threshold and thus this group of shareholders is essentially missing from the analysis. This group of shareholders may not exhibit the same association with corporate governance, as the institutional shareholders above 3% in contrast to US studies. It would be interesting to examine the US data for block-ownership and if see if lower ownership exhibited the same association as the bigger block holders. This would be important as the institutions have been criticised in being myopic (Kay, 2012), however, this may just be the shareholders with the smallest stakes, thus excluded from this sample.

It is established in the research that there are differences within the investor types, however, the origin of the investor has not been examined, however, it could be argued that
institutions with different origins are affected by the culture and this could have influenced their governance preference. However, around half of the shares in the UK are owned by foreign shareholders (ONS, 2010), thus further research is needed the difference in preferences for investors from different geographical areas on corporate governance.
References


Han, S., Kang, T., & Rees, L. L. (2009). The association between institutional ownership and audit properties.


Hawas, A., & Tse, C. B. (2016). How corporate governance affects investment decisions of major shareholders in UK listed companies: has the recent credit crunch changed the game?. *Journal of Accounting, Auditing & Finance, 31*(1), 100-133.


IFRS (2016) *IFRS 2 Share based payments*.


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Solomon, J (2013). *Corporate Governance and Accountability*. West Sussex: Wiley


## Table A 1 RiskMetrics Governance Score Detail

<table>
<thead>
<tr>
<th>Board</th>
<th>Description</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Board Composition</td>
<td>This is an evaluation of independent directors balance on the board - where 2/3rds of the board should be independent</td>
</tr>
<tr>
<td>2</td>
<td>Nominating Committee</td>
<td>Independence of the members of the committee - they should be solely independent</td>
</tr>
<tr>
<td>3</td>
<td>Compensation Committee</td>
<td>Independence of the members of the committee - they should be solely independent</td>
</tr>
<tr>
<td>4</td>
<td>Governance Committee</td>
<td>Whether the firm has a governance committee</td>
</tr>
<tr>
<td>5</td>
<td>Board Structure</td>
<td>Annual election of directors</td>
</tr>
<tr>
<td>6</td>
<td>Board Size</td>
<td>The board should have no fewer than 6 members or any more than 15. Ideally it will be between 9 and 12.</td>
</tr>
<tr>
<td>7</td>
<td>Changes in Board Size</td>
<td>Changes in size of the board should be approved by the shareholders first.</td>
</tr>
<tr>
<td>8</td>
<td>Cumulative Voting</td>
<td>Shareholders should have the right to cumulate their votes for directors</td>
</tr>
<tr>
<td>9</td>
<td>Boards Served on - CEO</td>
<td>This provision examines the number of directorships the CEO has, where an upper limit of two public listed companies is recommended.</td>
</tr>
<tr>
<td>10</td>
<td>Boards Served on - Other than CEO</td>
<td>A review of whether the company has a policy to restrict the number of directorships the other directors can have in listed companies. ISS recommends it should be five or fewer of PLC where the less the better</td>
</tr>
<tr>
<td>11</td>
<td>Former CEO;'s</td>
<td>The former CEO should not serve on the board</td>
</tr>
<tr>
<td>12</td>
<td>Chairman/CEOs Separation</td>
<td>Separate is better</td>
</tr>
<tr>
<td>13</td>
<td>Board Guidelines</td>
<td>Board guidelines should be published on an annual basis</td>
</tr>
<tr>
<td>14</td>
<td>Responses to shareholder proposals</td>
<td>The management should take action within 12 months if it was supported by a majority vote</td>
</tr>
<tr>
<td>15</td>
<td>Board attendance</td>
<td>There should be attendance of 75%</td>
</tr>
<tr>
<td>16</td>
<td>Board Vacancies</td>
<td>Shareholders should be able to vote on directors appointments</td>
</tr>
<tr>
<td>17</td>
<td>Related Party Transactions</td>
<td>Directors shouldn't have related party transactions</td>
</tr>
<tr>
<td>Audit</td>
<td>Description</td>
<td>Explanation</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>18</td>
<td>Audit committee</td>
<td>Independence of the members of the committee - they should be solely independent</td>
</tr>
<tr>
<td>19</td>
<td>Audit fees</td>
<td>NAS fees should be less that Audit fees</td>
</tr>
<tr>
<td>20</td>
<td>Audit rotation</td>
<td>There should be public disclosure of rotation policy</td>
</tr>
<tr>
<td>21</td>
<td>Audit ratification</td>
<td>Shareholders should ratify auditors appointment each year</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Charter/Bylaws</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-27 Features of poison pills</td>
</tr>
<tr>
<td>28-29 Voting requirement</td>
</tr>
<tr>
<td>30 Written consent</td>
</tr>
<tr>
<td>31 Special meetings</td>
</tr>
<tr>
<td>32 Board amendments</td>
</tr>
<tr>
<td>33 Capital structure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Anti-Takeover provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>34 anti takeover provisions applications under country laws</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Executive and Directors Compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 cost of option plans</td>
</tr>
<tr>
<td>36-37 option re-pricing</td>
</tr>
<tr>
<td>38 shareholder approval of option plans</td>
</tr>
<tr>
<td>39 compensation Committee interlocks</td>
</tr>
<tr>
<td>40</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>41</td>
</tr>
<tr>
<td>42</td>
</tr>
<tr>
<td>43</td>
</tr>
<tr>
<td>44</td>
</tr>
</tbody>
</table>

**Progressive Practices**

<table>
<thead>
<tr>
<th>45</th>
<th>retirement age for directors</th>
<th>A mandatory age limited for directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>board performance reviews</td>
<td>A policy for board reviews should be disclosed</td>
</tr>
<tr>
<td>47</td>
<td>meeting of outside directors</td>
<td>A policy that states directors should meet without the CEO</td>
</tr>
<tr>
<td>48</td>
<td>CEO succession Plan</td>
<td>There should be a board approved CEO succession plan</td>
</tr>
<tr>
<td>49</td>
<td>Outside advisors available to board</td>
<td>A policy authorising the board to hire its own advisors should be disclosed</td>
</tr>
<tr>
<td>50</td>
<td>Directors resign upon job change</td>
<td>A policy requiring directors to resign upon a change in job status should be disclosed</td>
</tr>
</tbody>
</table>

**Ownership**

<table>
<thead>
<tr>
<th>51</th>
<th>directors ownership</th>
<th>Each director should own shares in the company</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>Executive stock ownership guidelines</td>
<td>Executive should be subject to stock ownership guidelines</td>
</tr>
<tr>
<td>53</td>
<td>Directors stock ownership guidelines</td>
<td>Directors should be subject to stock ownership guidelines</td>
</tr>
<tr>
<td>54</td>
<td>Officer and director stock ownership</td>
<td>Officers and directors should have a significant ownership position in the company's shares</td>
</tr>
</tbody>
</table>

**Directors Education**

| 55  | Directors education | Directors should have done one of ISS's accredited courses |
ISS p 1-43
Appendix B – Results tables for Audit

TABLE B 1 RESULTS FOR CHANGE IN AUDIT SCORE VARIABLE

Table X
Results for change variable for the audit score

The results of this table show the results for the following regression model:

\[
INST\_OWN_{it} = \beta_0 + \beta_1 AUDIT_{it} + \beta_2 \Delta AUDIT\_dummy_{it} + \beta_3 LOG\_MKT\_CAP_{it} + \beta_4 AVERAGE\_TRADE\_VOLUME_{it} + \beta_5 BETA_{it} \\
+ \beta_6 IDORISK_{it} + \beta_7 MARKET\_ADJ\_RETURN_{it} + \beta_8 DEBT\_ASSET_{it} + \beta_9 DIV\_YLD_{it}\beta_7 PE_{it} + \beta_10 ROE_{it} \\
+ \beta_11 PRICE\_LOG_{it} + \epsilon_{it}
\]

Where INST\_OWN_{it} is the ratio of the number of shares held by institutional investors to the total number of shares outstanding, AUDIT is the audit score, developed by Risk Metrics and have a range between 1 to 5, CHANGE AUDIT DUMMY is the a dummy variable capturing the change in audit score from before and after the crisis. AVERAGE\_TRADE\_VOLUME_{it} is the average number of shares traded over the month divided by the shares in issue x 100, BETA_{it} is the market model beta calculated from daily returns measure over a year, IDORISK_{it} is the standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN_{it} returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET_{it} total debt including long and short term divided by total assets x 100; DVD\_YLD_{it} dividend per share/ last price; ROE_{it} net income available for common shareholders divided by average common equity for that year x 100; P\_B_{it} is the LOG of last share price at t. *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIT</td>
<td>2.779 ***</td>
</tr>
<tr>
<td></td>
<td>(3.587)</td>
</tr>
<tr>
<td>CHANGE AUDIT DUMMY</td>
<td>0.739</td>
</tr>
<tr>
<td></td>
<td>(0.551)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-10.811 ***</td>
</tr>
<tr>
<td></td>
<td>(-9.561)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>1.235</td>
</tr>
<tr>
<td></td>
<td>(0.644)</td>
</tr>
<tr>
<td>BETA</td>
<td>2.549</td>
</tr>
<tr>
<td></td>
<td>(1.547)</td>
</tr>
<tr>
<td>IDORISK</td>
<td>-44.831</td>
</tr>
<tr>
<td></td>
<td>(-0.657)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.057</td>
</tr>
<tr>
<td></td>
<td>(-0.439)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.026</td>
</tr>
<tr>
<td></td>
<td>(-0.954)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-2.324</td>
</tr>
<tr>
<td></td>
<td>(-0.990)</td>
</tr>
<tr>
<td>PE</td>
<td>0.009</td>
</tr>
<tr>
<td></td>
<td>(1.607)</td>
</tr>
<tr>
<td>ROE</td>
<td>-1.106</td>
</tr>
<tr>
<td></td>
<td>(-0.750)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>-1.684</td>
</tr>
<tr>
<td></td>
<td>(-1.108)</td>
</tr>
</tbody>
</table>

Year Dummy Included: Yes
Industry Dummies: Yes
Adjusted R2: 0.217
Observations: 1055
F statistic: 14.278
VIF: 1.277
Appendix C - Results tables for Remunerations

**Table C1 Robustness checks for Compensation Score**

Table C1: Results with Robustness checks for Compensation Score

The results of this table show the results for the following regression model:

\[
\text{INST\_OWN}_{i,t} = \alpha + \beta_1 \text{COMP}_{i,t} + \beta_2 \text{LOG\_MKT\_CAP}_{i,t} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{i,t} + \beta_4 \text{BETA}_{i,t} + \beta_5 \text{IDORISK}_{i,t} + \beta_6 \text{MARKET\_ADJ\_RETURN}_{i,t} + \beta_7 \text{DEBT\_ASSET}_{i,t} + \beta_8 \text{DIV\_YLD}_{i,t} + \beta_9 \text{ROE}_{i,t} + \beta_{10} \text{PRICE\_LOG}_{i,t} + \varepsilon_{i,t}
\]

Where \(\text{INST\_OWN}_{i,t}\) is that ratio of the number of shares held by institutional investors to the total number of shares outstanding, \(\text{COMP}\) is the compensation score developed by Risk Metrics and have a range between 1 to 5, \(\text{AVERAGE\_TRADE\_VOLUME}_{i,t}\) average number of shares traded over the month divided by the shares in issue x 100, \(\text{BETA}_{i,t}\) is the market model beta calculated from daily returns measure over a year, \(\text{IDORISK}_{i,t}\) standard deviation of the market model residuals of daily returns measured over a year prior; \(\text{MARKET\_ADJ\_RETURN}_{i,t}\) returns on share for 1 year less risk free rate divided by beta for share; \(\text{DEBT\_ASSET}_{i,t}\) total debt including long and short term divided by total assets x 100; \(\text{DIV\_YLD}_{i,t}\) dividend per share/ last price; \(\text{ROE}_{i,t}\) net income available for common shareholders divided by average common equity for that year x 100; \(\text{PRICE\_LOG}_{i,t}\) Price of stock dividend by trailing EPS; \(\text{PRICE\_LOG}_{i,t}\) is the LOG of last share price at t, *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>ZSL (1st Stage Regression)</th>
<th>ZSL (2nd Stage Regression)</th>
<th>Fixed Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP</td>
<td>-0.194</td>
<td>-0.182</td>
<td>-0.691</td>
</tr>
<tr>
<td>CEO_TENURE</td>
<td>(0.009)</td>
<td>(0.371)</td>
<td>(0.692)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-10.614</td>
<td>-10.339</td>
<td>0.223</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>2.902</td>
<td>3.491</td>
<td>38.158</td>
</tr>
<tr>
<td>BETA</td>
<td>2.412</td>
<td>0.724</td>
<td>-0.030</td>
</tr>
<tr>
<td>IDORISK</td>
<td>0.309</td>
<td>5.660</td>
<td>-0.031</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.013</td>
<td>-0.078</td>
<td>0.079</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.011</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-4.297</td>
<td>-4.416</td>
<td>0.052</td>
</tr>
<tr>
<td>PE</td>
<td>0.003</td>
<td>0.004</td>
<td>6.032</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.043</td>
<td>0.767</td>
<td>(1.942)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>-0.041</td>
<td>-0.038</td>
<td>-1.578</td>
</tr>
</tbody>
</table>

Year Dummy Included: Yes, No; Industry Dummies: Yes, No; Adjusted R2: .175, .018; Observations: 1266, 1266; F Statistic: 13.828, 21.627; VIF: 1.212, 1.018; R coef.: 0.664, 0.724; Comp.: 0.041, 0.048; Std. Dev.: 0.002, 0.004.
### Table C2 Regression Results for Change in Variables for Total Institutional Ownership and Compensation Score

The results of this table show the results for the following regression model:

\[
\Delta \text{INST OWN}_{it} = \beta_0 + \beta_1 \Delta \text{COMP}_{it} + \beta_2 \Delta \log \text{MKT CAP}_{it} + \beta_3 \Delta \text{AVERAGE TRADE VOLUME}_{it} + \\
\beta_4 \Delta \text{BETA}_{it} + \beta_5 \Delta \text{IORDISK}_{it} + \beta_6 \Delta \text{MARKET ADJ RETURN}_{it} + \beta_7 \Delta \text{DEBT ASSET}_{it} + \beta_8 \Delta \text{DIV YLD}_{it} + \\
\beta_9 \Delta \text{PRICE LOG}_{it} + \epsilon_{it}
\]

Where \( \Delta \text{INST OWN}_{it} \) is the change in the ratio of the number of shares held by institutional investors to the total number of shares outstanding, \( \Delta \text{COMP}_{it} \) is the change in the audit score developed by Risk Metrics and have a range between 1 to 5, \( \Delta \text{AVERAGE TRADE VOLUME}_{it} \) is the change in average number of shares traded over the month divided by the shares in issue x 100 from t to +t, \( \Delta \text{DEBT ASSET}_{it} \) is the change in total debt including long and short term divided by total assets x 100 from t to +t, \( \Delta \text{PRICE LOG}_{it} \) is the change in net income available for common shareholders divided by average common equity for that year x 100 from t to +t, \( \Delta \text{PRICE LOG}_{it} \) is the change in Price of stock dividend by trailing EPS from t to +t; \( \Delta \text{IORDISK}_{it} \) is the change in return on share for 1 year less risk free rate divided by beta for share from t to +t; \( \Delta \text{MARKET ADJ RETURN}_{it} \) is the change in returns from t to +t; \( \Delta \text{DEBT ASSET}_{it} \) is the change in returns on share for 1 year less risk free rate divided by beta for share from t to +t; \( \Delta \text{DEBT ASSET}_{it} \) is the change in total debt including long and short term divided by total assets x 100 from t to +t; \( \Delta \text{PRICE LOG}_{it} \) is the change in net income available for common shareholders divided by average common equity for that year x 100 from t to +t; \( \Delta \text{PRICE LOG}_{it} \) is the change in Price of stock dividend by trailing EPS from t to +t; \( \Delta \text{PRICE LOG}_{it} \) is the change in net income available for common shareholders divided by average common equity for that year x 100 from t to +t.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Pooled OLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \Delta \text{COMP} )</td>
<td>0.064</td>
<td>-0.027</td>
</tr>
<tr>
<td>LAGCOMP</td>
<td>-0.077</td>
<td>(0.111)</td>
</tr>
<tr>
<td>( \Delta \log \text{MKT CAP} )</td>
<td>-1.004</td>
<td>-0.890</td>
</tr>
<tr>
<td>( \Delta \text{AVERAGE TRADE VOLUME} )</td>
<td>-9.157</td>
<td>-15.699</td>
</tr>
<tr>
<td>( \Delta \text{BETA} )</td>
<td>-0.758</td>
<td>-1.366</td>
</tr>
<tr>
<td>( \Delta \text{IORDISK} )</td>
<td>-6.376</td>
<td>10.908</td>
</tr>
<tr>
<td>( \Delta \text{MARKET ADJ RETURN} )</td>
<td>-0.035</td>
<td>***</td>
</tr>
<tr>
<td>( \Delta \text{DEBT ASSET} )</td>
<td>0.122</td>
<td>**</td>
</tr>
<tr>
<td>( \Delta \text{DIV YLD} )</td>
<td>0.835</td>
<td>0.265</td>
</tr>
<tr>
<td>( \Delta \text{PRICE LOG} )</td>
<td>0.000</td>
<td>***</td>
</tr>
</tbody>
</table>

* Variables in parentheses are t statistics.

