

**CEO PAY:  
THE ROLE OF PERFORMANCE,  
GOVERNANCE  
AND POLITICAL CONNECTION**

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## **Abstract**

CEO pay has attracted substantial public attention since its introduction as one of the remedies to the agency conflict. This is driven by the extensive and sustained rise in executive pay in most of the developed countries. Two questions arise from increased executive pay. *First*, does rising executive pay reflect top management contribution to firm performance or it is just following patterns from past years? *Second*, what is the role that is played by corporate governance practices to control this rising pattern in CEO pay? This thesis has two main objectives, first to investigate whether CEO pay contributes to enhanced corporate performance by differentiating between the impacts of short- and long-term compensation on short- and long-term performance indicators respectively. Second, the study further investigates the role of corporate governance and political connections on the CEO pay.

The thesis uses the System GMM method to analyse a sample of 777 non-financial UK firms during the period 2000-2012. This method allows counting for endogeneity and unobserved heterogeneity that are likely to emerge in the models. The findings show that CEO bonuses are positively associated with short-term performance measures, while they have a negative impact on the total shareholder return. Evidence also suggests that long-term compensation has a positive impact on long-term performance, supporting the main claim of the *Agency Theory*. The results also show that the required role of corporate governance practices is passive in UK companies, reflecting a source of *managerial power* for the executive officers. The thesis is the first to show that politically connected CEOs are paid higher compensation compared to their peers. However, evidence suggests that those highly powerful managers are well governed as a way to hedge against future uncertainty comes from being politically connected.

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*This thesis is dedicated to the soul of my father may Allah forgive him and grant him his highest paradise (Ameen).*

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## List of Acronyms

AGMs	Annual General Meetings
CA	Companies Act
CDF	Cumulative Distribution Function
CEO	Chief Executive Officer
DIF-GMM	Difference GMM
EOIC	Earnings on Invested Capital
EPS	Earnings Per Share
FE	Fixed Effect Model
FRC	Financial Reporting Council
GLS	Generalised Least Square
GMM	Generalised Method of Moment
IPS	The Institute for Policy Studies
IRR	Internal Rate of Return
IV	Instrumental Variable
LEV-GMM	Level GMM
LTIPs	Long Term Incentive Plans
NEDs	Non-Executive Directors
NPV	Net Present Value
OLS	Ordinary Least Square
OT	Organisational Theory
POLS	Pooled Ordinary Least Square
R&D	Research and Development
RDT	Resource Dependency Theory
RE	Random Effect Model
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
ROI	Return on Investment
S&P	Standard and Poor's index
SYS-GMM	System GMM
TOBINSQ	Tobin's Q
TSR	Total Shareholder Return

# Chapter 1: Introduction

## 1.1. Research background

The topic of executives' remuneration has attracted public attention since it emerged as an answer to the agency conflict. During the last decade, this topic has become a significant concern for investors, legislators, academics and media. In the theoretical context, the agency theory provides a framework for deriving effective executive compensation. Jensen and Meckling (1976) advocate that designing managerial compensation in a way that links it with positive share performance could motivate a manager (*agent*) to act in the best interests of shareholders (*principle*). Hence, the aim of executive compensation is to align the interests of managers with those of the shareholders. However, such a positive outcome is not always attainable due to the agency problem (Conyon *et al.*, 2000).

Another view in the existing literature regards executive compensation as an additional source of power, a matter that was not addressed by the agency theory. This elucidation is well-depicted in the seminal work by Bebchuk and Fried (2006). They argue that top officers occupy the most powerful positions in a firm and this provides them with a sufficient level of discretion to set the terms of their own contracts without intervention. Consequently, executive compensation could serve managers rather than shareholders if it is associated with rent extraction behaviour exercised by the executive team. In this vein, the executives' pay therefore may not be linked with performance as the agency theory framework proposes. The conflicting explanations by the two prominent theories creates a long lasting question to be answered; which of the two theories are dominant in explaining executive pay?

In the United Kingdom (UK), corporate governance regimes have witnessed substantial reforms since the establishment of the Cadbury Committee in 1991<sup>1</sup>. The

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<sup>1</sup> Comply or Explain: 20th Anniversary of the UK Corporate Governance Code available online at <https://www.frc.org.uk/Our-Work/Publications/Corporate-Governance/Comply-or-Explain-20th-Anniversary-of-the-UK-Corpo.aspx>.

committee was established as a response to the public outrage against an excessive rise in executive pay that was associated with poor performance. In addition, the failure of large UK companies such as Polly Peck during the 1990s<sup>2</sup>, encouraged the committee to strictly regulate the process of executive pay and corporate governance practices. This was followed by the introduction of a series of governance reports, starting with the Cadbury Report (1992). This report emphasised various issues related to the transparency of executive pay that increases the accountability of managers to shareholders. Later, the Greenbury Report (1995) highlighted the need for more challenging compensation contracts that were mostly linked with performance and in 1998 the Hampel Report combined the recommendations of the two former reports. The Combined Code<sup>3</sup>, which was initially issued in 1998 and updated in 2014, is considered as one of the most influential reports that regulates governance practices in the UK. However, although that the code attempted to codify the rules and recommendations of the Cadbury Report, Greenbury Report and the Hampel Report, it was still not compulsory for UK companies to follow the requirements of the code. By 2002, the Directors' Remuneration Report Regulations (2002) was issued, to urge all UK companies to disclose a detailed remuneration report for all top managers, and these regulations are legally binding.

As a consequence, there has been heavy pressure on UK firms to comply with the governance code and regulations and to be transparent in disclosing remuneration reports to the public. Significantly, for all companies, investors and the general public have become aware of the issue of executive compensation and its relation to improved performance.

The media focus on the issues has exacerbated the regulators' pressure on how the compensation contracts should be composed. In 2012, the BBC business news highlighted the problem that the pay of a chief executive officer (CEO) is not linked with performance (Flint, 2012)<sup>4</sup>. Alan Johnson, the MP for Hull West and Hessle, said: "*Executives are being generously rewarded for making the wrong decisions*". Business insiders showed that CEO pay rose by 26% from 2010 to 2014. Recent

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2 Web source available online at: <http://www.lawteacher.net/free-law-essays/business-law/the-uk-corporate-governance-code-business-law-essay.php>

3 The name was changed in 2010 from the Combined Code to "the UK Corporate Governance Code".

4 Web source available online at: <http://www.bbc.co.uk/news/business-16932043>.

surveys show that underperforming managers are still receiving an average annual bonus of 8,873 British Pounds (the National Management Salary Survey 2015).

## **1.2. Motivation and research contributions**

The debate surrounding executive pay is still active and calls for further investigation from a number of different perspectives. Despite the growing number of studies on CEO pay, there is no consensus in the literature as to whether CEOs are overpaid relative to their performance. Furthermore, the literature is significantly skewed towards studies on companies in the United States (US) compared to other countries. Conyon *et al.* (2000) for example, show that there are differences in executive pay between the US and the UK. This demonstrates the further need for more research to be conducted on UK firms.

Corporate governance practices may also have implications on CEO pay. Some recent studies have attempted to investigate and highlight such implications. Nonetheless, the literature on UK companies also provides mixed evidence thus accentuating the pressing need for more empirical and theoretical evidence in this area. The ambiguous evidence provided by the literature suggests that researchers need to investigate further factors that may affect executive pay such as CEOs' political connections or networks. The former is one of the external factors that might influence the scale of CEO pay particularly if one perceives the political connection as an external source of power to executive managers. To the best knowledge of the author, until now there has been no study that has attempted to identify the link between CEO pay and political connection in the UK.

The study contributes to the existing literature in three ways. *First*, to the best knowledge of the author it is the first study to distinguish the effect of all compensation components on short- and long-term future performance of UK companies. *Second*, it adds more empirical evidence on the implications of corporate governance practices on CEO pay. Finally, it is the first study to provide empirical evidence on the impact of political connection on CEO pay.

### 1.3. Research objectives and design

This thesis focuses on data from the UK with three main objectives to achieve: i) to investigate whether CEO pay is associated with improved performance or not; ii) to investigate the implications of corporate governance practices on CEO pay; iii) to examine the effect of political connections on the level of CEO pay after controlling.

The *first* objective is achieved by distinguishing the effect of both short- and long-term compensation components on the short- and long-term performance measures respectively. The performance measures are employed as dependent variables including two accounting-based measures: earning per share (EPS) and return on equity (ROE), and two market-based measures: total shareholder return (TSR) and Tobin's Q (TOBINSQ). The explanatory variables include five lagged compensation variables: salary, bonus, cash compensation, long-term compensation and total compensation. This analysis controls for several firm-specific characteristics that are likely to affect performance (i.e. firm size, firm risk, leverage, asset turnover and company's age).

The *second* objective is pursued to identify the effect of governance practices on shaping the optimal CEO compensation. The debate in this area indicates that if governance mechanisms play an active role in monitoring managerial behaviour, then it would be expected that managerial power is low and restricted by the boundaries of corporate governance applied within a firm. In contrast to the previous objective, the model structure of this objective considers the aforementioned five compensation variables as dependent variables. The governance proxies include board size, board structure, the percentage of institutional investors' ownership, the number of institutional shareholders, the percentage of individual blockholders' ownership, the number of individual blockholders, the percentage of CEO ownership, CEO tenure and CEO duality.

To attain the *third* objective, the study assumes that political connection is directly influenced by CEOs decision. Thus, the study employs the political contributions that were made in favour of any political party as a proxy for a CEO's political connection. This is based on the fact the resolution for providing such political donations is taken by the board of directors headed by the CEOs. Three compensation

proxies are employed as dependent variables in this part of the analysis, namely short- and long-term compensation and total compensation. The political connection variables are as follows: i) the amount of political contribution; ii) political contribution dummy; iii) the size of the political network measured as the number of political parties being supported by a firm; iv) a dummy variable to distinguish the firms the donates to more than one party; and v) political contribution made to the three leading parties in the UK in three dummy variables (i.e. Conservative, Labour and Liberal Democrats). The analysis is extended to investigate whether firms tend to hedge against the uncertainty of being connected to a political body. In other words, firms that hire politically connected CEOs may apply effective corporate governance practices in order to tie up powerful managers with longer periods of performance by postponing a key proportion of their pay.

Accordingly, the main research questions to be answered are as follows:

1. Does CEO pay contribute to enhanced firm performance?
  - 1a. Does short-term compensation enhance short-term performance?
  - 1b. Does long-term compensation enhance long-term performance?
2. Do corporate governance practices in the UK play an active role in determining CEO pay?
3. Are politically connected CEOs paid higher compensation compared to their peers?
  - 3a. Do firms strictly apply governance practices in order to offset the power of politically connected CEOs?
  - 3b. Do firms hedge against the managerial power of CEOs that comes from being politically connected by increasing the percentage of long-term compensation?

In order to answer these research questions, a sample of 777 UK companies were selected from different industries. The sample excludes financial and insurance firms, because they are different in terms of rewarding criteria and performance conditions applied to executive compensation. The thesis uses unbalanced panel data covering the period from 2000 to 2012 with a total number of 5916 observations. The sample is limited to CEOs. Sample data is gathered from three databases: Fame for firm characteristics, DataStream for financial data and Manifest for compensation and governance data.

The relationship between executive pay, governance, political connection and corporate performance provides econometric challenges to the robustness of the empirical investigation. Hence, the models chosen to investigate the research questions in this study are likely to suffer from endogeneity and unobserved heterogeneity. The methods that are commonly used in the literature such as Ordinary Least Square (OLS) and Fixed Effect (FE) models cannot accommodate such econometric problems. Therefore, this study employs the Generalised Method of Moment (GMM), thus providing robust empirical evidence to the literature. In particular, the System-GMM model provided the least biased estimations that accommodate for further challenges in the data in addition to the aforementioned alternatives such as heteroskedasticity.

#### **1.4. Thesis structure**

This thesis is structured in eight chapters that are organised as follows:

**Chapter 2** presents the framework of executive compensation and corporate governance in the UK. The chapter starts by describing publicly traded corporations and the main characteristics of these firms. It focuses on the improvement of executive compensation and corporate governance practices in the UK. The most influential reports on corporate governance regulation are reviewed along with their main rules and recommendations. The presented reports include *the Cadbury Report (1992)*, *the Greenbury Report (1995)*, *the Hampel Report (1998)*, *the Combined Code (1998)* and *the Directors' Remuneration Report Regulations (2002)*. The chapter also presents the structure of executive compensation that is generally used by UK firms. The last part of chapter two briefly reviews the rules and regulations that relate to providing political contributions in the UK.

**Chapter 3** reviews prior literature in the three fields of this thesis: executive compensation, corporate governance and political connection. The literature review is divided into two main parts: theoretical literature and empirical literature. The theoretical literature presents a comprehensive discussion of the main theories employed by previous studies. This is to show the similarities and differences in the conceptual framework of each theory and how theories provide contradicting

explanations in terms of executive compensation, corporate governance and firm performance. The theoretical review covers the well-known agency theory, which describes the agency conflict between managers and shareholders. It also covers the other major theory that is employed broadly across prior literature; that is the Managerial Power Theory. With respect to political connection theories, Resource Dependence Theory is employed and reviewed because it explains why firms may seek access to external resources such as political relationships. Chapter three also reviews the empirical literature on executive pay, corporate governance and the political connections of firms, highlighting the main findings.

**Chapter 4** introduces the methodology of the research. The chapter starts with a critical evaluation of the OLS and FE models that have been employed in previous executive pay literature. The chapter demonstrates how these two models may reveal biased evidence related to the three-way relationship between executive pay, corporate governance and firm performance. The chapter then introduces GMM estimation as one of the most advanced econometric models which is recommended to be used in executive pay analysis. The subsequent section presents the sample selection criteria and variable measurements and the chapter ends with a critical discussion of the theoretical debate and presentation of the thesis's testable hypotheses.

**Chapter 5** examines the impact of CEO pay on firm performance. The chapter starts by presenting the empirical results that are obtained from the OLS and FE models when testing the effect of CEO pay on EPS. This is to compare these results with SYS-GMM results as a way to demonstrate that the latter model is the least biased in testing these types of relationship. The chapter then presents empirical findings that are related to investigating the effect of CEO pay on short-term and long-term performance. The chapter concludes that performance-linked compensation (i.e. bonuses) has a positive impact on short-term performance. Findings also indicate that long-term performance is positively associated with long-term compensation. However, this research evidence shows that CEO salary is inversely related to short-term performance while short-term compensation has a generally negative impact on long-term performance.

**Chapter 6** analyses the effect of corporate governance practices on the level of CEO pay. The chapter provides evidence that the proposed role of non-executive directors (NEDs) in the board is passive. Empirical results show a positive association between CEO pay and the percentage of NEDs, which might be a sign of managerial alliance inside the boardroom. The chapter also shows that higher CEO ownership is associated with higher cash compensation, reflecting managerial entrenchment especially where other corporate practices are found to have a weak effect on the level of CEO pay.

**Chapter 7** addresses the relationship between CEO pay and political connections. The empirical analysis is introduced in two sections. The first section tests whether politically connected CEOs are paid more than their peers. This is achieved by testing the effect of political contributions (amount and dummy), political network size and political contributions that are made to the three leading parties in the UK on the level of CEO pay. The second section analyses whether those politically connected CEOs are strictly tied by governance practices as a way of offsetting their potential power. The chapter concludes that politically connected CEOs are paid more than their peers who do not have political ties, but they are also governed by increasing the proportion of long-term compensation in their contracts.

**Chapter 8** provides the summary and conclusion of the thesis. The chapter starts by introducing the empirical findings of the study. This is followed by a brief discussion of policy implications that are suggested by the results of the research. The chapter ends with research limitations and suggestions for future research.