Pooled OLS

<table>
<thead>
<tr>
<th>(0.111)</th>
<th>(0.160)</th>
<th>(0.385)</th>
<th>(0.239)</th>
<th>(0.333)</th>
<th>(0.239)</th>
<th>0.040</th>
<th>(0.385)</th>
<th>(0.160)</th>
<th>(0.114)</th>
<th>1.847</th>
<th>1.051</th>
<th>1.033</th>
</tr>
</thead>
</table>

Year Dummy Included: Yes
Industry Dummies: Yes
Adjusted R2: 0.022
Observations: 737
F Statistic: 1.847
VIF: 1.051

310
### TABLE C3 RESULTS FOR BLOCK-OWNERSHIP FOR COMPENSATIONS SCORE

The results of this table show the results for the following regression model:

\[ BLOCK_{it} = \beta_0 + \beta_1 \text{COMP}_{SCORE, it} + \beta_2 \log \text{MKT}_{CAP, it} + \beta_3 \text{AVERAGE}_{TRADE \_VOLUME, it} + \beta_4 \beta \text{PE}_{t, it} + \epsilon_{it} \]

Where Block is the block ownership at each of the levels, 3-5%, 5-10%, 10-20% and 20% and above. The regression was run with each of these ownership levels, COMP is the Compensation score developed by Risk Metrics and have a range between 1 to 5, AVERAGE\_TRADE\_VOLUME\_it average number of shares traded over the month divided by the shares in issue x 100, BETAT_i is the market model beta calculated from daily returns measure over a year, IDORISK_i standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN\_it returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET\_it total debt including long and short term divided by total assets x 100; DIV\_YLD\_it dividend per share/last price; ROE\_it net income available for common shareholders divided by average common equity for that year x 100; P\_B\_it Price of stock dividend by trailing EPS; PRICE\_LOG\_it is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
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<tr>
<th>Variables</th>
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<th>Pooled OLS Regression</th>
<th>Pooled OLS Regression</th>
<th>Pooled OLS Regression</th>
<th>Pooled OLS Regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3% to 5%</td>
<td>3% to 5%</td>
<td>5% to 10%</td>
<td>5% to 10%</td>
<td>10% to 20%</td>
</tr>
<tr>
<td>COMP</td>
<td>0.041</td>
<td>-0.0339</td>
<td>0.132</td>
<td>-0.114</td>
<td>0.104</td>
</tr>
<tr>
<td></td>
<td>(0.207)</td>
<td>(0.456)</td>
<td>(0.400)</td>
<td>(0.282)</td>
<td>(0.066)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-2.413 **</td>
<td>-2.0022 ***</td>
<td>-4.295 ***</td>
<td>-5.244 ***</td>
<td>-0.294</td>
</tr>
<tr>
<td></td>
<td>(5.716)</td>
<td>(5.602)</td>
<td>(6.053)</td>
<td>(3.310)</td>
<td>(1.238)</td>
</tr>
<tr>
<td>AVERAGE.TRADE_VOLUME</td>
<td>2.108 ***</td>
<td>0.8719</td>
<td>1.609</td>
<td>-0.263</td>
<td>1.6572 *</td>
</tr>
<tr>
<td></td>
<td>(3.149)</td>
<td>(1.685)</td>
<td>(3.038)</td>
<td>(0.192)</td>
<td>(0.091)</td>
</tr>
<tr>
<td>BETA</td>
<td>2.047 ***</td>
<td>1.9108 ***</td>
<td>-0.129</td>
<td>-0.2794</td>
<td>-1.805</td>
</tr>
<tr>
<td></td>
<td>(3.377)</td>
<td>(1.541)</td>
<td>(0.301)</td>
<td>(1.558)</td>
<td>(1.203)</td>
</tr>
<tr>
<td>IODRISK</td>
<td>-36.347</td>
<td>19.2398</td>
<td>-53.677</td>
<td>27.005</td>
<td>32.951</td>
</tr>
<tr>
<td></td>
<td>(1.512)</td>
<td>(1.078)</td>
<td>(0.977)</td>
<td>(1.772)</td>
<td>(1.984)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.016</td>
<td>-0.0389</td>
<td>0.131</td>
<td>0.0907</td>
<td>-0.037</td>
</tr>
<tr>
<td></td>
<td>(0.299)</td>
<td>(0.657)</td>
<td>(1.810)</td>
<td>(0.867)</td>
<td>(0.505)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.009</td>
<td>0.011</td>
<td>0.006</td>
<td>0.0103</td>
<td>0.9761</td>
</tr>
<tr>
<td></td>
<td>(0.992)</td>
<td>(1.212)</td>
<td>(0.426)</td>
<td>(0.676)</td>
<td>(0.021)</td>
</tr>
<tr>
<td>DIV.YLD</td>
<td>-1.719 **</td>
<td>-1.7268 ***</td>
<td>-0.551</td>
<td>-0.5054</td>
<td>-1.224</td>
</tr>
<tr>
<td></td>
<td>(2.005)</td>
<td>(2.592)</td>
<td>(0.458)</td>
<td>(0.214)</td>
<td>(0.141)</td>
</tr>
<tr>
<td>PE</td>
<td>0.0028</td>
<td>0.0028</td>
<td>0.0003</td>
<td>0.0003</td>
<td>0.0032</td>
</tr>
<tr>
<td></td>
<td>(1.439)</td>
<td>(1.464)</td>
<td>(1.498)</td>
<td>(1.547)</td>
<td>(0.895)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.695</td>
<td>0.7902</td>
<td>-1.071</td>
<td>-0.8674</td>
<td>0.899</td>
</tr>
<tr>
<td></td>
<td>(1.302)</td>
<td>(1.492)</td>
<td>(1.399)</td>
<td>(0.953)</td>
<td>(0.962)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>1.197 **</td>
<td>1.3609 ***</td>
<td>0.711</td>
<td>0.8972</td>
<td>-4.428 ***</td>
</tr>
<tr>
<td></td>
<td>(2.163)</td>
<td>(2.637)</td>
<td>(0.853)</td>
<td>(0.978)</td>
<td>(3.998) ***</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.052</td>
<td>0.053</td>
<td>0.107</td>
<td>0.0762</td>
<td>0.068</td>
</tr>
<tr>
<td>Observations</td>
<td>1336</td>
<td>1336</td>
<td>1160</td>
<td>1160</td>
<td>647</td>
</tr>
<tr>
<td>F statistic</td>
<td>4.495</td>
<td>4.6502</td>
<td>6.467</td>
<td>7.0694</td>
<td>3.246</td>
</tr>
<tr>
<td>VIF</td>
<td>1.055</td>
<td>1.055</td>
<td>1.099</td>
<td>1.082</td>
<td>1.073</td>
</tr>
</tbody>
</table>

---

Table C3 Results for Block Ownership with Compensation Score
## Table C4 Logit Regression for Block Ownership and the Compensation Score

The results of this table show the results for the following regression model:

$$\text{BLOCK DUMMY}_i = \beta_0 + \beta_1 \text{COMP} + \beta_2 \text{LOG}_i \text{MKT}_i \text{CAP}_t + \beta_3 \text{AVERAGE}_i \text{TRADE}_t \text{VOLUME}_i + \beta_4 \text{BETA}_i + \beta_5 \text{IODRISK}_i + \beta_6 \text{MARKET}_i \text{ADJ}_i \text{RETURN}_t + \beta_7 \text{DEBT}_i \text{ASSET}_i + \beta_8 \text{DIV}_i \text{YLD}_i + \beta_9 \text{ROE}_i + \beta_{10} \text{PRICE}_i \text{LOG}_i + \epsilon_i$$

Where Block is the block ownership at each of the levels, 3-5%, 5-10%, 10-20% and 20% and above. The regression was run with each of these ownership levels, COMP is the Compensation score developed by Risk Metrics and have a range between 1 to 5, AVERAGE.TRADE.VOLUME is the average number of shares traded over the month divided by the shares in issue x 100, BETA is the market model beta calculated from daily returns measure over a year, IDORISK is the standard deviation of the market model residuals of daily returns measured over a year prior, MARKET_ADJ_RETURN is the returns on share for 1 year less risk free rate divided by beta for share, DEBT_ASSET is the total debt including long and short term divided by total assets x 100, DIV.YLD is the dividend per share/ last price, ROE is the net income available for common shareholders divided by average common equity for that year x 100, P_B is the Price of stock dividend by trailing EPS, PRICE.LOG is the LOG of last share price at t, *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>3% to 5%</th>
<th>5% to 10%</th>
<th>10% to 20%</th>
<th>20% and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP</td>
<td>0.012</td>
<td>0.014</td>
<td>-0.002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.525)</td>
<td>(0.241)</td>
<td>(1.075)</td>
<td>(0.310)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.027*</td>
<td>-0.138***</td>
<td>-0.142***</td>
<td>-0.046***</td>
</tr>
<tr>
<td></td>
<td>(-1.654)</td>
<td>(-6.311)</td>
<td>(-5.277)</td>
<td>(-3.249)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>0.008</td>
<td>0.038</td>
<td>0.016</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.392)</td>
<td>(3.345)</td>
<td>(1.078)</td>
<td>(2.418)</td>
</tr>
<tr>
<td>BETA</td>
<td>0.066***</td>
<td>0.086***</td>
<td>-0.038</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.830)</td>
<td>(2.746)</td>
<td>(-0.983)</td>
<td>(0.789)</td>
</tr>
<tr>
<td>IODRISK</td>
<td>-0.970</td>
<td>-1.314</td>
<td>1.826</td>
<td>0.645</td>
</tr>
<tr>
<td></td>
<td>(-1.165)</td>
<td>(-1.183)</td>
<td>(1.338)</td>
<td>(0.901)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.048)</td>
<td>(0.218)</td>
<td>(0.796)</td>
<td>(0.291)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(-0.257)</td>
<td>(-0.033)</td>
<td>(0.415)</td>
<td>(2.025)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>0.002</td>
<td>0.005</td>
<td>-0.002</td>
<td>-0.004</td>
</tr>
<tr>
<td></td>
<td>(0.416)</td>
<td>(0.751)</td>
<td>(-0.279)</td>
<td>(-0.796)</td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(-0.505)</td>
<td>(-2.318)</td>
<td>(1.046)</td>
<td>(-1.134)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.000</td>
<td>0.002</td>
<td>-0.003</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(-0.144)</td>
<td>(0.393)</td>
<td>(-0.589)</td>
<td>(-0.691)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.026</td>
<td>0.002</td>
<td>-0.059*</td>
<td>0.009</td>
</tr>
<tr>
<td></td>
<td>(1.246)</td>
<td>(0.059)</td>
<td>(-1.754)</td>
<td>(0.505)</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.025</td>
<td>0.091</td>
<td>0.076</td>
<td>0.02</td>
</tr>
<tr>
<td>Observations</td>
<td>1465</td>
<td>1465</td>
<td>1465</td>
<td>1465</td>
</tr>
<tr>
<td>F Statistic</td>
<td>2.861</td>
<td>8.360</td>
<td>6.988</td>
<td>2.743</td>
</tr>
<tr>
<td>VIF</td>
<td>1.025</td>
<td>1.101</td>
<td>1.082</td>
<td>1.024</td>
</tr>
</tbody>
</table>
### Table C5 Results for Logit Regression with Fixed Firm Effect with the Compensation Score

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fixed Effect Logit 3% to 5%</th>
<th>Fixed Effect Logit 5% to 10%</th>
<th>Fixed Effect Logit 10% to 20%</th>
<th>Fixed Effect Logit 20% and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP</td>
<td>0.007</td>
<td>-0.019</td>
<td>0.016</td>
<td>0.012 ** (0.816) -1.434 (1.117) (1.715)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.111</td>
<td>0.056</td>
<td>-0.187</td>
<td>-0.160 ** (-1.451) 0.500 (-1.513) (-2.525)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>-0.014</td>
<td>0.003</td>
<td>0.046</td>
<td>-0.009 (0.655) (0.094) 1.324 (-0.507)</td>
</tr>
<tr>
<td>BETA</td>
<td>0.042</td>
<td>-0.060</td>
<td>-0.029</td>
<td>0.062 ** (1.333) -1.279 (-0.567) (2.348)</td>
</tr>
<tr>
<td>IODRISK</td>
<td>-1.348</td>
<td>1.672</td>
<td>-0.984</td>
<td>-0.365 (1.866) (1.578) (-0.843) (-0.612)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.000</td>
<td>-0.001 **</td>
<td>0.000</td>
<td>0.000 (0.079) -2.639 (0.110) (0.372)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.000</td>
<td>0.000</td>
<td>0.001</td>
<td>-0.001 * (0.452) (0.375) (1.099) (-1.659)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-0.001</td>
<td>0.000</td>
<td>-0.001</td>
<td>-0.002 (0.111) (0.022) (0.057) (-0.455)</td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000 (0.759) -2.340 (1.537) (-3.743)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.001</td>
<td>0.005</td>
<td>0.002</td>
<td>-0.001 (0.264) (1.316) (0.372) (-0.622)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.035</td>
<td>-0.039</td>
<td>0.011</td>
<td>0.132 ** (0.514) -0.399 (0.103) (2.386)</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (0.316 0.228 0.369 0.37)</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (1465 1465 1465 1465)</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.316</td>
<td>0.228</td>
<td>0.369</td>
<td>0.37 (2.520 1.973 2.928 2.908)</td>
</tr>
<tr>
<td>Observations</td>
<td>1465</td>
<td>1465</td>
<td>1465</td>
<td>1465 (1.461 1.295 1.585 1.579)</td>
</tr>
<tr>
<td>F statistic</td>
<td>2.520</td>
<td>1.973</td>
<td>2.928</td>
<td>2.908</td>
</tr>
<tr>
<td>VIF</td>
<td>1.461</td>
<td>1.295</td>
<td>1.585</td>
<td>1.579</td>
</tr>
</tbody>
</table>
Table X