## **Chapter 2: Executive compensation and corporate governance: The framework and practices in the UK**

### **2.1. Introduction**

*“A corporation is a structure established by law to allow different parties to contribute capital, experience, and labor for the maximum benefit of all of them”* (Monks and Minow, 2011: 6). Commencing the chapter by this definition of a corporation puts the initial emphasis of the thesis on the function of the corporation, more specifically, the public corporation. Who stands behind this economic entity in order to operate it for generating infinite profitability? Who are responsible for its rights and obligations and how this entity is well structured and developed over time? Who regulates and legalizes public corporations in order to save the rights of all parties that are involved within its boundaries? All these questions will be answered later in this chapter. It is important to highlight first that the public corporation is an independent of its owners. This independence means that in the case of a corporation’s failure, the owners will not be responsible to pay anything from their personal monies. This creates an important question; in a very extreme scenario, who will be accountable for corporation bankruptcy? From another perspective, management is deemed to be the engine that operates the entity and it should be entirely separate from its owners. Although top management is seen by the public as the first device that is responsible for the success or the failure of the firm, management will not compensate investors in the case of business’s collapse.

The complexity of the above questions lead on to another story; the Enron scandal (2001). It is well known that the reason which Enron, the US energy corporation, went bankrupt was its management and accounting gaps, which were exploited to mislead the board of directors, other committees and even the external audit consultants. Following the Enron scandal and other large corporations’ failures in that

period<sup>5</sup>, the topic of corporate governance became very active in all business media. Accordingly, it was advocated that executive pay, as one application of governance, should be monitored, and tied to performance. Disclosure requirement is also another governance criterion that has been improved in order to ensure that all key financials are exposed to the public (e.g. via a director's remuneration report). Thus, governance practices have been strongly disciplin'd, by responsible authorities. In the UK for instance, the Companies Act (CA) is responsible for legislation relating to all corporations. Also, the Financial Reporting Council (FRC) is responsible for publishing and updating the relative reports that contain the rules and recommendations for governance practices in publicly listed firms. These reports include the Cadbury report (1992), the Greenbury report (1995), the Hampel report (1998) and the Combined Code (1998)<sup>6</sup>.

One of the main objectives of this research is to investigate the effect of political connections on the level and the structure of executive pay. Since political connection is identified in this research as political contributions made by companies, it is also significant to shed light on the rules and regulations that shape the procedure of providing such financial support to political parties by companies in the UK. The CA also sets up the conditions that should be fulfilled in order to provide political contributions to the authorized political institutions. More importantly, political contribution decisions are made by the board of directors in the firm. Accordingly, regulations of this matter concern the discretion of top managers and to what extent they are able to provide such support to political parties.

This chapter aims to review the development of corporate governance regulations, executive pay frameworks and political donations by companies in the UK. The chapter is organized as follows. First, a brief description regarding the nature of a quoted company and how it is structured and governed will be presented. Second, the development of corporate governance practices in the UK will be reviewed, presenting the main reports that are issued by the FRC. Third, the chapter discusses

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<sup>5</sup> Examples of these are WorldCom (2002), Conoco (2002), PG&E (2001) and Parmalat (2003).

<sup>6</sup> The focus of this chapter will be limited by the most influential reports that are published in this area, with taken into consideration that there are other published reports which are also related to corporate governance in the UK. These are: Turnbull Report (1999), the Higgs Report (2003) and Walker report (2009).

the structure of executive compensation in the UK. Forth, the regulations of political donations made by companies in the UK will be briefly reviewed. This is followed by the conclusion.

## **2.2. The nature of publicly traded corporation**

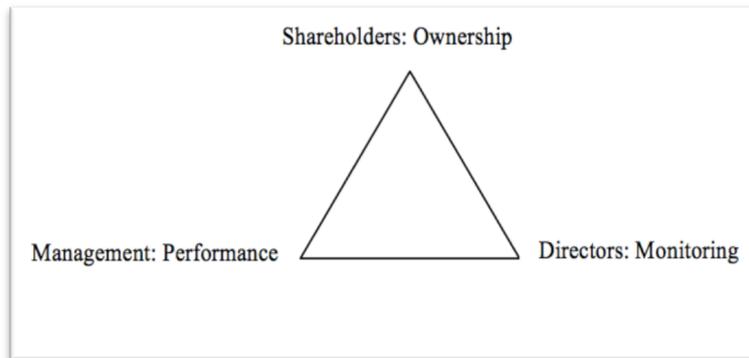
There are four major characteristics of the public firm (Monks and Minow, 2011); these are:

- **Limited liability:** the firm is considered independent on its owners. This separation between the owners and the economic entity means that the liabilities of the corporation are not deemed the liabilities of the individuals who establish the business. Also, if the corporation goes bankrupt and is sued by its creditors, the owners are not considered individually liable.
- **Free transferability of shareholdings:** this indicates that the shareholders can sell their owned shares easily in the market if they feel that the value of these shares is decreasing or lost. This freedom is to limit the authority of shareholders by allowing them to dispose of their shares any time that they desire.
- **Legal personality:** the corporation is treated as an independent “person” which can act, own and live as long as it has financial capital that is enough to operate the business. This means that the death of individuals who contribute to this capital will not lead to the collapse of the business. The legality of the corporation also indicates that it has its own rights and obligations which are separate from those of owners.
- **Centralized management:** all business affairs are managed by a group of directors who have the power and authority to take decisions that are related to the business. Accordingly, management is responsible for the performance of the firm and the owners have only a limited authority to interfere in board resolutions. This is to enable the corporation to be operated at the maximum efficiency. This can cause the conflict between owners and management which lies in the heart of the agency theory.

From these four characteristics, it can be understood that the firm is independent from its owners, and also there is a separation between management and owners, which has

been advocated since the 1980s (Fama and Jensen, 1983). The corporation can be represented as the triangle with three essential vertices (figure 2.1).

**Figure 2.1. The simplified structure of a firm**

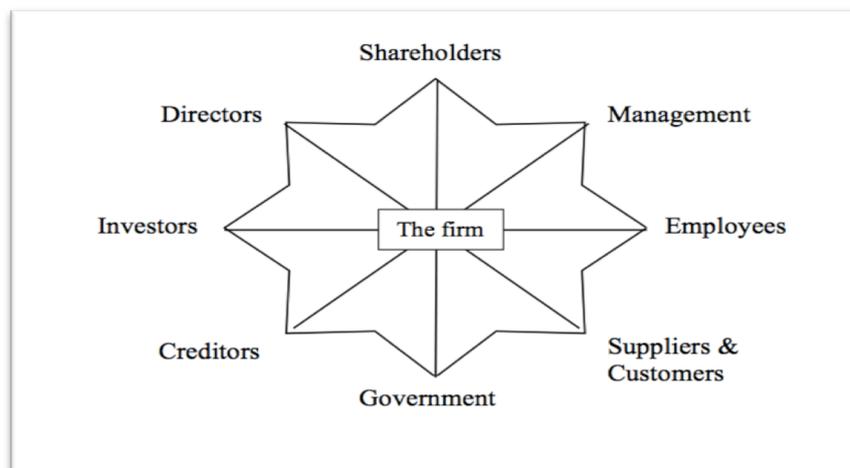


At a first glance, the figure above summarizes the structure of any corporation. Basically, shareholders represent the ownership aspect by providing the share capital that is necessary for establishing any business. There is a difference in the ownership proportions among owners and the largest shareholders (i.e. those who own 5% and above) can enjoy voting rights with respect to specified resolutions. Management is the device that works on behalf of the shareholders to maximize their wealth. Hence, managers are accountable for good or poor performance. In this matter shareholders are required to pay top managers in a more attractive way (i.e. managerial incentives) to motivate them to work at their maximum effort. Yet, owners are still unable to supervise managers to ensure that they perform in line with their interest. As a consequence, the need for monitoring top management creates the need for another neutral party, that is, the board of directors. Thereby, governance is practiced through this board, which should be carefully structured in a way that achieves this purpose.