The results of this table show the results for the following regression model:

\[
\text{INST}_t = \alpha + \beta_1 \text{AUDIT}_t + \beta_2 \text{BOARD}_t + \beta_3 \text{COMP}_t + \beta_4 \text{LOG}_t \text{MKT}_t \text{CAP}_t
+ \beta_5 \text{AVG}_t \text{TRADE}_t \text{VOLUME}_t + \beta_6 \text{BETA}_t + \beta_7 \text{IDORISK}_t + \beta_8 \text{MARKET}_t \text{ADJ}_t \text{RETURN}_t
+ \beta_9 \text{DEBT}_t \text{ASSET}_t + \beta_{10} \text{DIV}_t \text{YLD}_t + \beta_{11} \text{ROE}_t + \beta_{12} \text{P}_t \text{B}_t + \beta_{13} \text{PRICE}_t \text{LOG}_t + \epsilon_t
\]

Where \( \text{INST}_t \) is that ratio of the number of shares held by institutional investors to the total number of shares outstanding, \( \text{AUDIT} \) is the audit score, \( \text{BOARD} \) is the board score and \( \text{COMP} \) is the compensation score developed by Risk Metrics and have a range between 1 to 5, \( \text{AVG}_t \text{TRADE}_t \text{VOLUME}_t \) average number of shares traded over the month divided by the shares in issue x 100, \( \text{IDORISK}_t \) standard deviation of the market model residuals of daily returns measured over a year prior; \( \text{MARKET}_t \text{ADJ}_t \text{RETURN}_t \) returns on share for 1 year less risk free rate divided by beta for share; \( \text{DEBT}_t \text{ASSET}_t \) total debt including long and short term divided by total assets x 100; \( \text{DIV}_t \text{YLD}_t \) dividend per share/last price; \( \text{ROE}_t \) net income available for common shareholders divided by average common equity for that year x 100; \( \text{P}_t \text{B}_t \) Price of stock dividend by trailing EPS; \( \text{PRICE}_t \text{LOG}_t \) is the LOG of last share price at \( t \). *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIT</td>
<td>1.366 **</td>
</tr>
<tr>
<td></td>
<td>(1.926)</td>
</tr>
<tr>
<td>BOARD</td>
<td>2.001 ***</td>
</tr>
<tr>
<td></td>
<td>(2.836)</td>
</tr>
<tr>
<td>COMP</td>
<td>0.142</td>
</tr>
<tr>
<td></td>
<td>(0.296)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-11.081 ***</td>
</tr>
<tr>
<td></td>
<td>(-10.722)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>2.748 *</td>
</tr>
<tr>
<td></td>
<td>(1.673)</td>
</tr>
<tr>
<td>BETA</td>
<td>1.946</td>
</tr>
<tr>
<td></td>
<td>(1.333)</td>
</tr>
<tr>
<td>IDORISK</td>
<td>-19.926</td>
</tr>
<tr>
<td></td>
<td>(-0.340)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.028</td>
</tr>
<tr>
<td></td>
<td>(-0.233)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.028</td>
</tr>
<tr>
<td></td>
<td>(-1.211)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-4.341 **</td>
</tr>
<tr>
<td></td>
<td>(-2.042)</td>
</tr>
<tr>
<td>PE</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>(0.736)</td>
</tr>
<tr>
<td>ROE</td>
<td>-1.285</td>
</tr>
<tr>
<td></td>
<td>(-1.009)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>-0.173</td>
</tr>
<tr>
<td></td>
<td>(-0.128)</td>
</tr>
</tbody>
</table>

Year Dummy Included: Yes
Industry Dummies: No
Adjusted R2: 0.180
Observations: 1465
F statistic: 15.002
VIF: 1.220
Appendix E – Results for overall corporate governance

TABLE E1  REGRESSION RESULTS FOR THE CHANGE IN VARIABLES FOR TOTAL INSTITUTIONAL OWNERSHIP AND THE INDEX SCORE

The results of this table show the results for the following regression model:

\[ \Delta TOT\_OWNERSHIP_{it} = \beta_0 + \beta_1 \Delta INDEX_{it} + \beta_2 \Delta \text{LOG\_MKT\_CAP}_{it} + \beta_3 \Delta \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_4 \Delta \beta_{it} + \beta_5 \Delta \text{MARKET\_ADJ\_RETURN}_{it} + \beta_6 \Delta \text{DEBT\_ASSET}_{it} + \beta_7 \Delta \text{DIV\_YLD}_{it} + \beta_8 \Delta \text{PRICE\_LOG}_{it} + \epsilon_{it} \]

\[ \Delta TOT\_OWNERSHIP_{it} = \beta_0 + \beta_1 \Delta INDEX_{it} + \beta_2 \Delta \text{LOG\_MKT\_CAP}_{it} + \beta_3 \Delta \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_4 \Delta \beta_{it} + \beta_5 \Delta \text{MARKET\_ADJ\_RETURN}_{it} + \beta_6 \Delta \text{DEBT\_ASSET}_{it} + \beta_7 \Delta \text{DIV\_YLD}_{it} + \beta_8 \Delta \text{PRICE\_LOG}_{it} + \epsilon_{it} \]

Where \( \Delta \text{INST\_OWN}_{it} \) is the change in the ratio of the number of shares held by institutional investors to the total number of shares outstanding, \( \Delta \text{INDEX} \) is the change in index score developed by Risk Metrics and have a range between 1 to 100, \( \Delta \text{AVERAGE\_TRADE\_VOLUME}_{it} \) is the change in average number of shares traded over the month divided by the shares in issue x 100 from \( t \) to +\( t \), \( \Delta \beta_{it} \) is the change in market model beta calculated from daily returns measured over a year from \( t \) to +\( t \), \( \Delta \text{DORISK}_{it} \) is the change in standard deviation of the market model residuals of daily returns measured over a year prior from \( t \) to +\( t \); \( \Delta \text{MARKET\_ADJ\_RETURN}_{it} \) the change in returns on share for 1 year less risk free rate divided by beta for share from \( t \) to +\( t \); \( \Delta \text{DEBT\_ASSET}_{it} \) is the change in total debt including long and short term divided by total assets x 100 from \( t \) to +\( t \); \( \Delta \text{DIV\_YLD}_{it} \) is the change in dividend per share/ last price from \( t \) to +\( t \); \( \Delta \text{ROE}_{it} \) is the change in net income available for common shareholders divided by average common equity for that year x 100 from \( t \) to +\( t \); \( \Delta \text{PRICE\_LOG}_{it} \) is the change in LOG of last share price at \( t \) from \( t \) to +\( t \); *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the \( t \) statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Pooled OLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \Delta \text{INDEX} )</td>
<td>0.046</td>
<td>0.054</td>
</tr>
<tr>
<td></td>
<td>(0.759)</td>
<td>(1.359)</td>
</tr>
<tr>
<td>( \Delta \text{LOG_MKT_CAP} )</td>
<td>-0.045</td>
<td>-0.912</td>
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<tr>
<td></td>
<td>(-1.016)</td>
<td>(-0.678)</td>
</tr>
<tr>
<td>( \Delta \text{AVERAGE_TRADE_VOLUME} )</td>
<td>-1.131</td>
<td>-15.843</td>
</tr>
<tr>
<td></td>
<td>(-0.829)</td>
<td>(-0.131)</td>
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<tr>
<td>( \Delta \beta_{it} )</td>
<td>-0.875</td>
<td>-1.490</td>
</tr>
<tr>
<td></td>
<td>(-0.499)</td>
<td>(-0.197)</td>
</tr>
<tr>
<td>( \Delta \text{PRICE_LOG} )</td>
<td>-2.837</td>
<td>9.642</td>
</tr>
<tr>
<td></td>
<td>(-0.959)</td>
<td>(0.352)</td>
</tr>
<tr>
<td>( \Delta \text{MARKET_ADJ_RETURN} )</td>
<td>-0.036</td>
<td>-0.034</td>
</tr>
<tr>
<td></td>
<td>(-3.029)</td>
<td>(-2.846)</td>
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<tr>
<td>( \Delta \text{DEBT_ASSET} )</td>
<td>0.119</td>
<td>0.035</td>
</tr>
<tr>
<td></td>
<td>(2.120)</td>
<td>(0.932)</td>
</tr>
<tr>
<td>( \Delta \text{DIV_YLD} )</td>
<td>0.714</td>
<td>0.263</td>
</tr>
<tr>
<td></td>
<td>(0.285)</td>
<td>(1.031)</td>
</tr>
<tr>
<td>( \Delta \text{PE} )</td>
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<td>0.000</td>
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<tr>
<td>( \Delta \text{ROE} )</td>
<td>0.053</td>
<td>0.069</td>
</tr>
<tr>
<td></td>
<td>(0.516)</td>
<td>(0.684)</td>
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<tr>
<td>( \Delta \text{PRICE_LOG} )</td>
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<td>(-0.197)</td>
</tr>
<tr>
<td>Year Dummy Included</td>
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<td>Yes</td>
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<tr>
<td>Industry Dummies</td>
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<td>Yes</td>
</tr>
<tr>
<td>Adjusted R2</td>
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<td>0.016</td>
</tr>
<tr>
<td>Observations</td>
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<td>1034</td>
</tr>
<tr>
<td>F statistic</td>
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<td>1.879</td>
</tr>
<tr>
<td>VIF</td>
<td>1.027</td>
<td>1.016</td>
</tr>
</tbody>
</table>
The results of this table show the results for the following regression model:

$$
\Delta TOT\_OWNERSHIP_{it} = \beta_0 + \beta_1 \Delta INDEX_{it} + \beta_2 \Delta \text{LOG\_MKT\_CAP}_{it} + \beta_3 \Delta \text{AVERAGE\_TRADE\_VOLUME}_{it} + \\
\beta_4 \Delta \text{BETA}_{it} + \beta_5 \Delta \text{IDORISK}_{it} + \beta_6 \Delta \text{MARKET\_ADJ\_RETURN}_{it} + \beta_7 \Delta \text{DEBT\_ASSET}_{it} + \beta_8 \Delta \text{DIV\_YLD}_{it} + \\
\beta_9 \Delta \text{LOG\_MKT\_CAP}_{it} + \beta_{10} \Delta \text{BETA}_{it} + \beta_{11} \Delta \text{IDORISK}_{it} + \beta_{12} \Delta \text{MARKET\_ADJ\_RETURN}_{it} + \beta_{13} \Delta \text{DEBT\_ASSET}_{it} + \beta_{14} \Delta \text{DIV\_YLD}_{it} + \epsilon_{it}
$$

Where $\Delta \text{INST\_OWN}_t$ is the change in the ratio of the number of shares held by institutional investors to the total number of shares outstanding, $\Delta \text{INDEX}_t$ is the change in index score developed by Risk Metrics and have a range between 1 to 100, $\Delta \text{AVERAGE\_TRADE\_VOLUME}_t$ is the change in average number of shares traded over the month divided by the shares in issue x 100 from t to +t, $\Delta \text{BETA}_t$ is the change in market model beta calculated from daily returns measure over a year from t to +t, $\Delta \text{IDORISK}_t$ is the change in standard deviation of the market model residuals of daily returns measured over a year prior from t to +t, $\Delta \text{MARKET\_ADJ\_RETURN}_t$ is the change in returns on share for 1 year less risk free rate divided by beta for share, $\Delta \text{DEBT\_ASSET}_t$ is the change in total debt including long and short term divided by total assets x 100, $\Delta \text{DIV\_YLD}_t$ is the change in dividend per share/ last price from t to +t, $\Delta \text{PRICE\_LOG}_t$ is the change in log of last share price at t from t to +t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively. The numbers in the parentheses are the t statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Pooled OLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\Delta \text{INDUSTRY}$</td>
<td>0.050</td>
<td>0.051</td>
</tr>
<tr>
<td></td>
<td>(1.017)</td>
<td>(1.479)</td>
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<tr>
<td>$\Delta \text{LOG_MKT_CAP}$</td>
<td>-0.030</td>
<td>-0.030</td>
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<tr>
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<td>(-0.784)</td>
<td>(-0.784)</td>
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<tr>
<td>$\Delta \text{AVERAGE_TRADE_VOLUME}$</td>
<td>-1.304</td>
<td>-0.961</td>
</tr>
<tr>
<td></td>
<td>(-0.956)</td>
<td>(-0.715)</td>
</tr>
<tr>
<td>$\Delta \text{BETA}$</td>
<td>-10.448</td>
<td>-17.423</td>
</tr>
<tr>
<td></td>
<td>(-0.067)</td>
<td>(0.144)</td>
</tr>
<tr>
<td>$\Delta \text{IDORISK}$</td>
<td>-0.648</td>
<td>-1.435</td>
</tr>
<tr>
<td></td>
<td>(-0.371)</td>
<td>(-1.036)</td>
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<tr>
<td>$\Delta \text{MARKET_ADJ_RETURN}$</td>
<td>2.889</td>
<td>10.312</td>
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<tr>
<td></td>
<td>(0.097)</td>
<td>(0.377)</td>
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<tr>
<td>$\Delta \text{DEBT_ASSET}$</td>
<td>-0.034 ***</td>
<td>-0.034 ***</td>
</tr>
<tr>
<td></td>
<td>(-2.921)</td>
<td>(-2.849)</td>
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<tr>
<td>$\Delta \text{DIV_YLD}$</td>
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<td>0.035</td>
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<td></td>
<td>(2.261)</td>
<td>(0.931)</td>
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<tr>
<td>$\Delta \text{LOG_MKT_CAP}$</td>
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<td>0.263</td>
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<td>(1.028)</td>
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<td>0.000</td>
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<tr>
<td></td>
<td>(0.487)</td>
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<td>$\Delta \text{IDORISK}$</td>
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<tr>
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</tr>
<tr>
<td></td>
<td>(0.132)</td>
<td>(-0.193)</td>
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</tbody>
</table>

Year Dummy Included: Yes
Industry Dummies: Yes
Adjusted R2: 0.041
Observations: 740
F statistic: 2.406
VIF: 1.025
Appendix F – Pension Results

Table F1 Regression Results for Pension Fund Ownership and Index

The results of this table show the results for the following regression model:

\[ \text{PENSION}_{it} = \alpha + \beta_1 \text{INDEX}_t + \beta_2 \text{LOG}_t + \beta_3 \text{MARKET}_t + \beta_4 \text{DEBT}_t + \beta_5 \text{ROI}_t + \beta_6 \text{PE}_t + \beta_7 \text{PRICE}_t + \beta_8 \text{LOG}_t + \epsilon_{it} \]

Where PENSION\(i,t\) is the ratio of the number of shares held by Pension Funds to the total number of shares outstanding, INDEX\(_t\) is the index score developed by Risk Metrics and have a range between 1 to 100, AVERAGE\_TRADE\_VOLUME\(_t\) is average number of shares traded over the month divided by the shares in issue x 100, DEBT\(_t\) is the market model beta calculated from daily returns measured over a year, IDORISK\(_t\) is the standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN\(_t\) returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET\(_t\) is total debt including long and short term divided by total assets x 100; DIV\_YLD\(_t\) dividend per share/ last price; PRICE\_LOG\(_t\) is the LOG of last share price at t. *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>2SL (1st-Stage Regression)</th>
<th>2SL (2nd Stage Regression)</th>
<th>Fixed Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDEX</td>
<td>-0.001</td>
<td>-0.0031</td>
<td>-0.08</td>
<td>-0.008</td>
<td>-0.009</td>
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<tr>
<td></td>
<td>(0.168)</td>
<td>(0.302)</td>
<td>(1.480)</td>
<td>(0.716)</td>
<td>(1.058)</td>
</tr>
<tr>
<td>CEO_TENURE</td>
<td></td>
<td></td>
<td>-0.214</td>
<td>***</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.000)</td>
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</tr>
<tr>
<td>LOG_MKT_CAP</td>
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<td>-0.878</td>
<td>0.393</td>
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<tr>
<td></td>
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<td>***</td>
<td>***</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4.423)</td>
<td>(6.220)</td>
<td>(4.931)</td>
<td>(4.348)</td>
<td>(0.590)</td>
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<tr>
<td>AVERAGE_TRADE_VOLUME</td>
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<td>0.2691</td>
<td>0.566</td>
<td>0.404</td>
<td>0.331</td>
</tr>
<tr>
<td></td>
<td>(0.123)</td>
<td>(1.075)</td>
<td>(0.607)</td>
<td>(1.407)</td>
<td>(0.331)</td>
</tr>
<tr>
<td>BETA</td>
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<td>-0.5209</td>
<td>0.931</td>
<td>-0.562</td>
<td>-0.141</td>
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<tr>
<td></td>
<td>**</td>
<td>**</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
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<td>(2.157)</td>
<td>(0.968)</td>
<td>(1.865)</td>
<td>(0.510)</td>
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<tr>
<td>IDORISK</td>
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<td></td>
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<td>**</td>
<td></td>
<td>**</td>
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<tr>
<td></td>
<td>(0.957)</td>
<td>(2.500)</td>
<td>(0.684)</td>
<td>(2.125)</td>
<td>(0.306)</td>
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<tr>
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<td>0.032</td>
<td>0.055</td>
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<tr>
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<td>(0.602)</td>
<td>(0.009)</td>
<td>(1.246)</td>
<td>(3.330)</td>
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<td>DEBT_ASSET</td>
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<td>-0.0008</td>
<td>0.090</td>
<td>-0.001</td>
<td>-0.005</td>
</tr>
<tr>
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<td>(0.173)</td>
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<td>(5.967)</td>
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<tr>
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</tr>
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<td></td>
<td>**</td>
<td>**</td>
<td></td>
<td>-0.365</td>
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</tr>
<tr>
<td></td>
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<td>(1.981)</td>
<td>(0.877)</td>
<td>(0.874)</td>
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</tr>
<tr>
<td></td>
<td>(0.716)</td>
<td>(0.824)</td>
<td>(0.684)</td>
<td>(2.125)</td>
<td>(0.306)</td>
</tr>
<tr>
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<td></td>
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<td>(1.994)</td>
<td>(1.684)</td>
<td>(1.489)</td>
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<tr>
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<td>(0.035)</td>
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</table>

Year Dummy Included: Yes
Industry Dummy Included: No

Adjusted R2: 0.052
Observations: 1470
F Statistic: 4.828
VIF: 1.054

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### Table F2 Regression results for pension fund ownership and Industry score

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>2SL (1st Stage Regression)</th>
<th>2SL (2nd Stage Regression)</th>
<th>Fixed Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO_TENURE</td>
<td>0.002</td>
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<td>-0.262</td>
<td>-0.004</td>
<td>-0.004</td>
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<td>LOG_MKT_CAP</td>
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<td>-10.626</td>
<td>2.704</td>
<td>***</td>
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<tr>
<td>(3.797)</td>
<td>(-5.594)</td>
<td>***</td>
<td>(3.618)</td>
<td>(-3.560)</td>
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<td>1.344</td>
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<td>(0.981)</td>
<td></td>
<td>(1.203)</td>
<td>(1.339)</td>
<td>(0.308)</td>
</tr>
<tr>
<td>BETA</td>
<td>-0.704</td>
<td>***</td>
<td>-0.6777</td>
<td>***</td>
<td>-0.764</td>
</tr>
<tr>
<td>(2.673)</td>
<td>(-3.143)</td>
<td>***</td>
<td>(1.366)</td>
<td>(-2.635)</td>
<td>(-0.530)</td>
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<tr>
<td>(1.085)</td>
<td>(-2.598)</td>
<td>***</td>
<td>(-0.858)</td>
<td>(-2.239)</td>
<td>(0.313)</td>
</tr>
<tr>
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<td>0.0257</td>
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<td>0.055</td>
</tr>
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<td>(1.110)</td>
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<td>(0.133)</td>
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<td>(-1.426)</td>
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<td>(0.576)</td>
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<td>(0.085)</td>
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<td>PE</td>
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<td>-0.004</td>
<td>-0.004</td>
<td>0.000</td>
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<td>(0.580)</td>
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<td>(-0.858)</td>
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<td>ROE</td>
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<td>(-1.534)</td>
<td>(-2.126)</td>
<td>**</td>
<td>(0.732)</td>
<td>(-1.534)</td>
<td>(-2.059)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.140</td>
<td>0.12</td>
<td>0.022</td>
<td>0.035</td>
<td>-0.503</td>
</tr>
<tr>
<td>(0.566)</td>
<td>(0.621)</td>
<td></td>
<td>(0.021)</td>
<td>(0.133)</td>
<td>(-0.836)</td>
</tr>
</tbody>
</table>

Year Dummy Included: Yes
Industry Dummies: Yes
Adjusted R2: 0.035
Observations: 1470
F Statistic: 5.181
VIF: 1.037

Where PENSION, is that ratio of the number of shares held by Pension Funds to the total number of shares outstanding, INDUSTRY is the index score developed by Risk Metrics and have a range between 1 to 100, AVERAGE_TRADE_VOLUME, is average number of shares traded over the month divided by the shares in issue x 100, BETA, is the market model beta calculated from daily returns measure over a year, IODRISK, is standard deviation of the market model residuals of daily returns measured over a year prior; MARKET_ADJ_RETURN, is returns on share for 1 year less risk free rate divided by beta for share; DEBT_ASSET, is total debt including long and short term divided by total assets x 100; DIV_YLD, is dividend per share/ last price; ROE, is net income available for common shareholders divided by average common equity for that year x 100; P_E is Price of stock dividend by trailing EPS; PRICE_LOG, is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.
### Table F3 Regression Results for Pension Fund Ownership and the Audit Score

The results of this table show the results for the following regression model:

\[
PENSION_{it} = \alpha + \beta_1AUDIT_{it} + \beta_2\text{LOG}_\text{MKT}_\text{CAP}_{it} + \beta_3\text{AVERAGE}_\text{TRADE}_\text{VOLUME}_{it} + \beta_4\text{BETA}_{it} + \beta_5\text{IDORISK}_{it} + \beta_6\text{MARKET}_\text{ADJ}_\text{RETURN}_{it} + \beta_7\text{DEBT}_\text{ASSET}_{it} + \beta_8\text{DIV}_\text{YLD}_{it} + \beta_9\text{ROE}_{it} + \beta_{10}\text{PRICE}_\text{LOG}_{it} + \epsilon_{it}
\]

Where \(PENSION_{it}\) is the market model beta calculated from daily returns measured over a year, \(\text{IDORISK}_{it}\) is the standard deviation of the market model residuals of daily returns measured over a year prior; \(\text{MARKET}_\text{ADJ}_\text{RETURN}_{it}\) is the LOG of last share price at \(t\). *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>2SL (1st Stage Regression)</th>
<th>2SL (2nd Stage Regression)</th>
<th>Fixed Effect</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Regression</td>
<td>Regression</td>
<td></td>
</tr>
<tr>
<td>AUDIT</td>
<td>-0.038</td>
<td>-0.0799</td>
<td></td>
<td>-0.036</td>
<td>-0.054</td>
</tr>
<tr>
<td></td>
<td>(0.306)</td>
<td>(0.567)</td>
<td></td>
<td>(0.166)</td>
<td>(0.484)</td>
</tr>
<tr>
<td>CEO_TENURE</td>
<td></td>
<td></td>
<td>-0.017***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.861***</td>
<td>-10.626***</td>
<td>0.177***</td>
<td>-0.897***</td>
<td>0.445</td>
</tr>
<tr>
<td></td>
<td>(-4.435)</td>
<td>(-6.342)</td>
<td>(4.195)</td>
<td>(-4.412)</td>
<td>(0.656)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLME</td>
<td></td>
<td></td>
<td>-0.187***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.074</td>
<td>0.2623</td>
<td>(-3.087)</td>
<td>(1.399)</td>
<td>(0.344)</td>
</tr>
<tr>
<td></td>
<td>(0.236)</td>
<td>(1.067)</td>
<td>(1.067)</td>
<td>(1.067)</td>
<td>(1.067)</td>
</tr>
<tr>
<td>BETA</td>
<td>-0.575**</td>
<td>-0.5521**</td>
<td>0.003</td>
<td>-0.605**</td>
<td>-0.161</td>
</tr>
<tr>
<td></td>
<td>(-2.064)</td>
<td>(-2.192)</td>
<td>(0.043)</td>
<td>(-1.974)</td>
<td>(-0.567)</td>
</tr>
<tr>
<td>IDORISK</td>
<td>-10.628**</td>
<td>-18.728**</td>
<td>9.536***</td>
<td>-18.862**</td>
<td>4.783</td>
</tr>
<tr>
<td></td>
<td>(-9.55)</td>
<td>(-2.405)</td>
<td>(-1.265)</td>
<td>(-2.060)</td>
<td>(0.306)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.024</td>
<td>0.0268</td>
<td>-0.007</td>
<td>0.032</td>
<td>0.055</td>
</tr>
<tr>
<td></td>
<td>(0.040)</td>
<td>(0.059)</td>
<td>(-1.035)</td>
<td>(-1.211)</td>
<td>(3.300)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.000</td>
<td>0.0009</td>
<td>0.004***</td>
<td>-0.001</td>
<td>-0.005</td>
</tr>
<tr>
<td></td>
<td>(-0.048)</td>
<td>(-0.059)</td>
<td>(3.734)</td>
<td>(-0.169)</td>
<td>(-0.729)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-0.442</td>
<td>-0.4406**</td>
<td>-0.355</td>
<td>-0.374</td>
<td>0.044</td>
</tr>
<tr>
<td></td>
<td>(-1.091)</td>
<td>(-1.986)</td>
<td>(0.686)</td>
<td>(-0.891)</td>
<td>(0.090)</td>
</tr>
<tr>
<td>PE</td>
<td>-0.001</td>
<td>-0.0006</td>
<td>0.000</td>
<td>-0.001</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(-0.070)</td>
<td>(-0.803)</td>
<td>(-0.125)</td>
<td>(-1.178)</td>
<td>(0.306)</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.353</td>
<td>-0.3673*</td>
<td>0.120**</td>
<td>-0.420</td>
<td>-0.384**</td>
</tr>
<tr>
<td></td>
<td>(-1.453)</td>
<td>(-1.954)</td>
<td>(2.098)</td>
<td>(-1.526)</td>
<td>(-1.235)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.088</td>
<td>0.067</td>
<td>0.099*</td>
<td>0.006</td>
<td>-0.497</td>
</tr>
<tr>
<td></td>
<td>(0.343)</td>
<td>(0.328)</td>
<td>(1.696)</td>
<td>(0.023)</td>
<td>(-0.816)</td>
</tr>
</tbody>
</table>

Year Dummy Included | Yes | No | Yes | No | Yes | No |

Industry Dummies Included | Yes | No | Yes | No | Yes | No |

Adjusted R2          | 0.052 | 0.0637 | .103 | .053 | 0.648 |

Observations         | 1465  | 1465  | 1266 | 1266 | 1465 |

F Statistic          | 4.756 | 3.8324 | 8.669 | 4.731 | 6.90 |

VIF                  | 3.054 | 3.068 | 1.115 | 1.056 | 2.844 |
The results of this table show the results for the following regression model:

\[ \text{PENSION}_{it} = \alpha + \beta_1 \text{AUDIT}_{it} + \beta_2 \text{LOG_MKT_CAP}_{it} + \beta_3 \text{AVERAGE_TRADE_VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IODRISK}_{it} + \beta_6 \text{MARKET_ADJ_RETURN}_{it} + \beta_7 \text{DEBT_ASSET}_{it} + \beta_8 \text{PRICE_LOG}_{it} + \beta_9 \text{P_E}_{it} + \beta_{10} \text{PRICE_LOG}_{it} + \epsilon_{it} \]

Where \( \text{PENSION}_{it} \) is that ratio of the number of shares held by Pension Funds to the total number of shares outstanding, \( \text{AUDIT}_{it} \) is the audit score developed by Risk Metrics and have a range between 1 to 5, \( \text{AVERAGE_TRADE_VOLUME}_{it} \) average number of shares traded over the month divided by the shares in issue x 100, \( \text{LOG_MKT_CAP}_{it} \) is the market model beta calculated from daily returns measured over a year, \( \text{MARKET_ADJ_RETURN}_{it} \) is returns on share for 1 year less risk free rate divided by beta for share, \( \text{DEBT_ASSET}_{it} \) is total debt including long and short term divided by total assets x 100; \( \text{PRICE_LOG}_{it} \) the LOG of last share price at t. *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Year Dummy Included</th>
<th>Industry Dummies</th>
<th>Year Dummy Included</th>
<th>Industry Dummies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.051</td>
<td>0.0632</td>
<td>0.0632</td>
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<tr>
<td>Observations</td>
<td>1465</td>
<td>1465</td>
<td>1465</td>
</tr>
<tr>
<td>F Statistic</td>
<td>4.795</td>
<td>3.8122</td>
<td>9.864</td>
</tr>
<tr>
<td>VIF</td>
<td>1.054</td>
<td>1.067</td>
<td>1.133</td>
</tr>
</tbody>
</table>
### Table F5 Regression Results for Pension Fund Ownership and Compensation Score

The results of this table show the results for the following regression model:

\[ \text{PENSION}_{it} = \alpha + \beta \text{COMP}_{it} + \beta \text{LOG MKT CAP}_{it} + \beta \text{AVERAGE TRADE VOLUME}_{it} + \beta \text{BETA}_{it} + \beta \text{IDORISK}_{it} + \beta \text{MARKET ADJ RETURN}_{it} + \beta \text{DEBT ASSET}_{it} + \beta \text{ROE}_{it} + \beta \text{PE}_{it} + \beta \text{DIV YLD}_{it} + \beta \text{DEBT ASSET}_{it} + \beta \text{MARKET ADJ RETURN}_{it} + \epsilon_{it} \]