It is too simplistic however, to limit the firm to these three parties; there are other stakeholders who have interests in the economic entity. Figure 2.2 shows all of the potential parties who are involved in the organizational structure. This makes the relationships more complex because the interests of each party can be conflicted with the interests of other parties. For example, shareholders and investors are willing to take some level of risk in order to obtain higher return, while creditors will be worried

by taking these types of action. However, this thesis focuses only on the simple structure of the firm and how corporate governance can mitigate the agency conflicts that appear between these three parties.

**Figure 2.2. The complex structure of the firm**



### **2.3. The development of corporate governance and executive remuneration in the UK**

The large corporations' scandals and high executive pay that is not associated with improved performance lead to thorough consideration regarding corporate governance in the UK. As a response to public concern, the Committee on the Financial Aspects of Corporate Governance (known latter as the Cadbury Committee) was established in 1991 by the FRC and directed by Sir George Adrian Cadbury. The motivation for composing this committee was to enhance investors' confidence with respect to the credibility of listed companies and their annual reports, especially after the collapse of large business in the UK<sup>7</sup>. Corporate governance was defined by the Cadbury committee as "the system by which companies are directed and controlled". The

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<sup>7</sup> Examples of these scandals in the UK are: the collapse of the Bank of Credit and Commerce International and Maxwell Group bankruptcy in the 1992.

committee first published the Cadbury report (1992) which was then followed by a chain of reports that concerned both corporate governance and executive remuneration. The next section reviews these reports and their main rules and recommendations.

### **2.3.1. The Cadbury Report (1992)**

The purpose of issuing the Cadbury report was to improve corporate governance, which was represented by the board of directors' responsibilities. The report discusses and states the essential features of the effective board, presenting a Code of Best Practice which contains the high standards for corporate governance and firm behavior. Also, the code focuses on control and auditing aspects that should be followed by companies listed on the London Stock Exchange. The main recommendations of the code are:

- ***The board of directors:*** the code recommends arranging regular meetings of the board, which should effectively control other executives. Also, the power and authority should not be centralized in one member, even if the chairman is an executive director, and the responsibilities should be balanced among directors. With respect to the independence of the board, the code states that the number of non-executive directors (NEDs) should be sufficient to fulfill the best independence of board resolutions. Additionally, the board should have a formal schedule of all meetings and decisions which should be easy to access by directors when they are needed. The code also recommends the use of external advice providers if necessary for additional effectiveness.
- ***NEDs:*** the code states that these directors should be independent in their judgments and should not have any form of relationship with the company except fees and shareholdings. With respect to the fees, the code states that "their fees should reflect the time which they commit to the company", and their selection criteria should be well specified and formally processed.
- ***Executive directors:*** executive remuneration should be fully disclosed and approved by the compensation committee, which should be composed of NEDs. Also, executive pay should be well specified and reported according

to its type [i.e. salary, bonus, pension, share options, other long term incentive plans (LTIPs)]. Moreover, the contracts of those executives should be approved by shareholders if they exceed three years.

- **Reporting and control:** the board of directors is responsible for providing clear and accurate accounts and statements about the firm's position. Also, an audit committee should be established by at least three NEDs and this committee should ensure that all of the company's accounts are audited and controlled. Likewise, the board should state that it is responsible for the auditing and reporting criteria<sup>8</sup>.

Although the above propositions are expressed in the report as recommendations, the majority of listed companies in the London Stock Exchange announced their compliance with the code (Conyon, 1997).

### 2.3.2. The Greenbury Report (1995)

The Greenbury report was published in 1995 by Sir Richard Greenbury. The main objective of this report was to codify the remuneration of top management. This was a reaction to the response by policy makers to the general public concerns with regard to high executive compensation. The report focuses on executive pay in terms of disclosure criteria, the level of executive remuneration and the compensation committee's responsibilities. However, the outputs from this report were still voluntary, allowing companies to be self-regulated. The Greenbury code mainly discusses the following aspects:

- **Compensation committee:** The compensation committee should consist of NEDs in order to achieve a sufficient level of independence that will lead to the best alignment between the interests of shareholders and managers. Also, the remuneration of committee members should be determined by the board of directors. With respect to executive remuneration, the committee should set up the compensation packages for executive directors and consult the chairman and CEOs to approve the proposal.

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<sup>8</sup> The full principles and recommendations can be found in the Cadbury Report (1992), available online in <http://www.ecgi.org/codes/documents/cadbury.pdf>

- ***Disclosure and transparency:*** the compensation committee should prepare a report that includes detailed information about executive remuneration elements, policies, performance conditions and measurement. This report should be published in the companies' annual accounts.
- ***Remuneration policies:*** executive pay packages should be set in an attractive way that motivate managers to work in line with the interests of shareholders. These contracts should be also tied to firm performance.
- ***Compensation contracts:*** the code indicates that compensation contracts should not be longer than three years. For those directors who show poor performance, the committee and the board should terminate their contracts for governance reasons<sup>9</sup>.

### 2.3.3. The Hampel Report (1998)

The Hampel committee was established in 1995 and chaired by Ronnie Hampel. The purpose of issuing this report was to reform some of the rules and recommendations in the two preceding reports. It focuses on corporate governance practices in the UK and refined the roles of the board of directors and the shareholders. The report argues that the results of the Cadbury Report and the Greenbury Report were just “box-ticking” procedures. Since a company merely states in its annual reports that it complies with the code without full disclosure of all related information that is recommended in both reports, then a shareholder will have an impression that the company just for the tick “yes” or “no”. Also, the Hampel report uses the word “principles” rather than “guidelines” which were used in the previous reports; the Hampel committee states that “With guidelines, one asks "How far are they complied with"; with principles, the right question is ‘How are they applied in practice?’” (Part 2.1: 16). Also, the Hampel report deregulates some aspects that were raised in prior reports; for example, it believes that shareholders’ approval with respect to executive remuneration report is not appropriate. The Hampel committee also suggests flexibility in applying the report’s principles, depending on individual circumstances.

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<sup>9</sup> The full principles and recommendations can be found in the Greenbury Report (1995), available online in <http://www.ecgi.org/codes/documents/greenbury.pdf>

Overall, this report attempts to improve the outputs from the previous reports and combine them into one report, resulting in the Combined Code (1998).

#### **2.3.4. The Combined Code: Principles of Good Governance and Code of Best Practice (1998)**

The combined code was first issued in 1998, revised in 2003, and then updated in 2014. The code aims to consolidate the recommendations of the three former reports.

The code covers the following aspects in governance practices:

- ***The board:*** each company should be directed by an effective board, which is required to be objective in taking decisions that contribute to enhancing firm value. The board of directors should also be balanced with respect to the number of executives and NEDs. Furthermore, the code stresses that chairman and CEO responsibilities should not be exercised by the same director. Also, members of the board should be appointed through a formal process, evaluated on their performance and re-elected every at least three years.
- ***Remuneration:*** the code states that “Levels of remuneration should be sufficient to attract, retain and motivate directors of the quality required to run the company successfully, but a company should avoid paying more than is necessary for this purpose” (section B-1: 13). Moreover, there should be an appropriate proportion of performance-based elements to fulfill the maximum alignment of conflicted interests. Also, executive directors should not interfere in their remuneration procedures.
- ***Accountability and auditing:*** the board should present accurate and understandable accounts that describe precisely the financial position of the firm. The board should also set up an audit committee, which should have an active role in revising company’s accounts.
- ***Relation with shareholders:*** the code encourages a continuous dialogue with shareholders to understand their concerns. The connection between the shareholders and the organization can be achieved by either shareholders establishing a direct connection with the chairman or CEOs,

or the shareholders attending the company's Annual General Meetings (AGMs) which is limited to only the largest shareholders.

Although the combined code contains a great deal of principles that are more precisely specified than in previous reports, application of these principles remained voluntary by listed firms in the UK. However, it is believed that the combined code has a strong influence and is endorsed by many UK companies. A corporate governance review (2012) showed that 51% of UK companies fully complied with code and 44% of those who did not comply, planned to do so the following year.