Where PENSION\(_{it}\) is the ratio of the number of shares held by Pension Funds to the total number of shares outstanding. COMP is the board score developed by Risk Metrics and have a range between 1 to 5. AVERAGE TRADE VOLUME\(_{it}\) average number of shares traded over the month divided by the shares in issue x 100. BETA\(_{it}\) is the market model beta calculated from daily returns measured over a year; IDORISK\(_{it}\) standard deviation of the market model residuals of daily returns measured over a year prior; MARKET ADJ RETURN\(_{it}\) returns on share for 1 year less risk free rate divided by beta for share; DEBT ASSET\(_{it}\) total debt including long and short term divided by total assets x 100; DIV YLD\(_{it}\) dividend per share/last price; ROE\(_{it}\) net income available for common shareholders divided by average common equity for that year x 100; P_B\(_{it}\) Price of stock dividend by trailing EPS; PRICE LOG\(_{it}\) is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>2SL (1st Stage Regression)</th>
<th>2SL (2nd Stage Regression)</th>
<th>Fixed Effect</th>
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</thead>
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<tr>
<td>COMP</td>
<td>-0.160</td>
<td>-0.1345</td>
<td>(-1.776)</td>
<td>-0.157</td>
<td>(-1.694)</td>
</tr>
<tr>
<td>CEO_TENURE</td>
<td></td>
<td></td>
<td>(-0.007)</td>
<td></td>
<td>(-1.345)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.844</td>
<td>***</td>
<td>(-4.377)</td>
<td>***</td>
<td>0.473</td>
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<td>AVERAGE_TRADE_VOLUME</td>
<td>0.041</td>
<td>0.2191</td>
<td>(0.131)</td>
<td>***</td>
<td>0.340</td>
</tr>
<tr>
<td>BETA</td>
<td>-0.559</td>
<td>**</td>
<td>(-2.027)</td>
<td>***</td>
<td>-0.132</td>
</tr>
<tr>
<td>IODRISK</td>
<td>-9.626</td>
<td>**</td>
<td>(-0.869)</td>
<td>***</td>
<td>5.540</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.025</td>
<td>0.0284</td>
<td>(0.097)</td>
<td>***</td>
<td>0.055</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.001</td>
<td></td>
<td>(-0.152)</td>
<td>***</td>
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</tr>
<tr>
<td>DIV_YLD</td>
<td>-0.460</td>
<td>-0.438</td>
<td>(-1.140)</td>
<td>***</td>
<td>0.036</td>
</tr>
<tr>
<td>PE</td>
<td>-0.001</td>
<td></td>
<td>(-0.682)</td>
<td>***</td>
<td>0.000</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.361</td>
<td></td>
<td>(-1.497)</td>
<td>***</td>
<td>-0.391</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.110</td>
<td>0.0882</td>
<td>(0.429)</td>
<td>***</td>
<td>-0.472</td>
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<table>
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<th>Year Dummy Included</th>
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<th>No</th>
<th>No</th>
<th>No</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted R2</td>
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<td>0.0647</td>
<td>.045</td>
<td>.055</td>
<td>0.649</td>
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<td>1465</td>
<td>1271</td>
<td>1271</td>
<td>1465</td>
<td></td>
</tr>
<tr>
<td>F Statistic</td>
<td>4.948</td>
<td>3.7798</td>
<td>4.156</td>
<td>4.888</td>
<td>6.92</td>
<td></td>
</tr>
<tr>
<td>VIF</td>
<td>1.056</td>
<td>1.069</td>
<td>1.047</td>
<td>1.058</td>
<td>2.849</td>
<td></td>
</tr>
</tbody>
</table>

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Appendix G – Bank Results

**Table G 1 Regression Results for Bank Ownership and Index Score**

The results of this table show the results for the following regression model:

\[
\text{BANK}_{it} = \alpha + \beta_1 \text{INDEX}_{it} + \beta_2 \text{LOG\_MKT\_CAP}_{it} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_4 \text{DEBT\_ASSET}_{it} \\
+ \beta_5 \text{IDORISK}_{it} + \beta_6 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_7 \text{PRICE\_LOG}_{it} + \beta_8 \text{ROE}_{it} \\
+ \beta_9 \text{PRICE\_LOG}_{it} + \epsilon_{it}
\]

Where \(\text{BANK}_{it}\) is the ratio of the number of shares held by BANK Funds to the total number of shares outstanding, \(\text{INDEX}\) is the index score for overall corporate governance developed by Risk Metrics and have a range between 1 to 100, \(\text{AVERAGE\_TRADE\_VOLUME} \_i,t\) the average number of shares traded over the month divided by the shares in issue x 100, \(\text{BETA}_{it}\) is the market model beta calculated from daily returns measure over a year, \(\text{IDORISK}_{it}\) standard deviation of the market model residuals of daily returns measured over a year prior, \(\text{MARKET\_ADJ\_RETURN}_{it}\) returns on share for 1 year less risk free rate divided by beta for share; \(\text{DEBT\_ASSET} \_i,t\) total debt including long and short term divided by total assets x 100; \(\text{DIV\_YLD}\_i,t\) dividend per share/ last price; \(\text{ROE}\_i,t\) net income available for common shareholders divided by total common equity for that year x 100; \(\text{P\_B}\_it\) Price of stock dividend by trailing EPS; \(\text{PRICE\_LOG}_{it}\) is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>2SL (1st Stage Regression)</th>
<th>2SL (2nd Stage Regression)</th>
<th>Fixed Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO_TENURE</td>
<td></td>
<td></td>
<td>-0.214</td>
<td>-0.007</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>(1.566)</td>
<td>(0.0086)</td>
<td>(1.524)</td>
<td>(1.213)</td>
<td>(0.264)</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.369</td>
<td>***</td>
<td>-10.626</td>
<td>***</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>(-2.750)</td>
<td>(-3.528)</td>
<td>(4.931)</td>
<td>(-2.422)</td>
<td>(-2.679)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>1.100</td>
<td>***</td>
<td>1.1274</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>(5.115)</td>
<td>(4.579)</td>
<td>(0.607)</td>
<td>(5.832)</td>
<td>(1.984)</td>
</tr>
<tr>
<td>BETA</td>
<td>-0.124</td>
<td>-0.1147</td>
<td>0.931</td>
<td>0.031</td>
<td>-0.280</td>
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<tr>
<td></td>
<td>(-0.652)</td>
<td>(-0.654)</td>
<td>(0.968)</td>
<td>(0.153)</td>
<td>(-1.094)</td>
</tr>
<tr>
<td>IDORISK</td>
<td>3.221</td>
<td>1.8663</td>
<td>-5.245</td>
<td>-3.570</td>
<td>-1.100</td>
</tr>
<tr>
<td></td>
<td>(0.419)</td>
<td>(0.264)</td>
<td>(0.684)</td>
<td>(0.593)</td>
<td>(0.244)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>-0.029</td>
<td>*</td>
<td>-0.0288</td>
<td>0.001</td>
<td>0.037</td>
</tr>
<tr>
<td></td>
<td>(-1.805)</td>
<td>(-0.928)</td>
<td>(0.009)</td>
<td>(2.185)</td>
<td>(-1.485)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>0.000</td>
<td>-0.0001</td>
<td>0.090</td>
<td>***</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(0.017)</td>
<td>(0.024)</td>
<td>(5.967)</td>
<td>(-0.444)</td>
<td>(0.141)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-0.351</td>
<td>-0.3479</td>
<td>**</td>
<td>-0.206</td>
<td>-0.294</td>
</tr>
<tr>
<td></td>
<td>(-1.256)</td>
<td>(-2.167)</td>
<td>(0.877)</td>
<td>(-1.056)</td>
<td>(-0.124)</td>
</tr>
<tr>
<td>PE</td>
<td>-0.001</td>
<td>-0.0008</td>
<td>**</td>
<td>-0.002</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(-1.487)</td>
<td>(-2.330)</td>
<td>(-0.684)</td>
<td>(-1.843)</td>
<td>(-0.244)</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.221</td>
<td>-0.2204</td>
<td>1.470</td>
<td>*</td>
<td>-0.056</td>
</tr>
<tr>
<td></td>
<td>(-1.318)</td>
<td>(-1.480)</td>
<td>(1.684)</td>
<td>(-0.306)</td>
<td>(-0.617)</td>
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<tr>
<td>PRICE_LOG</td>
<td>0.130</td>
<td>0.1241</td>
<td>-0.091</td>
<td>0.031</td>
<td>0.290</td>
</tr>
<tr>
<td></td>
<td>(0.741)</td>
<td>(0.905)</td>
<td>(-0.103)</td>
<td>(0.172)</td>
<td>(0.522)</td>
</tr>
</tbody>
</table>

Year Dummy Included

- Industry Dummies
  - Yes: 0.035, 0.0481, 0.125, 0.040, 0.367
  - No: 1.470, 1277, 1277, 1470
- Adjusted R2
  - Yes: 3.520, 3.9344, 10.607, 3.791, 2.86
  - No: 1.036, 1.051, 1.143, 1.042, 1.579

VIF

- Yes: 1.051, 1.143, 1.042, 1.579
- No: 322
### Table G.2 Regression Results for Bank Ownership and Industry Score

The results of this table show the results for the following regression model:

\[
\text{BANK}_{it} = \alpha + \beta_1 \text{INDUSTRY}_{it} + \\
\beta_2 \text{LOG\_MKT\_CAP}_{it} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \\
\beta_4 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_5 \text{DEBT\_ASSET}_{it} + \\
\beta_6 \text{DIV\_YLD}_{it} + \beta_7 \text{ROE}_{it} + \\
\beta_8 \text{CEO\_TENURE}_{it} + \varepsilon_{it}
\]

Where \( \text{INST\_OWN}_{it} \) is the ratio of the number of shares held by institutional investors to the total number of shares outstanding, \( \text{BOARD} \) is the board score developed by RiskMetrics and have a range between 1 to 5, \( \text{AVERAGE\_TRADE\_VOLUME}_{it} \) average number of shares traded over the month divided by the shares in issue x 100, \( \text{BETA}_{i,t} \) is the market model beta calculated from daily returns measure over a year, \( \text{IDORISK}_{i,t} \) standard deviation of the market model residuals of daily returns measured over a year prior; \( \text{MARKET\_ADJ\_RETURN}_{t} \) returns on share for 1 year less risk free rate divided by beta for share; \( \text{DEBT\_ASSET}_{i,t} \) total debt including long and short term divided by total assets x 100; \( \text{DVD\_YLD}_{i,t} \) dividend per share/ last price; \( \text{ROE}_{i,t} \) net income available for common shareholders divided by average common equity for that year x 100; \( \text{P}_{i,t} \) Price of stock dividend by trailing EPS; \( \text{PRICE\_LOG}_{i,t} \) is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
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<tr>
<th>Variables</th>
<th>Indus. 1 (1st Stage Regression)</th>
<th>Indus. 2 (2nd Stage Regression)</th>
<th>Fixed Effect</th>
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</tr>
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Year Dummy Included

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**Table G3 Regression Results for Bank Ownership and Audit Score**

The results of this table show the results for the following regression model:

\[
\text{BANK}_{i,t} = \alpha + \beta_1 \text{AUDIT}_{i,t} + \beta_2 \text{LOG_MKT_CAP}_{i,t} + \beta_3 \text{AVERAGE_TRADE_VOLUME}_{i,t} + \beta_4 \text{DEBT_ASSET}_{i,t} + \\
\beta_5 \text{MARKET_ADJ_RETURN}_{i,t} + \beta_6 \text{DIV_YLD}_{i,t} + \beta_7 \text{ROE}_{i,t} + \beta_8 \text{PE}_{i,t} + \beta_9 \text{PRICE_LOG}_{i,t} + \epsilon_{i,t}
\]

Where \( \text{BANK}_{i,t} \) is the ratio of the number of shares held by bank funds over the total number of shares outstanding, \( \text{INDSTRY} \) is the industry score developed by Risk Metrics and has a range between 1 to 100, \( \text{AVERAGE_TRADE_VOLUME}_{i,t} \) is the average number of shares traded over the month divided by the shares in issue x 100, \( \text{BETA}_{i,t} \) is the market model beta calculated from daily returns measure over a year, \( \text{IDORISK}_{i,t} \) is standard deviation of the market model residuals of daily returns measured over a year prior; \( \text{MARKET_ADJ_RETURN}_{i,t} \) returns on share for 1 year less risk free rate divided by \( \text{PRICE_LOG}_{i,t} \) is the log of last share price at \( t \). *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

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<th>Variables</th>
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<th>2SL (2nd Stage Regression)</th>
<th>Fixed Effect</th>
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<td>-0.782</td>
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<td>0.034</td>
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<tr>
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<td>-0.001</td>
<td>0.001</td>
</tr>
<tr>
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<td>-(1.040)</td>
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<td>PE</td>
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<td>-0.0008</td>
<td>0.000</td>
<td>-0.001</td>
<td>0.000</td>
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<tr>
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<td>-0.109</td>
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<tr>
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<td>-(0.200)</td>
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<tr>
<td>PRICE_LOG</td>
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<td>*</td>
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<td>(0.752)</td>
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<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
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<td>No</td>
<td>No</td>
</tr>
<tr>
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<td>.039</td>
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**TABLE G4 REGRESSION RESULTS FOR BANK OWNERSHIP AND BOARD SCORE**

The results of this table show the results for the following regression model:

\[
\text{BANK}_{it} = \alpha + \beta_1\text{BOARD}_{it} + \beta_2 \text{LOG}_t \text{MKT}_t \text{CAP}_{it} + \beta_3 \text{AVERAGE}_t \text{TRADE}_t \text{VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IDORISK}_{it} + \beta_6 \text{MARKET}_t \text{ADJ}_t \text{RETURN}_{it} + \beta_7 \text{DEBT}_t \text{ASSET}_{it} + \beta_8 \text{DIV}_t \text{YLD}_{it} + \beta_9 \text{ROE}_{it} + \beta_{10} \text{P}_t \text{B}_t \text{CAP}_{it} + \beta_{11} \text{PRICE}_t \text{LOG}_t + \varepsilon_{it}
\]

Where \( \text{BANK}_{it} \) is the ratio of the number of shares held by BANK Funds to the total number of shares outstanding, INDSTRUTY is the industry score developed by Risk Metrics and have a range between 1 to 100, AVERAGE_TRADE_VOLUME\(_t\) average number of shares traded over the month divided by the shares in issue \(x\) 100, \( \text{IDORISK}_{it} \) standard deviation of the market model residuals of daily returns measured over a year prior; \( \text{MARKET}_t \text{ADJ}_t \text{RETURN}_{it} \) returns on share for 1 year less risk free rate divided by \( \beta \) for share; \( \text{DEBT}_t \text{ASSET}_{it} \) total debt included long and short term divided by total assets \(x\) 100; \( \text{DIV}_t \text{YLD}_{it} \) dividend per share/last price; \( \text{ROE}_{it} \) net income available for common shareholders divided by average common equity for that year \(x\) 100; \( \text{P}_t \text{B}_t \text{CAP}_{it} \) Price of stock dividend by trailing EPS; \( \text{PRICE}_t \text{LOG}_t \)\(_t\) is the LOG of last share price at \(t\). *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

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<tr>
<th>Variables</th>
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<th>2SL (2nd Stage Regression)</th>
<th>Fixed Effect</th>
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<td>CEO_TENURE</td>
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<td>(1.157)</td>
<td>(0.004)</td>
<td>(0.966)</td>
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<td>AVERAGE_TRADE_VOLUME</td>
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<td>0.068</td>
<td>1.994 **</td>
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<td>(0.600)</td>
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<td>(0.000)</td>
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<td>0.005 ***</td>
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<td>0.023 0.331</td>
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<td>(1.126)</td>
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<td>0.023</td>
<td>0.068</td>
<td>(0.939)</td>
<td>(0.593)</td>
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<td>Year Dummy Included</td>
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<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummies</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Adjusted R2                | 0.034      | 0.0478      | 0.117                      | 0.040                      | 0.367        |
Observations                | 1465       | 1465        | 1271                      | 1271                      | 1465         |
F Statistic                | 3.487      | 3.9362      | 9.864                      | 3.789                      | 2.85         |
VIF                        | 1.035      | 1.050       | 1.133                      | 1.042                      | 1.580        |
### Table G5 Regression Results for Bank Ownership and Compensation Score

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<th>2SLS (1st Stage Regression)</th>
<th>2SLS (2nd Stage Regression)</th>
<th>Fixed Effect</th>
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<tbody>
<tr>
<td>COMP</td>
<td>-0.039</td>
<td>-0.0355</td>
<td>-0.057</td>
<td>-0.041</td>
<td></td>
</tr>
<tr>
<td>CEO_TENURE</td>
<td>-0.007</td>
<td>(0.123)</td>
<td>-0.017</td>
<td>-1.765</td>
<td>***</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.342 **</td>
<td>-10.626 ***</td>
<td>0.166</td>
<td>***</td>
<td>1.765 ***</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>1.129 ***</td>
<td>1.1264 ***</td>
<td>0.349</td>
<td>***</td>
<td>1.977 **</td>
</tr>
<tr>
<td>BETA</td>
<td>-0.019</td>
<td>-0.0045</td>
<td>-0.014</td>
<td>0.036</td>
<td>-0.284</td>
</tr>
<tr>
<td>IODRISK</td>
<td>(2.540)</td>
<td>(4.363)</td>
<td>(4.457)</td>
<td>(5.713)</td>
<td>(1.977)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>2.275</td>
<td>2.3142</td>
<td>17.676 ***</td>
<td>-2.785</td>
<td>-1.529</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.028 **</td>
<td>-0.0286</td>
<td>0.011</td>
<td>-0.037</td>
<td>-0.022</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>(1.777)</td>
<td>(0.921)</td>
<td>(1.455)</td>
<td>(2.135)</td>
<td>(1.462)</td>
</tr>
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<td>ROE</td>
<td>0.001</td>
<td>0.0007</td>
<td>0.000</td>
<td>-0.001</td>
<td>0.001</td>
</tr>
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<td>PRICE_LOG</td>
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<td>(0.191)</td>
<td>(0.138)</td>
<td>(0.290)</td>
<td>(0.200)</td>
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<td>VIF</td>
<td>0.049</td>
<td>0.346</td>
<td>0.238</td>
<td>0.238</td>
<td>0.078</td>
</tr>
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<td>Year Dummy Included</td>
<td>0.0465</td>
<td>0.1142</td>
<td>0.260 ***</td>
<td>***</td>
<td>0.343</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>0.047 (0.815)</td>
<td>0.081 (3.081)</td>
<td>0.141 (0.141)</td>
<td>0.613</td>
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</tr>
<tr>
<td>Adjusted R2</td>
<td>0.033</td>
<td>0.0468</td>
<td>0.045</td>
<td>0.039</td>
<td>0.367</td>
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<td>1271</td>
<td>1271</td>
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<tr>
<td>F Statistic</td>
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<td>3.8548</td>
<td>4.156</td>
<td>3.746</td>
<td>2.85</td>
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<td>VIF</td>
<td>1.034</td>
<td>1.049</td>
<td>1.047</td>
<td>1.041</td>
<td>1.579</td>
</tr>
</tbody>
</table>

The results of this table show the results for the following regression model:

$$\text{BANK}_{it} = \alpha + \beta_1 \text{COMP}_{it} + \beta_2 \text{LOG}_MKT\_CAP_{it} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IODRISK}_{it} + \beta_6 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_7 \text{DEBT\_ASSET}_{it} + \beta_8 \text{DIV\_YLD}_{it} + \beta_9 \text{ROE}_{it} + \beta_{10} \text{PRICE\_LOG}_{it} + \epsilon_{it}$$

Where $\text{BANK}_{it}$ is the ratio of the number of shares held by Bank Funds to the total number of shares outstanding. INDUSTRY is the industry score developed by Risk Metrics and have a range between 1 to 100, $\text{AVERAGE\_TRADE\_VOLUME}$ is the average number of shares traded over the month divided by the shares in issue x 100, $\text{BETA}_{it}$ is the market model beta calculated from daily returns measured over a year, $\text{IODRISK}_{it}$ is the standard deviation of the market model residuals of daily returns measured over a year prior, $\text{MARKET\_ADJ\_RETURN}_{it}$ returns on share for 1 year less risk free rate divided by beta for share, $\text{DEBT\_ASSET}_{it}$ total debt including long and short term divided by total assets x 100, $\text{DIV\_YLD}_{it}$ dividend per share/last price, $\text{ROE}_{it}$ net income available for common shareholders divided by average common equity for that year x 100; $\text{PRICE\_LOG}_{it}$ is the log of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.
## Appendix H – Insurance Results

### TABLE H1 REGRESSION RESULTS FOR INSURANCE FUND OWNERSHIP AND INDEX SCORE

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>2SL (1st Stage Regression)</th>
<th>2SL (2nd Stage Regression)</th>
<th>Fixed Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDEX</td>
<td>0.004</td>
<td>0.0038</td>
<td>0.002</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.372)</td>
<td>(1.293)</td>
<td>(0.692)</td>
<td>(0.245)</td>
<td></td>
</tr>
<tr>
<td>CEO_TENURE</td>
<td>-0.214</td>
<td>-0.127</td>
<td>-0.199</td>
<td>-0.859</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.009)</td>
<td>(0.072)</td>
<td>(0.074)</td>
<td></td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.201</td>
<td>-0.035</td>
<td>-0.199</td>
<td>-0.859</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>(2.745)</td>
<td>(0.300)</td>
<td>(0.288)</td>
<td>(0.746)</td>
<td></td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>-0.057</td>
<td>-0.0405</td>
<td>-0.037</td>
<td>-1.070</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.485)</td>
<td>(0.607)</td>
<td>(0.352)</td>
<td>(1.070)</td>
<td></td>
</tr>
<tr>
<td>BETA</td>
<td>0.005</td>
<td>0.0001</td>
<td>-0.073</td>
<td>0.084</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.046)</td>
<td>(0.968)</td>
<td>(0.654)</td>
<td>(0.607)</td>
<td></td>
</tr>
<tr>
<td>IDORISK</td>
<td>-6.004</td>
<td>-6.4964</td>
<td>-4.941</td>
<td>2.327</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.435)</td>
<td>(1.684)</td>
<td>(1.481)</td>
<td>(0.527)</td>
<td></td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.004</td>
<td>0.005</td>
<td>0.007</td>
<td>0.006</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.468)</td>
<td>(1.285)</td>
<td>(0.737)</td>
<td>(0.724)</td>
<td></td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.004</td>
<td>-0.0042</td>
<td>-0.004</td>
<td>-0.002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.562)</td>
<td>(2.900)</td>
<td>(2.288)</td>
<td>(2.746)</td>
<td></td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-0.113</td>
<td>-0.1168</td>
<td>-0.168</td>
<td>-0.168</td>
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</tr>
<tr>
<td></td>
<td>(0.742)</td>
<td>(1.205)</td>
<td>(0.877)</td>
<td>(1.067)</td>
<td></td>
</tr>
<tr>
<td>PE</td>
<td>0.000</td>
<td>0.0001</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.273)</td>
<td>(0.216)</td>
<td>(0.084)</td>
<td>(0.103)</td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>0.051</td>
<td>0.0453</td>
<td>0.147</td>
<td>0.028</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.555)</td>
<td>(0.774)</td>
<td>(1.684)</td>
<td>(0.300)</td>
<td></td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.119</td>
<td>0.1211</td>
<td>0.127</td>
<td>0.619</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>(1.245)</td>
<td>(1.245)</td>
<td>(1.262)</td>
<td>(2.050)</td>
<td></td>
</tr>
</tbody>
</table>

Where Insurance \( i, t \) is that ratio of the number of shares held by Insurance firms to the total number of shares outstanding, INDEX is the index score developed by Risk Metrics and have a range between 1 to 100, AVERAGE_TRADE_VOLUME \( i, t \) average number of shares traded over the month divided by the shares in issue x 100, BETA \( i, t \) is the market model beta calculated from daily returns measure over a year, IDORISK \( i, t \) standard deviation of the market model residuals of daily returns measured over a year prior; MARKET_ADJ_RETURN \( i, t \) returns on share for 1 year less risk free rate divided by beta for share; DEBT_ASSET \( i, t \) total debt including long and short term divided by total assets x 100; DIV_YLD \( i, t \) dividend per share/last price; ROE \( i, t \) net income available for common shareholders divided by average common equity for that year x 100; P_B \( i, t \) Price of stock dividend by trailing EPS; PRICE_LOG \( i, t \) is the LOG of last share price at t." }.**", and *** indicated significance at 10%, 5% and 1% levels, respectively.

### Year Dummy Included Industry Dummies

<table>
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<th>Yes</th>
<th>Yes</th>
<th>No</th>
<th>Yes</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted R2</td>
<td>0.019</td>
<td>0.03</td>
<td>.125</td>
<td>.013</td>
<td>0.354</td>
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</tr>
<tr>
<td>Observations</td>
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<td>1470</td>
<td>1277</td>
<td>1277</td>
<td>1470</td>
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<tr>
<td>F Statistic</td>
<td>2.327</td>
<td>3.9344</td>
<td>10.607</td>
<td>1.883</td>
<td>2.76</td>
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<td>VIF</td>
<td>1.019</td>
<td>1.031</td>
<td>1.143</td>
<td>1.013</td>
<td>1.549</td>
<td></td>
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### Table H2 Regression Results for Insurance Fund Ownership and Industry Score

The results of this table show the results for the following regression model:

\[
\text{INSURANCE}_{it} = \alpha + \beta_1 \text{INDUSTRY}_{it} + \beta_2 \text{LOG Mkt_Cap}_{it} + \beta_3 \text{AVERAGE TRADE VOLUME}_{it} + \beta_4 \beta_{\text{AVERAGE TRADE VOLUME}}_{it} + \beta_5 \text{ROE}_{it} + \beta_6 \text{DEBT ASSET}_{it} + \beta_7 \text{DIV YLD}_{it} + \beta_8 \text{ROE}_{it} + \beta_9 \text{PRICE LOG}_{it} + \epsilon_{it}
\]

Where Insurance \(i, t\) is that ratio of the number of shares held by Insurance firms to the total number of shares outstanding, INDEX is the index score developed by Risk Metrics and have a range between 1 to 100, \text{AVERAGE TRADE VOLUME}_{it} is average number of shares traded over the month divided by the shares in issue \(x\) 100, \text{BETA}_{it} is the market model beta calculated from daily returns measure over a year, \text{IDORISK}_{i,t} standard deviation of the market model residuals of daily returns measured over a year prior; MARKET ADJ RETURN\(i,t\) returns on share for 1 year less risk free rate divided by beta for share; DEBT ASSET\(i,t\) total debt including long and short term divided by total assets \(x\) 100; DIV YLD\(i,t\) dividend per share/ last price; ROE\(i,t\) net income available for common shareholders divided by average common equity for that year \(x\) 100; P_B \(i,t\) Price of stock dividend by trailing EPS; PRICE LOG_{it} is the \text{LOG of last share price at t.} **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>2SLS (1st Stage Regression)</th>
<th>2SLS (2nd Stage Regression)</th>
<th>Fixed Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDUSTRY</td>
<td>0.000</td>
<td>-0.000</td>
<td>-0.001</td>
<td>-0.001</td>
<td>0.000</td>
</tr>
<tr>
<td>CEO_TENURE</td>
<td>-0.158</td>
<td>**</td>
<td>**</td>
<td>***</td>
<td>-0.262</td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-2.268</td>
<td>**</td>
<td>2.704</td>
<td>***</td>
<td>-0.862</td>
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<td>AVERAGE_TRADE_VOLUME</td>
<td>-0.074</td>
<td>**</td>
<td>-0.049</td>
<td>-1.065</td>
<td>(0.0564)</td>
</tr>
<tr>
<td>BETA</td>
<td>-0.002</td>
<td>**</td>
<td>-0.109</td>
<td>0.085</td>
<td>0.000</td>
</tr>
<tr>
<td>IDORISK</td>
<td>-6.072</td>
<td>**</td>
<td>-4.577</td>
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<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.005</td>
<td>**</td>
<td>0.007</td>
<td>0.006</td>
<td>0.000</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
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<td>**</td>
<td>-0.004</td>
<td>-0.002</td>
<td>0.749</td>
</tr>
<tr>
<td>DIV_YLD</td>
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<td>0.000</td>
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<tr>
<td>PE</td>
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<td></td>
<td>.000</td>
<td>.000</td>
<td>0.000</td>
</tr>
<tr>
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<td>.028</td>
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<td>PRICE_LOG</td>
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<td>0.619</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummies</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.007</td>
<td></td>
<td>0.014</td>
<td>0.083</td>
<td>0.354</td>
</tr>
<tr>
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<td>1470</td>
<td>1470</td>
</tr>
<tr>
<td>F Statistic</td>
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<td>3.7731</td>
<td>11.543</td>
<td>1.943</td>
</tr>
<tr>
<td>VIF</td>
<td>1.007</td>
<td></td>
<td>1.014</td>
<td>1.091</td>
<td>1.549</td>
</tr>
</tbody>
</table>

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The results of this table show the results for the following regression model:

$$\text{INSURANCE}_{it} = \alpha + \beta_1 \text{AUDIT}_{it} + \beta_2 \text{LOG\_MKT\_CAP}_{it} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IDORISK}_{it} + \beta_6 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_7 \text{DEBT\_ASSET}_{it} + \beta_8 \text{ROE}_{it} + \beta_9 \text{P}_{E_{it}} + \beta_{10} \text{PRICE\_LOG}_{it} + \epsilon_{it}$$

Where Insurance$_{it}$ is the ratio of the number of shares held by Insurance firms to the total number of shares outstanding, INDEX is the index score developed by Risk Metrics and has a range between 1 to 100, AVERAGE\_TRADE\_VOLUME$_{it}$ is the average number of shares traded over the month divided by the shares in issue x 100, BETA$_{it}$ is the market model beta calculated from daily returns over a year, IDORISK$_{it}$ is the standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN$_{it}$ returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET$_{it}$ total debt divided by total assets x 100; DIV\_YLD$_{it}$ is the dividend per share; ROE$_{it}$ is net income available for common shareholders divided by average common equity for that year x 100; P\_B$_{it}$ is the price of stock dividend by trailing EPS; PRICE\_LOG$_{it}$ is the LOG of last share price at $t$. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>2SLS (1st-Stage Regression)</th>
<th>2SLS (2nd Stage Regression)</th>
<th>Fixed Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIT</td>
<td>0.128 (2.700)</td>
<td>0.113 (2.548)</td>
<td>0.109 (2.198)</td>
<td>0.097 (1.717)</td>
<td></td>
</tr>
<tr>
<td>CEO_TENURE</td>
<td>-0.017 (0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG_MKT_CAP</td>
<td>-0.204 (2.788)</td>
<td>-10.626 (3.233)</td>
<td>0.177 (4.195)</td>
<td>-0.216 (2.873)</td>
<td>-0.885 (2.593)</td>
</tr>
<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>(-0.542) (0.062)</td>
<td>(-0.255) (0.043)</td>
<td>-0.187 (3.087)</td>
<td>-0.160 (2.164)</td>
<td>-1.004 (0.517)</td>
</tr>
<tr>
<td>BETA</td>
<td>0.007 (0.064)</td>
<td>0.0058 (0.043)</td>
<td>0.003 (0.043)</td>
<td>-0.070 (1.170)</td>
<td>0.074 (0.517)</td>
</tr>
<tr>
<td>IDORISK</td>
<td>-0.056 (1.443)</td>
<td>-7.788 (3.182)</td>
<td>9.536 (3.682)</td>
<td>-6.044 (3.787)</td>
<td>1.850 (0.509)</td>
</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.005 (0.542)</td>
<td>0.0059 (1.473)</td>
<td>-0.007 (1.305)</td>
<td>0.008 (0.832)</td>
<td>0.006 (0.763)</td>
</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.004 (2.677)</td>
<td>-0.0044 (3.734)</td>
<td>0.004 (3.734)</td>
<td>-0.004 (2.466)</td>
<td>-0.002 (0.679)</td>
</tr>
<tr>
<td>DIV_YLD</td>
<td>-0.109 (1.717)</td>
<td>-0.1129 (1.170)</td>
<td>-0.035 (0.686)</td>
<td>-0.163 (0.505)</td>
<td>-0.167 (0.677)</td>
</tr>
<tr>
<td>PE</td>
<td>0.000 (0.269)</td>
<td>0.0000 (0.219)</td>
<td>0.000 (0.125)</td>
<td>0.000 (0.107)</td>
<td>0.000 (0.509)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.041 (0.450)</td>
<td>0.0349 (0.600)</td>
<td>0.120 (2.098)</td>
<td>0.019 (0.188)</td>
<td>0.024 (0.249)</td>
</tr>
<tr>
<td>PRICE_LOG</td>
<td>0.110 (1.134)</td>
<td>0.1084 (1.116)</td>
<td>0.099 (1.166)</td>
<td>0.117 (1.150)</td>
<td>0.624 (2.038)</td>
</tr>
</tbody>
</table>