### **2.3.5. The directors' remuneration report regulations (2002)**

To understand the actions that were taken on the 1 August 2002 after the directors' remuneration report regulations (thereafter "the regulations"), we should first recall the Companies Act 1985 (thereafter "the Act"), and more specifically schedule 6. Quoted companies under schedule 6 of the Act were required to disclose aggregated information regarding directors' remuneration as notes which are attached to the annual reports each fiscal year. In the regulations, this proposition was modified to require from all quoted companies the disclosure the specified directors' remuneration, to be reported in the corporate governance section. The directors' remuneration report (1) should be audited and approved by the internal audit; (2) should be approved by the board of directors and shareholders; and (3) is compulsory for all quoted companies, to be disclosed as the regulations' requirements by the 31st of December 2002<sup>10</sup>. This implies that companies, which are not compliant with the regulations, will be penalized for this.

The regulations transformed the framework of executive remuneration and how it was governed and controlled by an effective board of directors. Shareholders in this case can vote on the directors' remuneration, and they are able to judge whether the compensation packages are in line with their future expectations. The report was also informative for both the board of directors and compensation committees by providing an annual insight into the pay-performance relationship. In fact, most listed

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<sup>10</sup> For full aspects of the directors' remuneration report regulations see: <https://www.frc.org.uk/getattachment/57bb2af7-addd-43f6-8dcd-d85e36857f94/Bulletin-2002-2-The-United-Kingdom-Directors-Remun.aspx>

companies tend to present additional tables which compares executive pay and performance during a five-year period. This is to show the changes in executive compensation, especially their grants of shares under either share options or LTIPs. By doing so, shareholders and investors could, at a glance, assess whether those executives met the performance conditions that were identified under the scheme. Overall, the Regulations provided proper and real reforms in terms of executive remuneration and corporate governance.

Together, all of these reports affect the way in which listed companies can behave, improving their governance arrangements in order to enhance the confidence of the public in annual reports. These reports create the term “comply or explain” in order to offer a flexible choice for companies that are listed in the London Stock Exchange. This choice is basically to say “yes” the company is complied with the code, or “no” and the company should explain why it departs from the code.

## **2.4. The structure of executive pay in the UK**

The main principle of the combined code (2014) with respect to remuneration states that:

*“Levels of remuneration should be sufficient to attract, retain and motivate directors of the quality required to run the company successfully, but a company should avoid paying more than is necessary for this purpose. A significant proportion of executive directors’ remuneration should be structured so as to link rewards to corporate and individual performance”*

(The combined code part B1: 13)

Despite of the objective aspired in the above quotation, the current issue that is well debated in all media is the excessive executive pay which has been witnessed in recent years. More recently, Bell and Reenen (2012) state that:

*“Recent figures indicate a resurgence in the growth of executive pay in the UK at a time of austerity for most. Anger at these numbers is driven in part by a growing belief that such pay bears little relationship to how the companies managed by these chief executive officers (CEOs)*

*actually perform. In other words, the argument goes, there is pay for no performance”*

Bell and Reenen (2012: 28)

Overall, executive pay in the UK has a slower rate of growth than in the US and the structure of UK pay is relatively different (Conyon and Murphy, 2000). The Greenbury Report indicates that most of UK firms offer their executive directors compensation packages that consist of six major elements. These include:

- Base salary
- Annual bonus
- Share options
- LTIPs
- Benefits in kind
- Pensions

#### **2.4.1. Base salary**

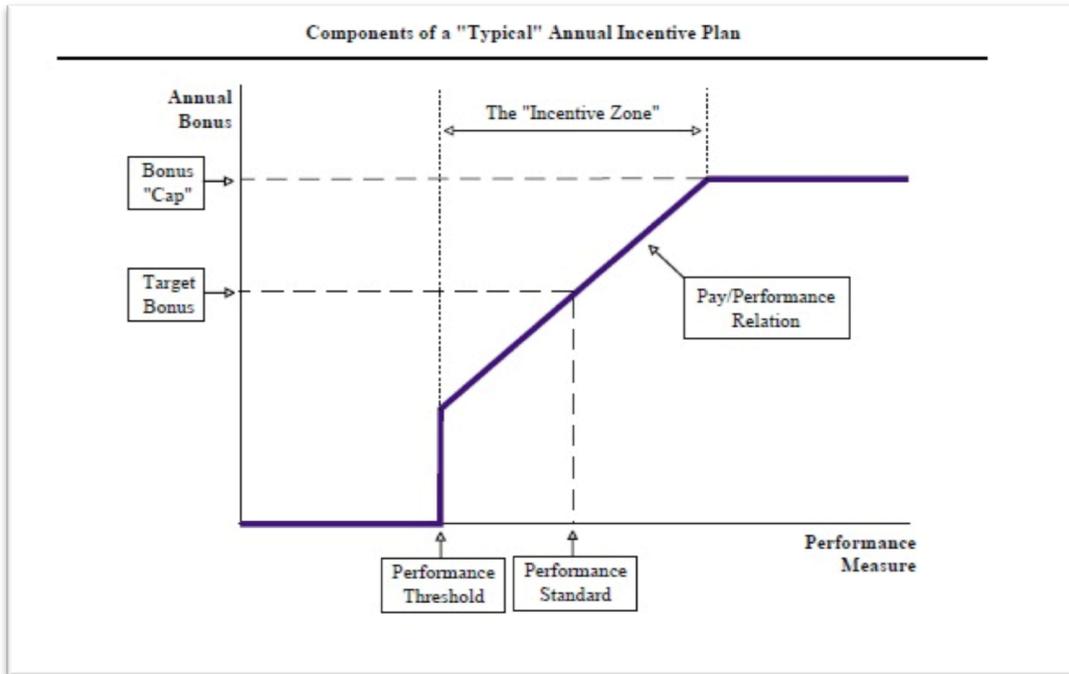
A base salary is the amount that is paid monthly to executive directors based on his or her position. The base salary could be affected by internal and external factors; internal factors are related to the size of the firm and the number of directors whereas external factors include the competitive labour market of executives, industry and the country economy. Salary is also influenced by individual differences such as experience, age and gender. This element represents the fixed payment of compensation which is not influenced by firm performance. Salary is considered the most important element in executive compensation; this is because a risk-averse manager may be willing to receive a higher proportion of their pay in the form of cash salary. The base salary is also crucial because other compensation elements are offered as percentages of the salary e.g. annual bonuses and pension are usually calculated as a percentage of the base salary. Accordingly, the increase in executive cash salary will consequently lead to an increase in other components. Conyon *et al.* (2000) show that roughly half of the UK executive pay is delivered in the form of a cash salary.

However, recent years have witnessed a decline in the percentage of executive salaries and an increase in other elements, such as deferred bonuses, which reflects long term incentive pay. In its 2012 survey, Manifest (the proxy voting agency in the UK) shows that executives' salaries rose by 2.5% in comparison with the previous year, while the increase in total remuneration was 10%. This is attributed to the increase in other performance-linked elements that ties executive directors pay with firm performance. It is recommended by the Greenbury Report that compensation committees should take into account several benchmarks when setting executive salary; these include peer group salaries, skills, experience and job risk. Practically speaking, compensation committees are usually influenced by the pay level in the previous years (Ezzamel and Watson, 2002; Doucouliagos *et al.*, 2012).

#### **2.4.2. Annual bonus**

Annual bonus is a cash element that is paid to directors based on their short-term performance. It is typically calculated as a percentage of the base salary and it is provided after achieving the specified targets of performance. These targets are usually financial yardsticks such as cash flow, net income and earnings per share. The latter is the predominant in most companies because it is linked with the share performance. There are also some less common operational yardsticks that are used when setting bonus plans; these may include customer satisfaction, the quality of specific departments (i.e. customer service) and individual productivity. Bonus plans are generally subject to the “threshold” and “cap” criteria; this implies that bonus should be constrained by minimum and maximum limits. The range that is applied in most companies is the 80/120 limit, which was one of the recommendations of the Greenbury Report. In other words, executive directors should not receive a bonus if the performance targets do not reach 80%, while they also should receive a limited bonus if the performance targets exceed 120%. This is fundamentally to limit excessive executive pay in the case of high performance achievement, and to constrain top management from manipulating accounting earnings in order to gain more bonuses. Figure 2.3 illustrates the criteria for bonus plans.

**Figure 2.3. The criteria of bonus plans that is applied in most corporations**



Source: Murphy (1998)

### 2.4.3. Share options

“Stock options are contracts which give the recipient the right to buy a share or stock at a pre-specified “exercise” (or “strike”) price for a pre-specified term” (Murphy, 1998: 15). These shares have three features; (1) they have an expiration date (usually 10 years); (2) they are non-tradable, which means that they are terminated once the director leaves the company; and (3) they are not subject to taxation until they become exercisable, which makes it an attractive choice for executive directors. This is because they will defer paying tax until a point of time in the future. Share option schemes reflect one of the key long-term incentive plans which motivate top managers to maximise firm value. Options are typically linked with performance conditions and they become exercisable if targets are reached. Since share options are the only price appreciation element, it is expected that executives may seek to decrease firm’s share price surrounding their grants’ date (Yermack, 1997; Dodd and Warner, 1983; Baker *et al.*, 2003). Accordingly, the Greenbury committee suggests not linking share options schemes with share price; to avoid price inflation which causes financial crises.

Murphy (1998) highlights two main drawbacks that are raised with executive share options. *First*, since this type of compensation is the only price appreciation option, and it is not subject to dividends, it is more likely that those executive directors who receive them will avoid providing dividends to shareholders. Lambert *et al.* (1989) provide evidence that expected dividends is inversely related to the magnitude of options acquired by top managers. This contradicts the prime aim of managerial incentives, which is advocated by an agency framework to align the conflicted interests of managers and shareholders. *Second*, for the same reason, executives will have strong motivation to engage the firm in riskier projects in order to increase share price. This is also another contradiction with the desired objective from setting pay-performance compensation. Hence, companies may prefer shifting to other long-term incentives in order to alleviate these drawbacks.

#### **2.4.4. LTIPs**

Long-term incentive plans are those grants of cash, or more usually shares, which are provided to executive officers (Murphy, 1998). These plans are conditional and tend to be tied to firm performance. LTIPs may take two forms; restricted stock and performance share plans. ***Restricted stocks*** are those shares which need to meet a specific condition to be vested. This condition may be performance benchmarks or employee longevity. The advantage of this type of incentives is that it increases executives' loyalty by encouraging them to build up shareholdings in the company. Similar to share options, restricted stocks are treated as a tax exempt element until they become vested. ***Performance share plans*** typically need three to four years performance conditions to be transferable and applicable for trading. The Greenbury committee emphasizes that "directors should not be rewarded for increases in share prices or other indicators which reflect general price inflation, general movements in the stock market, movements in a particular sector of the market or the development of regulatory regimes" (part 6.39: 43).

### **2.5. Political donations by UK companies: the suggested code**

As one of the primary objectives of this research concerns the effect of political contributions on executive pay, this section reviews the rules and regulations of

providing political contributions by UK companies. The Companies Act 2006 is considered to be the main source of guidance for companies in the UK for all behaviour relating to political donations. The Act covers all rules and regulations that all firms need to follow in order to comply with the government requirements when establishing, running and terminating business. Part 14 of the Act concerns political donations made by companies to any political party, political organisation and political candidate. It clearly differentiates between the meaning of political contribution (or donation) and the meaning of political expenditure<sup>11</sup>. This differentiation is important in that it indicates that the company needs to clearly specify in its accounts whether the political expenses are considered to be “donation” or “expenditure”.

The Act also considers the conditions for authorising political donations and what type of organisation can make political donations or expenditure. The regulations state that resolutions in terms of providing political donations or incurring political expenditure should be expressed clearly, specifying the party/individual who will receive the donation. For a registered UK company, one resolution needs to be passed by company members. In the case of subsidiaries, resolutions are required to be passed by a company and its related subsidiaries. It is also important that the amount of political contribution is precisely specified in the resolution, but if this amount is less than £5000, then the directors do not need shareholder approval. Exceeding this amount during a fiscal year needs shareholder approval to pass the resolution. This is so as to apply good governance and ensure that the directors do not have the freedom to incur the business with unneeded costs.

## **2.6. Conclusion**

The present chapter discusses three main sections. *First*, it describes briefly the nature of a quoted company and the parties that are involved in it. This description includes the four main characteristics that configure any public entity; these are limited liability, free transferability, legal personality and centralized management. *Second*, it reviews the improvement in corporate governance and executive pay

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<sup>11</sup> A political donation is money that is paid to support any political party, which could be in the form of a gift, direct support or any form of support such as property. Political expenditure refers to the situation where a company pays for a political event such as a conference or meeting.

regulations and practices in the UK. It seems that corporate governance has become an active issue since the 1990s, more specifically, after a number of large corporation scandals. These scandals motivated the FRC to start improving the corporate governance system and setting up explicit rules and regulations that assist corporations towards a more healthy business's environment. Since 1992, a number of key reports have been published by The Committee on the Financial Aspects of Corporate Governance which was known later as the Cadbury Committee. These reports build up the legal hierarchy for governance practices in the UK. In this section, a number of reports were reviewed with their basic recommendations; these include the Cadbury Report (1992), the Greenbury Report (1995), the Hamble Report (1998), the combined (1998) and the directors' remuneration report regulations (2002). The aim of these reports was either to reform the preceding code or add new rules and recommendations. With respect to executive pay, it seems that the disclosure of specified information that is related to directors' remunerations was voluntary until 2002. Subsequently, the disclosure of director remuneration report became mandatory by 2003 in the UK. *Third*, the chapter describes the structure of executive compensation in the UK. Generally, executive compensation packages consist of six main components; base salary, annual bonus, share options, LTIPs, benefit in kind and pensions. *Fourth*, it reviews the main regulations of political donations made by UK companies, which reflects that providing political support is strictly regulated and embedded by corporate governance practices that should be applied by companies in the UK.

## Chapter 3: Literature review

### 3.1. Introduction

One of the prime applications of Organisational Theory (OT) in finance is to improve firm value by addressing the way in which the organisational goals of a firm can be accomplished. This needs a better understanding of how to monitor a group of participants who contribute to goal achievement. Those members who work under the same organisational environment need to be organised, controlled and evaluated in order to ensure that the organisational structure moves towards reaching its objectives. However, this environment may create a complex situation where there are a variety of interests which are not necessarily the same for all groups (Ouchi, 1979). Therefore, the organisation as a system that is identified by the OT needs to apply the strategies of control that contribute to achieve greater efficiency, productivity and performance. In order to ensure that the business is moving towards maximising shareholders' wealth, control is deemed one of the fundamental outcomes of firm processes. Ouchi (1979) emphasises that control can be applied through two major mechanisms; *first*, control can be achieved by simply assessing performance, this implies that all members who serve in an organisational institution are being involved in observational and evaluating procedures. *Second*, control can be more complex, especially when there is a diversity of preferences and interests amongst organisation's parties. This potential conflict should be minimised to enable all of the firm's participants to fulfil the objectives aspired by the organisation. While the first control strategy is related to informational aspects such as production volume and completed sales transactions, the second strategy concerns social aspects such as incentives plans, selecting criteria and training processes.