Year Dummy Included: Yes, No
Industry Dummies: Yes, No
Adjusted R2: 0.022, 0.0333, 0.103, 0.017, 0.356
Observations: 1465, 1465, 1266, 1266, 1465
F Statistic: 2.589, 2.564, 8.669, 2.120, 2.77
VIF: 1.023, 1.034, 1.115, 1.017, 1.552

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### Table H4 Regression Results for Insurance Fund Ownership and Board Score

The results of this table show the results for the following regression model:

\[
\text{INSURANCE}_{i,t} = \alpha + \beta_1\text{BOARD}_{i,t} + \beta_2\text{LOG\_MKT\_CAP}_{i,t} + \beta_3\text{AVERAGE\_TRADE\_VOLUME}_{i,t} + \beta_4\text{BETA}_{i,t} + \beta_5\text{IDORISK}_{i,t} + \beta_6\text{MARKET\_ADI\_RETURN}_{i,t} + \beta_7\text{DEBT\_ASSET}_{i,t} + \beta_8\text{DIV\_YLD}_{i,t} + \beta_9\text{ROE}_{i,t} + \beta_{10}\text{P\_B}_{i,t} + \beta_{11}\text{PRICE\_LOG}_{i,t} + \epsilon_{i,t}
\]

Where Insurance \(i,t\) is the ratio of the number of shares held by insurance firms to the total number of shares outstanding, INDEX is the index score developed by Risk Metrics and have a range between 1 to 100, AVERAGE\_TRADE\_VOLUME \(i,t\) average number of shares traded over the month divided by the shares in issue x 100, BETA\(i,t\) is the market model beta calculated from daily returns measure over a year, IDORISK\(i,t\) standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADI\_RETURN\(i,t\) returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET \(i,t\) total debt including long and short term divided by total assets x 100; DIV\_YLD\(i,t\) dividend per share/ last price; ROE\(i,t\) net income available for common shareholders divided by average common equity for that year x 100; P\_B \(i,t\) Price of stock dividend by trailing EPS; PRICE\_LOG\(i,t\) is the LOG of last share price at \(t\). *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively.

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<td>(0.571)</td>
<td>(0.623) ***</td>
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<td>-0.0044***</td>
<td>0.005</td>
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Year Dummy Included

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Industry Dummies

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Adjusted R2

| 0.020 |

Observations

| 1465 |

F Statistic

| 2.942 |

VIF

| 1.020 |
The results of this table show the results for the following regression model:

$$\text{INSURANCE}_{it} = \alpha + \beta_1 \text{COMP}_{it} + \beta_2 \text{LOG_MKT_CAP}_{it} + \beta_3 \text{AVERAGE_TRADE_VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IDORISK}_{it} + \beta_6 \text{MARKET_ADJ_RETURN}_{it} + \beta_7 \text{DEBT_ASSET}_{it} + \beta_8 \text{DIV_YLD}_{it} + \beta_9 \text{ROE}_{it} + \epsilon_{it}$$

Where Insurance, the ratio of the number of shares held by insurance firms to the total number of shares outstanding, INDEX is the index score developed by Risk Metrics and have a range between 1 to 100, AVERAGE_TRADE_VOLUME is average number of shares traded over the month divided by the shares in issue x 100, BETA is the market model beta calculated from daily returns measured over a year, IDORISK, the standard deviation of the market model residuals of daily returns measured over a year, MARKET_ADJ_RETURN returns on share for 1 year less risk free rate divided by beta for share, DEBT_ASSET total debt divided by total assets x 100, DIV_YLD dividend per share, PRICE_LOG is the LOG of last share price at t. *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively.

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<td>-0.035</td>
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<td>LOG_MKT_CAP</td>
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<td>-0.189</td>
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Year Dummy Included

- Yes
- No

Industry Dummies

- Yes
- No

Adjusted R2
- 0.018
- 0.0294

Observations
- 1465
- 1465

F Statistic
- 2.900
- 3.8548

VIF
- 1.018
- 1.030

Table H5 Regression Results for Insurance Fund Ownership and Compensation Score

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### Appendix I – Hedge Fund Results

#### Table I 1 Regression Results for Hedge Fund Ownership and Index Score

The results of this table show the results for the following regression model:

$$ HEDGE\_FUND_{it} = \alpha + \beta_1 INDEX_{it} + \beta_2 LOG\_MKT\_CAP_{it} + \beta_3 AVERAGE\_TRADE\_VOLUME_{it} + \beta_4 BETA_{it} + \beta_5 IDORISK_{it} + \beta_6 MARKET\_ADJ\_RETURN_{it} + \beta_7 DEBT\_ASSET_{it} + \beta_8 DIV\_YLD_{it} + \beta_9 ROE_{it} + \beta_{10} P:\_B_{it} + \beta_{11} PRICE\_LOG_{it} + \epsilon_{it} $$

Where $HEDGE\_FUND_{it}$ is the ratio of the number of shares held by hedge funds to the total number of shares outstanding. $INDEX_{it}$ is the index score developed by Risk Metrics and has a range between 1 to 100. $AVERAGE\_TRADE\_VOLUME_{it}$ is the average number of shares traded over the month divided by the shares in issue x 100. $BETA_{it}$ is the market model beta calculated from daily returns measure over a year. $IDORISK_{it}$ is standard deviation of the market model residuals of daily returns measured over a year prior; $MARKET\_ADJ\_RETURN_{it}$ returns on share for 1 year less risk free rate divided by beta for share; $DEBT\_ASSET_{it}$ total debt including long and short term divided by total assets x 100; $DIV\_YLD_{it}$ dividend per share/ last price; $ROE_{it}$ net income available for common shareholders divided by average common equity for that year x 100; $P:\_B_{it}$ Price of stock dividend by trailing EPS; $PRICE\_LOG_{it}$ is the LOG of last share price at $t$. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

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<td>(2.304)</td>
<td>(2.853)</td>
<td>(0.000)</td>
<td>(1.985)</td>
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<td>CEO_TENURE</td>
<td>-0.338</td>
<td>-10.626</td>
<td>-0.264</td>
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<td>(1.958)</td>
<td>(2.674)</td>
<td>(1.563)</td>
<td>(1.946)</td>
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<td>LOG_MKT_CAP</td>
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<td>(0.170)</td>
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<td>(2.061)</td>
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<td>AVERAGE_TRADE_VOLUME</td>
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<td>0.037</td>
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<td>(0.239)</td>
<td>(0.191)</td>
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<td>BETA</td>
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<td>(0.230)</td>
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### Year Dummy Included Industry Dummies

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### Table I2 Regression Results for Hedge Fund Ownership and Industry Score

The results of this table show the results for the following regression model:

\[
\text{HEDGE\_FUND}_{i,t} = \alpha + \beta_{1}\text{INDUSTRY}_{i,t} + \beta_{2}\text{LOG\_MKT\_CAP}_{i,t} + \beta_{3}\text{AVERAGE\_TRADE\_VOLUME}_{i,t} + \beta_{4}\text{BETA}_{i,t} + \beta_{5}\text{IDO\_RISK}_{i,t} + \beta_{6}\text{MARKET\_ADJ\_RETURN}_{i,t} + \beta_{7}\text{DEBT\_ASSET}_{i,t} + \beta_{8}\text{PRICE\_LOG}_{i,t} + \beta_{9}\text{ROE}_{i,t} + \beta_{10}\text{P\_B}_{i,t} + \beta_{11}\text{PRICE\_LOG\_ADJ}_{i,t} + e_{i,t}
\]

Where HEDGE\_FUND\_i,t is that ratio of the number of shares held by hedge funds to the total number of shares outstanding, INDEX is the index score developed by Risk Metrics and have a range between 1 to 100, AVERAGE\_TRADE\_VOLUME\_i,t average number of shares traded over the month divided by the shares in issue x 100, BETA\_i,t is the market model beta calculated from daily returns measure over a year, IDORISK\_i,t standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_ADJ\_RETURN\_i,t returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET\_i,t total debt including long and short term divided by total assets x 100; DIV\_YLD\_i,t dividend per share/ last price; ROE\_i,t net income available for common shareholders divided by average common equity for that year x 100; P\_B\_i,t Price of stock dividend by trailing EPS; PRICE\_LOG\_i,t is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

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Year Dummy Included

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The results of this table show the results for the following regression model:

\[ \text{HEDGE\_FUND}_{i,t} = \alpha + \beta_1\text{AUDIT}_{i,t} + \beta_2\text{LOG\_MKT\_CAP}_{i,t} + \beta_3\text{AVERAGE\_TRADE\_VOLUME}_{i,t} + \beta_4\text{BETA}_{i,t} + \beta_5\text{IDORISK}_{i,t} + \beta_6\text{MARKET\_Adj\_RETURN}_{i,t} + \beta_7\text{DEBT\_ASSET}_{i,t} + \beta_8\text{DIV\_YLD}_{i,t} + \beta_9\text{ROE}_{i,t} + \beta_{10}\text{P}_{i,t} + \beta_{11}\text{PRICE\_LOG}_{i,t} + \epsilon_{i,t} \]

Where \( \text{HEDGE\_FUND}_{i,t} \) is the ratio of the number of shares held by hedge funds to the total number of shares outstanding, INDEX is the index score developed by Risk Metrics and has a range between 1 to 100, AVERAGE\_TRADE\_VOLUME\_t is the average number of shares traded over the month divided by the shares in issue x 100, BETA\_t is the market model beta calculated from daily returns measure over a year, IDORISK\_t standard deviation of the market model residuals of daily returns measured over a year prior; MARKET\_Adj\_RETURN\_t returns on share for 1 year less risk free rate divided by beta for share; DEBT\_ASSET\_t total debt including long and short term divided by total assets x 100; DIV\_YLD\_t dividend per share/ last price; ROE\_t net income available for common shareholders divided by average common equity for that year x 100; P\_B\_t Price of stock dividend by trailing EPS; PRICE\_LOG\_t is the LOG of last share price at \( t \). *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively.

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<th>2SL (2nd Stage Regression)</th>
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<td>-2.101 **</td>
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Table G3
Results for Hedge Fund to Audit

The regression results for hedge fund ownership and audit score are presented in Table G3. The table includes variables such as CEO tenure, log of market capitalization, average trade volume, beta, idiosyncratic risk, market-adjusted return, debt-to-asset ratio, dividend yield, return on equity, price-to-log ratio, and other financial indicators. The results are reported for both pool OLS and Hayes & Cai's methods. The table also includes fixed effects for various dummy variables such as year and industry.
Table 14: Regression Results for Hedge Fund Ownership and Board Score

The results of this table show the results for the following regression model:

\[
\text{HEDGE\_FUND}_{i,t} = \alpha + \beta_1 \text{BOARD}_{i,t} + \beta_2 \text{LOG\_MKT\_CAP}_{i,t} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{i,t} + \beta_4 \text{BETA}_{i,t} + \beta_5 \text{IDORISK}_{i,t} + \beta_6 \text{MARKET\_ADJ\_RETURN}_{i,t} + \beta_7 \text{DEBT\_ASSET}_{i,t} + \beta_8 \text{ROE}_{i,t} + \beta_9 \text{PRICE\_LOG}_{i,t} + \epsilon_{i,t}
\]

Where \( \text{HEDGE\_FUND}_{i,t} \) is that ratio of the number of shares held by hedge funds to the total number of shares outstanding, INDEX is the index score developed by Risk Metrics and have a range between 1 to 100, \( \text{AVERAGE\_TRADE\_VOLUME} \) is average number of shares traded over the month divided by the shares in issue x 100, \( \text{BETA}_{i,t} \) is the market model beta calculated from daily returns measure over a year, \( \text{IDORISK}_{i,t} \) standard deviation of the market model residuals of daily returns measured over a year prior; \( \text{MARKET\_ADJ\_RETURN}_{i,t} \) returns on share for 1 year less risk free rate divided by beta for share; \( \text{DEBT\_ASSET}_{i,t} \) total debt including long and short term divided by total assets x 100; \( \text{DIV\_YLD}_{i,t} \) dividend per share/ last price; \( \text{ROE}_{i,t} \) net income available for common shareholders divided by average common equity for that year x 100; \( \text{P\_B}_{i,t} \) Price of stock dividend by trailing EPS; \( \text{PRICE\_LOG}_{i,t} \) is the LOG of last share price at t.

* ** *** indicated significance at 10%, 5% and 1% levels, respectively.

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Where HEDGE_FUND,i,t is that ratio of the number of shares held by hedge funds to the total number of shares outstanding, INDEX is the index score developed by Risk Metrics and have a range between 1 to 100, AVERAGE_TRADE_VOLUME,i,t is the average number of shares traded over the month divided by the shares in issue x 100, BETAI,t is the market model beta calculated from daily returns measure over a year, IODRISK,i,t standard deviation of the market model residuals of daily returns measured over a year prior, MARKET_ADJ_RETURN,i,t returns on share for 1 year less risk free rate divided by beta for share; DEBT_ASSET,i,t total debt including long and short term divided by total assets x 100; DIV_YLD,i,t dividend per share/ last price; ROEI,t net income available for common shareholders divided by average common equity for that year x 100; P_B,i,t Price of stock dividend by trailing EPS; PRICE_LOG,i,t is the LOG of last share price at t. *,**, and *** indicated significance at 10%, 5% and 1% levels, respectively.
## Appendix J – Investment Advisors’ results

### Table J1 Regression Results for Investment Advisor Ownership and Index Score

The results of this table show the results for the following regression model:

\[
\text{INVESTMENT_ADVISOR}_{it} = \alpha + \beta_1 \text{INDEX}_{it} + \beta_2 \text{LOG_MKT_CAP}_{it} + \beta_3 \text{AVERAGE_TRADE_VOLUME}_{it} + \beta_4 \text{BETA}_{it} \\
+ \beta_5 \text{IDORISK}_{it} + \beta_6 \text{MARKET_ADJ_RETURN}_{it} + \beta_7 \text{DEBT_ASSET}_{it} + \beta_8 \text{DIV_YLD}_{it} + \beta_9 \text{ROE}_{it} \\
+ \beta_{10} \text{P_B}_{it} + \beta_{11} \text{PRICE_LOG}_{it} + \epsilon_{it}
\]

Where \text{INVESTMENT_ADVISOR}_{it} is the ratio of the number of shares held by investment advisors to the total number of shares outstanding, \text{INDEX} is the index developed by Risk Metrics and has a range between 1 to 100, \text{AVERAGE_TRADE_VOLUME}_{it} is the average number of shares traded over the month divided by the shares in issue x 100, \text{BETA}_{it} is the market model beta calculated from daily returns measure over a year, \text{IDORISK}_{it} is standard deviation of the market model residuals of daily returns measured over a year prior, \text{MARKET_ADJ_RETURN}_{it} returns on share for 1 year less risk free rate divided by beta for share; \text{DEBT_ASSET}_{it} is total debt including long and short term divided by total assets x 100; \text{DIV_YLD}_{it} dividend per share/last price; \text{ROE}_{it} net income available for common shareholders divided by average common equity for that year x 100; \text{P_B}_{it} Price of stock dividend by trailing EPS; \text{PRICE_LOG}_{it} is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

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Year Dummy Included

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### Table J 2 Regression Results for Investment Advisor Ownership and Industry Score

The results of this table show the results for the following regression model:

\[
\text{INVESTMENT\_ADVISOR}_{it} = \alpha + \beta_1 \text{INDUSTRY}_{it} + \beta_2 \text{LOG\_MKT\_CAP}_{it} + \beta_3 \text{AVERAGE\_TRADE\_VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{IDORISK}_{it} + \beta_6 \text{MARKET\_ADJ\_RETURN}_{it} + \beta_7 \text{DEBT\_ASSET}_{it} + \beta_8 \text{DIV\_YLD}_{it} + \beta_9 \text{ROE}_{it} + \beta_{10} P_B_{it} + \beta_{11} \text{PRICE\_LOG}_{it} + \epsilon_{it}
\]

Where \( \text{INVESTMENT\_ADVISOR}_{it} \) is the ratio of the number of shares held by investment advisors to the total number of shares outstanding. \( \text{INDEX} \) is the index developed by Risk Metrics and has a range between 1 to 100. \( \text{AVERAGE\_TRADE\_VOLUME} \) is the average number of shares traded over the month divided by the shares in issue \( x \) 100. \( \text{BETA} \) is the market model beta calculated from daily returns measured over a year. \( \text{IDORISK} \) is the standard deviation of the market model residuals of daily returns measured over a year prior; \( \text{MARKET\_ADJ\_RETURN} \) is returns on share for 1 year less risk free rate divided by beta for share; \( \text{DEBT\_ASSET} \) is the total debt including long and short term divided by total assets \( x \) 100; \( \text{DIV\_YLD} \) is dividend per share over prior; \( \text{P\_B} \) is price of stock dividend by trailing EPS; \( \text{PRICE\_LOG} \) is the log of last share price at \( t \). \( *, **, \) and *** indicated significance at 10%, 5% and 1% levels, respectively.

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<th>Variables</th>
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<th>2SL (2nd Stage Regression)</th>
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### Table J3: Regression Results for Investment Advisor and Audit Score

The results of this table show the results for the following regression model:

\[
\text{INVESTMENT_ADVISOR}_{i,t} = \alpha + \beta_1 \text{AUDIT}_{i,t} + \beta_2 \text{LOG_MKT_CAP}_{i,t} + \beta_3 \text{AVERAGE_TRADE_VOLUME}_{i,t} + \beta_4 \text{BETA}_{i,t} + \beta_5 \text{IDORISK}_{i,t} + \beta_6 \text{MARKET_ADJ_RETURN}_{i,t} + \beta_7 \text{DEBT_ASSET}_{i,t} + \beta_8 \text{DIV_YLD}_{i,t} + \beta_9 \text{ROI}_{i,t} + \beta_{10} \text{P}_{i,t} + \beta_{11} \text{PRICE_LOG}_{i,t} + \epsilon_{i,t}
\]

Where INVESTMENT_ADVISOR_{i,t} is that ratio of the number of shares held by investment advisors to the total number of shares outstanding, INDEX is the index developed by Risk Metrics and have a range between 1 to 100, AVERAGE_TRADE_VOLUME_{i,t} is the average number of shares traded the month divided by the shares in issue x 100, BETA_{i,t} is the market model beta calculated from daily returns measure over a year, IDORISK_{i,t} is standard deviation of the market model residuals of daily returns measured over a year prior, MARKET_ADJ_RETURN_{i,t} is returns on share for 1 year less risk free rate divided by beta for share; DEBT_ASSET_{i,t} is total debt including long and short term divided by total assets x 100; DIV_YLD_{i,t} is dividend per share/ last price; ROI_{i,t} is net income available for common shareholders divided by average common equity for that year x 100; P_{i,t} Price of stock dividend by trailing EPS; PRICE_LOG_{i,t} is the log of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

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The results of this table show the results for the following regression model:

\[
\text{INVESTMENT}\_\text{ADVISOR}_{it} = \alpha + \beta_1 \text{BOARD}_{it} + \beta_2 \text{LOG}\_\text{MKT}\_\text{CAP}_{it} + \beta_3 \text{AVERAGE}\_\text{TRADE}\_\text{VOLUME}_{it} + \beta_4 \text{BETA}_{it} + \beta_5 \text{MARKET}\_\text{ADJ}\_\text{RETURN}_{it} + \beta_6 \text{DEBT}\_\text{ASSET}_{it} + \beta_7 \text{DIV}\_\text{YLD}_{it} + \beta_8 \text{ROE}_{it} + \beta_9 \text{PRICE}\_\text{LOG}_{it} + \epsilon_{it}
\]

Where \( \text{INVESTMENT}\_\text{ADVISOR}_{it} \) is the ratio of the number of shares held by investment advisors to the total number of shares outstanding, \( \text{INDEX} \) is the index developed by Risk Metrics and have a range between 1 to 100, \( \text{AVERAGE}\_\text{TRADE}\_\text{VOLUME} \) is the average number of shares traded over the month divided by the shares in issue x 100, \( \text{BETA}_{it} \) is the market model beta calculated from daily returns measure over a year, \( \text{IDORISK}_{it} \) is the standard deviation of the market model residuals of daily returns measured over a year, prior; \( \text{MARKET}\_\text{ADJ}\_\text{RETURN}_{it} \) is returns on share for 1 year less risk free rate divided by beta, \( \text{DEBT}\_\text{ASSET}_{it} \) is total debt including long and short term divided by total assets x 100; \( \text{DIV}\_\text{YLD}_{it} \) is dividend per share/ last price; \( \text{ROE}_{it} \) is the ratio of the net income available for common shareholders divided by average common equity for that year x 100; \( \text{P}_B \) is Price of stock dividend by trailing EPS; \( \text{PRICE}\_\text{LOG}_{it} \) is the log of last share price at \( t \), *\( \text{I} \)*, **\( \text{I} \)**, and ***\( \text{I} \)** indicated significance at 10%, 5% and 1% levels, respectively.

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<th>25L (2nd Stage Regression)</th>
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<td>(-11.190)</td>
<td>(7.349)</td>
<td>(-9.444)</td>
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<tr>
<td>AVERAGE_TRADE_VOLUME</td>
<td>1.555</td>
<td>0.5042</td>
<td>0.068</td>
<td>0.369</td>
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<tr>
<td></td>
<td>(1.021)</td>
<td>(0.383)</td>
<td>(1.135)</td>
<td>(0.265)</td>
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<tr>
<td>BETA</td>
<td>2.403 *</td>
<td>2.5975 *</td>
<td>0.036</td>
<td>2.756 *</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.773)</td>
<td>(1.893)</td>
<td>(0.571)</td>
<td>(1.883)</td>
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</tr>
<tr>
<td>IODRISK</td>
<td>-15.266</td>
<td>25.674</td>
<td>6.100 ***</td>
<td>30.070 24.776</td>
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</tr>
<tr>
<td></td>
<td>(-0.281)</td>
<td>(0.671)</td>
<td>(-0.121)</td>
<td>(0.688) (1.014)</td>
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</tr>
<tr>
<td>MARKET_ADJ_RETURN</td>
<td>0.009 **</td>
<td>-0.0364 ***</td>
<td>-0.001</td>
<td>-0.036</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.076)</td>
<td>(-0.223)</td>
<td>(-0.180)</td>
<td>(-0.290)</td>
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</tr>
<tr>
<td>DEBT_ASSET</td>
<td>-0.042 *</td>
<td>-0.0402 *</td>
<td>0.005</td>
<td>-0.034</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-1.939)</td>
<td>(-1.815)</td>
<td>(4.662)</td>
<td>(-4.643)</td>
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</tr>
<tr>
<td>DIV_YLD</td>
<td>-3.506</td>
<td>-3.3505 **</td>
<td>0.026</td>
<td>-3.520</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-1.768)</td>
<td>(-1.072)</td>
<td>(0.767)</td>
<td>(-1.746)</td>
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</tr>
<tr>
<td>PE</td>
<td>0.009 **</td>
<td>0.0092 **</td>
<td>0.000</td>
<td>0.011 **</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.18)</td>
<td>(2.303)</td>
<td>(0.121)</td>
<td>(2.183) (2.014)</td>
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</tr>
<tr>
<td>ROE</td>
<td>-1.106</td>
<td>-0.8539</td>
<td>0.086</td>
<td>-0.626</td>
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<tr>
<td></td>
<td>(-0.933)</td>
<td>(-0.701)</td>
<td>(1.511)</td>
<td>(-0.474)</td>
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<tr>
<td>PRICE_LOG</td>
<td>0.705</td>
<td>0.6692</td>
<td>-0.072</td>
<td>0.265 2.921</td>
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<tr>
<td></td>
<td>(0.562)</td>
<td>(0.500)</td>
<td>(-1.235)</td>
<td>(0.199) (0.975)</td>
<td></td>
</tr>
</tbody>
</table>

Year Dummy Included: Yes
Industry Dummies: Yes

Adjusted R2: 0.170
Observations: 1465
F Statistic: 15.347
VIF: 1.205
### Table J5 Regression Results for Investment Advisor for Compensation Score

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Hayes &amp; Cai</th>
<th>Fixed Effect</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stage 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Regression)</td>
</tr>
<tr>
<td><strong>COMP</strong></td>
<td>0.373</td>
<td>-0.2512</td>
<td>-0.007</td>
</tr>
<tr>
<td></td>
<td>(0.842)</td>
<td>(0.552)</td>
<td>(0.123)</td>
</tr>
<tr>
<td><strong>CEO_TENURE</strong></td>
<td>-9.091</td>
<td>-10.626</td>
<td>0.166</td>
</tr>
<tr>
<td></td>
<td>(9.567)</td>
<td>(10.563)</td>
<td>(2.720)</td>
</tr>
<tr>
<td><strong>LOG_MKT_CAP</strong></td>
<td>1.806</td>
<td>0.5761</td>
<td>-0.365</td>
</tr>
<tr>
<td></td>
<td>(1.223)</td>
<td>(0.433)</td>
<td>(4.157)</td>
</tr>
<tr>
<td><strong>AVERAGE_TRADE_VOLUME</strong></td>
<td>2.492</td>
<td>2.6472</td>
<td>-0.104</td>
</tr>
<tr>
<td></td>
<td>(1.832)</td>
<td>(1.915)</td>
<td>(1.123)</td>
</tr>
<tr>
<td></td>
<td>(0.208)</td>
<td>(1.018)</td>
<td>(0.422)</td>
</tr>
<tr>
<td><strong>MARKET_ADJ_RETURN</strong></td>
<td>0.002</td>
<td>-0.0382</td>
<td>0.011</td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
<td>(0.233)</td>
<td>(1.455)</td>
</tr>
<tr>
<td><strong>DEBT_ASSET</strong></td>
<td>-0.030</td>
<td>-0.0294</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(1.428)</td>
<td>(1.340)</td>
<td>(0.138)</td>
</tr>
<tr>
<td><strong>DIV_YLD</strong></td>
<td>-3.367</td>
<td>-3.3299</td>
<td>-0.238</td>
</tr>
<tr>
<td></td>
<td>(1.691)</td>
<td>(1.027)</td>
<td>(0.061)</td>
</tr>
<tr>
<td><strong>ROE</strong></td>
<td>0.009</td>
<td>0.0096</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(2.374)</td>
<td>(2.394)</td>
<td>(0.422)</td>
</tr>
<tr>
<td><strong>PRICE_LOG</strong></td>
<td>-1.038</td>
<td>-1.0702</td>
<td>0.012</td>
</tr>
<tr>
<td></td>
<td>(2.071)</td>
<td>(2.652)</td>
<td>(0.142)</td>
</tr>
<tr>
<td></td>
<td>0.470</td>
<td>0.5664</td>
<td>0.260</td>
</tr>
<tr>
<td></td>
<td>(0.373)</td>
<td>(0.418)</td>
<td>(3.081)</td>
</tr>
</tbody>
</table>

Where INVESTMENT_ADVISOR,; i, t it is the ratio of the number of shares held by Investment Advisors to the total number of shares outstanding, INDEX is the index developed by Risk Metrics and has a range between 1 to 100, AVERAGE_TRADE_VOLUME; t it is the average number of shares traded over the month divided by the shares in issue x 100, BETAl, t is the market model beta calculated from daily returns measured over a year, IDORISK; t it standard deviation of the market model residuals of daily returns measured over a year prior; MARKET_ADJ_RETURN; t it returns on share for 1 year less risk free rate divided by beta for share; DEBT_ASSET; t it total debt including long and short term divided by total assets x 100; DIV_YLD; t it dividend per share/ last price; ROE; t it net income available for common shareholders divided by average common equity for that year x 100; P_B; t it Price of stock dividend by trailing EPS; PRICE_LOG; t it is the LOG of last share price at t. *, **, and *** indicated significance at 10%, 5% and 1% levels, respectively.

Notes:

- Year Dummy Included
  - Yes
  - No

- Industry Dummies
  - Yes
  - No

- Adjusted R2
  - Yes
  - No

- Observations
  - Yes
  - No

- F Statistic
  - Yes
  - No

- VIF
  - Yes
  - No

- Stage 1:
  - Fixed Effect
- Stage 2:
  - Fixed Effect
## Appendix K – Summary of Hypotheses

### Audit Environment

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a – There is a positive association between total institutional ownership and audit score.</td>
<td>Accepted</td>
</tr>
<tr>
<td>H1b Where block-ownership is greater there will be less association between institutional ownership and the audit score.</td>
<td>Accepted</td>
</tr>
<tr>
<td>H1c - There is increase in the positive association between the institutional ownership from before and after the financial crisis of 2007-8 to the audit score.</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

### Remuneration Characteristics

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2a There is a positive association between total institutional ownership and the compensations score.</td>
<td>Rejected</td>
</tr>
<tr>
<td>H2b Where block-ownership is greater there will be less association between institutional ownership and the compensation score.</td>
<td>Rejected</td>
</tr>
<tr>
<td>H2c There will be increasing in positive association between total institutional ownership and compensation score from before and after the financial crisis of 2007-8.</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

### Executive Board Features

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>H3a – There is a positive association between the total institutional ownership and the board score.</td>
<td>Accepted</td>
</tr>
<tr>
<td>H3b -Where block-ownership is greater there will be less association between institutional ownership and the board score.</td>
<td>Accepted</td>
</tr>
<tr>
<td>H3c There will be increasing in positive association between total institutional ownership and board score from before and after the financial crisis of 2007-8.</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

### Overall Governance

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>H4a There is a positive association between total institutional shareholder ownership and overall corporate governance.</td>
<td>Accepted</td>
</tr>
<tr>
<td>H4b Where block-ownership is greater there will be less association between institutional ownership and overall corporate governance.</td>
<td>Accepted</td>
</tr>
<tr>
<td>H4c There will be increasing levels of association between total institutional ownership and overall corporate governance during the study period.</td>
<td>Accepted</td>
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</tbody>
</table>
### Category of institutional owners

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>H5a</td>
<td>There is a positive significant association between pension fund ownership and good corporate governance</td>
<td>Rejected</td>
</tr>
<tr>
<td>H5b</td>
<td>There is a positive association with banks ownership and good corporate governance</td>
<td>Rejected</td>
</tr>
<tr>
<td>H5c</td>
<td>There is a positive association with insurance firm ownership and good corporate governance</td>
<td>Rejected</td>
</tr>
<tr>
<td>H5d</td>
<td>There is a positive association with hedge funds ownership and good corporate governance</td>
<td>Accepted</td>
</tr>
<tr>
<td>H5e</td>
<td>There is a positive association between investment advisor ownership and good corporate governance</td>
<td>Accepted</td>
</tr>
</tbody>
</table>