The choice of which of the two strategies above to use depends upon the situation itself, and how control can be achieved in an appropriate way. That is, if workers' attitudes and productivity can be measured and goals are set specifically, then the performance evaluation strategy is more applicable. Whereas, in the situation where

employees' outcomes cannot be gauged and tasks are not clearly specified, the interest alignment strategy becomes preferential and more effective mechanism in achieving organisational control (Thompson, 1967; Ouchi, 1979; Eisenhardt, 1985). However, the discussion above seems to be too simplistic if we consider large and modern organisations, which often suffer from asymmetric information, and hence the control strategies may become much more complicated. Also, ever since the separation between ownership and management was advocated in the 1980s (Murphy 1998), attention has been directed to another problem that all organisations encounter as a result of this separation. This is how top management can be monitored and evaluated by shareholders in asymmetric information situations. Hence, applying the best control mechanism is considered one of the main and oldest economic dilemmas they are faced by organisations. As a consequence, Jensen and Meckling (1976) suggest the implementation of performance-based incentives as a way to minimise the interests' gap that is created as result of the separation approach between shareholders and managers. This can be a solution for unifying the goals of management with those of shareholders. However, incentive applications should be associated with a set of processes that configure the boundaries of these incentives and its roles. This is because managerial incentives can deviate from achieving aspired objectives if they are not appropriately governed. Therefore, corporate governance processes are considered the internal mechanism of control that is applied in organisations to assure that managerial incentives will not be exploited in an opportunistic behaviour that could harm shareholders' welfare (Clemente and Labat, 2009). Also, modern organisations can be affected externally by a number of political conditions. These effects may occur in either a positive or a negative way; the political connection of a business entity can either protect shareholders and investors or harm the process of governance practices in organisations e.g. when managerial power becomes an active issue in the firm (Cooper *et al.*, 2010; Aggarwal *et al.*, 2011).

This chapter aims to provide a review of both theoretical and empirical literature of previous studies. The literature will cover three main topics; executive pay, corporate governance and the political connection of organisations. These three topics have key theories that influence the empirical results by delivering different explanations of each situation. Thus, reviewing the literature provides a better understanding of how these three topics areas are interrelated in terms of their explanations and facts in one

way or another. The remainder of this chapter is organised as follows. The first section critically reviews the major theories of executive pay and corporate governance. These are Agency theory, Stewardship theory, Managerial Power Theory and Resource Dependence Theory. The second section of this chapter presents the key and relevant empirical literature, with its key findings. This is followed by the conclusion.

## **3.2. Theoretical literature**

### **3.2.1. Executive compensation theories**

The central debate in the executive pay literature premises upon the issue of how the theoretical concepts can provide the appropriate explanations of the practical use of executive pay. In other words, while one theory provides a specific justification of how executive pay can be set and implemented; another theory may contradict this justification by presenting an alternative that can explain in the same process. This is why there are still contradictions in the previous findings, because they adopt different theories to explain managerial incentives (Otten, 2007). Perhaps the dominant theory that is applied in most executive compensation literature is the Agency Theory. It describes the optimal incentive contracts of top management and how this approach of paying managers can mitigate the divergence of interests between those managers and shareholders. Another influential theory is the Managerial Power Theory, which assumes that managers extract their rent through the incentive framework that is introduced by the agency theory. Managerial power theorists believe that top executives are the main beneficiaries of compensation contracts instead of shareholders. According to this view, top managers are in a natural condition that leads them to more powerful position in organisations. Accordingly, they seem to have the freedom to set their own contracts, which in the end leads to another problem of agency relationships (in addition to interests' divergence problem) (Bebchuk *et al.*, 2002). From another perspective, Stewardship Theory contradicts entirely the view of agency theory in its treatment of managerial behaviour (Donaldson and Davis, 1991). This section will present the most three influential theories that are related to executive compensation literature; these are Agency Theory, Managerial Power theory and Stewardship Theory.

### 3.2.1.1. Agency Theory (The perfect contracting approach)

It is the nature of the firm that it involves a complex structure of many relationships and different parties who all pursue their own interests. Shareholders desire the maximisation of their own wealth, and their tool to achieve this objective is management. Managers desire the continuation of their jobs by reducing the level of risk in projects selected. Both of these parties are expected to benefit from the profitability of the business. Researchers attempt to articulate the interdependence and the divergence that are present simultaneously in these relations in a business entity, presenting in this field the theory of agency which is also known as the perfect contracting approach. The theory was initially introduced by Alchian and Demsetz (1972) and Ross (1973). Subsequently, it was developed by Jensen and Meckling (1976) who present the most influential framework that transforms the principal-agent relationship. Agency theory describes the conflicted relationship between a principal and an agent, where the agent (e.g. a manager) has to behave on behalf of the principal (e.g. a shareholder). Ross (1973: 137) defines the agency relationship as “*[It] has arisen between two (or more) parties when one, designated as the agent, acts for, on behalf of, or as representative for the other, designated the principal, in a particular domain of decision problems*”. Another definition of the theory is presented by Eisenhardt (1985: 136) “*Agency theory considers the optimal contract form for that ubiquitous control relationship in which one person, the principal, delegates work to another, the agent*”. Jensen and Meckling (1976: 308) add that “*If both parties to the relationship are utility maximizers, there is good reason to believe that the agent will not always act in the best interests of the principal*”. The best solution is reached in the literature via the introduction of managerial incentive schemes. That is, shareholders need to offer an attractive incentive to senior managers who should act in favour of the shareholders. The perfect contracting approach advocates that compensating top management in various ways may direct their interests to a position very close to that of the shareholders. By linking performance to managerial pay, the behaviour of executive officers might change to take more risk in a way that will maximise the value of a firm.

Based on the previous definitions of the theory, Gomez-Mejia and Wiseman (1997) summarise three main assumptions that are identified in the economic context of the agency literature, these are:

- *First*, it assumes that agents are **risk-averse** by nature; managers are generally assumed to pursue other needs, such as saving their jobs and not taking risky actions. This assumption seemingly affects the expectations of principals, who are willing to accept a level of risk in order to maximise their wealth.
- *Second*, agents are seen as **self-interested** parties, which implies that they serve their own interests by nature. This is regardless of whether shareholders' interests are specified in the same direction or not.
- *Third, interest divergence assumption:* which states that since agents are risk-averse and self-interested, their interests consequently are not in the same direction as principals' interests. Taken together, managers are not expected to constantly achieve the goals that lead to enhance firm value. This results in the main concern of the agency theory, that is, the dilemma of a conflict of interests.

Consequently, the agency problem is raised due to these three assumptions of the theory. Theorists, over time, endeavour to tackle the implications of this problematic fact in the agency relationships, attempting to provide the best framework as a way to eliminate or even mitigate this conflict in the relationship between agents and principals.

Based on the above three assumptions, Eisenhardt (1985) explains two cases in the context of the agency relationship, the non-asymmetric information case and the asymmetric information case. The first case is related to the situation where the principal can receive complete information about the agent's actions. If the observation of managers is sufficient and perfect, consequently, shareholders may not need to motivate these managers, since they manage to evaluate them on the basis of what they have done so far. However, the second case is more complex, when the principal cannot be completely confident regarding the agent behaviour. That is, managers here are situated in a position that allows them to possess additional information about the organisation and the market conditions, which might not be easily reached by shareholders. The second case describes the modern organisation

more accurately than the first one, and hence the literature places more emphasis on the case of informational asymmetry (Ross, 1973; Jensen and Meckling, 1976; Arrow, 1971; Eisenhardt, 1985; 1989).

Since the perfect monitoring of top management cannot be fully achieved in large businesses, there are two problems that might be associated with in the second case. These are identified in the literature in relation with two managerial behaviours; *moral hazard* and *adverse selection*. Arrow (1971) clarifies the *moral hazard* problem as a situation where there are two parties (shareholders and managers) who need to set an agreement to ensure that each party enjoys benefits while being involved in organisational tasks. Shareholders in this case are bounded to specify clearly what managers should do in order to satisfy shareholders' interests. Managers also require their rights and compensation for serving the owners' utility. However, a moral hazard problem arises here due to the uncertainty that managers will act in favour of shareholders' interests due to the imperfect monitoring situation that has been mentioned above. Managers tend to maximise their utility and be in the safe position, hence they are more likely to be unwilling to bear additional risk, even if this action is what shareholders expect and require. The only factor that shareholders will depend upon is the morality of their managers, as they should perform always in a collective way and not as individualists (i.e. Stewardship Theory claim).

The other problematic managerial behaviour of the principal-agent relationship is related to the situation of adverse selection. This indicates that managers naturally acquire additional information which may not be known by shareholders. This creates the asymmetries in the flow of information between the two parties. Managers also acquire private information which may motivate them to exploit this merit in order to complete their own profitable transactions. Taken together, at the end of the day, poor performance by self-serving managers will harm shareholders welfare (Macintosh and Quattrone, 2010).

Moral hazard and adverse selection actions are discussed widely in the literature, revealing two possible solutions that contribute to the reduction of the harmful effects of these two problems. Eisenhardt (1985) suggests two options for shareholders to reduce such effects; they might apply monitoring mechanisms to control managers' behaviour, such as cost accounting approaches and budgeting strategies. The

alternative option suggests applying a reward scheme on the basis of managers' performance. By doing so, agents who take this option are rewarded after the assessment of firm's profit that is achieved so far. This option, however, may be in some occasions unfair for both groups since there are conditions which might affect the total outcomes of the firm. These conditions tend to be uncontrollable by managers and shareholders, such as market crashes, political conditions and strict regulations. Correspondingly, shareholders might reward managers impressively (unfairly) depending on their outcomes, which might not be attributed to their good (poor) performance (Eisenhardt, 1985). Jensen and Meckling (1976: 308) identify these options as the agency cost. This cost consists of three components; *first*, "monitoring costs" which includes the cost that is borne by principals for controlling agents' behaviour. *Second*, "bonding costs" which refers to the efforts that are taken by agents as a way of increasing shareholders welfare, such as advertising expenditures. *Third*, "residual loss" which means the decrease in principals' welfare as a result of agents' decisions that might not serve principal' interests.

### **I. Agency theory: A critical assessment**

There has been much debate on the theory of agency; one of the areas most broadly discussed by critics is the ethical aspect of the principal-agent relationship (e.g. Heath, 2009). The term "agent" is questioned by critics when using it in the context of agency relationship, because it refers to the person that represents another person to a third party. This is from the legal perspective and implies that the agent should completely serve the principal's interest (Pratt and Zeckhauser, 1985). By applying this term to the agency framework, the agent does not completely act for the sake of the principal's welfare, and hence this term is not entirely appropriate to the incentive scheme of agency theory. Moreover, from the economic perspective, agency theory confirms the conflict between the two parties' interests, which contradicts the legal view of the "agent" definition. Heath (2009) states two major objections to the concerns of ethicists in the business field about this view of agency theory. The first concern is the belief that the agent is a rational, self-interest person and that they need to be motivated in order to serve the principal's requirements. This suggests that ethics are not present in the field of business in this manner; a position that is not acceptable to ethicists for obvious reasons. The second objection is related to the

nature of the relationship between agents and principals. How this relationship has been identified in the literature reflects a concern for researchers in this field. Agency framework asserts that the role of the agent is limited to serving the principal's (who always are defined as the shareholders) goals, while proponents believe that agents should serve the whole firm and not merely shareholders.

Based on the second objection, Stakeholder theory, which was introduced during the 1970s and improved by Freeman (1984), advocates that managers should take all participants in the firm into their account when setting and achieving organizational objectives. Clarkson (1995: 106) defines the term 'stakeholders' as "*are persons or groups that have, or claim, ownership, rights, or interests in a corporation and its activities, past, present, or future.*" Unlike the theory of agency, and according to stakeholder theory, management is accountable to other employees, suppliers, customers, government and the community where the firm operates. He also adds that each organization works under systematic processes that all stakeholders are involved in, producing collectively the final outputs. Thus, all interests should be satisfied under this theory and not merely the interests of shareholders. Freeman (1984) believes that the firm, as the multitude of relationships of all these stakeholders, can be affected in its decision making process by the overlapping of these relationships, and therefore this should be taken into consideration when assessing the economic outcomes of the firm.

Arthurs and Busenitz (2003) also discuss another limitation of the agency framework. They specify the boundaries of this theory in respect of four dimensions where they address two types of goals; actual and perceived. Figure 3.1 shows briefly these four dimensions in conjunction with the two cases of goals. The first situation takes into account that both types of goals (i.e. perceived and actual) are the same for both parties (principals and agents). The agency theory in this case is seemingly silent and it cannot explain behaviours when there is no divergence in the goals between the two parties. The second situation refers to when both parties perceive different sets of goals, where there is actually an alignment in the goals. In this case, the principal may overestimate or underestimate the situation and set up an excessive compensation or dismiss managers when there is no need for this extreme behaviour. Hence, the theory may be less applicable here since it describes only the principal's behaviour.

**Figure 3.1. The four dimensions of goals alignment/nonalignment between shareholders and managers**

		Perceived goals between shareholders and managers	
		Same	Different
Actual goals between shareholders and managers	Same	Silent agency theory explanations	Less applicable agency framework
	Different	More applicable agency framework	Visible agency theory explanations

Source (Arthurs and Busenitz, 2003)

The third situation might be more appropriately explained by agency theory; where there is a divergence in the actual goals while the agent's perception is different from the principal's. It is similar to the previous case, but the difference here is that agency theory can explain the agent's behaviour and provide a better understanding for the principal so as to avoid the agency conflict. The last case, which assumes the extreme case of the agency problem, where the goals are different for both parties, is obviously the most viable situation for applying the agency framework.

It is generally believed that the agency framework is one of the most effective models that describes the owners-managers relationship (Otten, 2007). But, as with any theory, limitations such as the above motivate scholars to build other conceptual frameworks in order to fill the gap that appears in the theory. Because it is the main assumption of the agency framework that top management should be motivated through the use of monetary tools, this implies that the theory treats managers as purely opportunistic agents, and ignores other moral and personal attitudes that could motivate them more than the need for financial incentives. Thus, it seems that this claim by the agency framework, and how it treats top management, is the main criticism that is raised by the Stewardship Theory (Donaldson and Davis, 1991; Arthurs and Busenitz, 2003).

## II. Agency Theory Vs. Stewardship Theory

It is widely thought that Stewardship Theory is the alternative of the agency theory. However, if we thoroughly consider the former theory, it might become clear that the stewardship theory has a different perspective on which is offered by the agency theory. Davis *et al.* (1997: 21) describe stewardship theory as defining “*situations in which managers are not motivated by individual goals, but rather are stewards whose motives are aligned with the objectives of their principals*”. The primary theoretical assumption of this theory is based on the notion that senior managers act in non-opportunistic manners, and hence this can be seen as contradictory to the agency theory. Top management under this theory are assumed to focus on their success as a part of the corporation’s success (Arthurs and Busenitz, 2003). The theory has sociological and psychological roots which may justify its support for managers’ having this attitude. It defends them by saying that managers have other incentives to perform well regardless of their own selfish (monetary) interests. These incentives are often related to humanistic values such as self-esteem and the need for achievement (Arthurs and Busenitz, 2003). However, this theory contradicts the agency problem in the sense that if agents have no self-interests, then there is no need to pay them more since they seek naturally to maximise firm value. The major difference between the stewardship theory and the agency theory is that the former is based on humanistic model while the latter is based on economic model.

It is also complex when considering stewardship theory in the case of goal congruence. This is because, if we apply theoretically the assumption which says that managers’ interests’ premise upon the success the business, then it is futile to provide them more incentives. Managers that are paid high compensation may become greedy over time unless of course they have much more skill and experience in leading a firm to financial success, and are therefore being paid for what they know and can achieve above the level of the average that is expected by shareholders (Arthurs and Busenitz, 2003). Eventually, stewardship theory also fails to justify behaviours in the situation of goals alignment. However, this is not to say that both theories are not applicable, but instead, it could be said that each theory has its own features. These might be appropriate for one situation and not in another. This may suggest a hybrid paradigm that can explain properly all of these situations without being biased to one party.

### **2.2.1.2. Managerial power theory (The rent extraction approach)**

It is generally believed that linking executive pay with the performance of the corporation can alleviate the divergence in interests of managers and shareholders (Jensen and Meckling, 1976; Murphy, 1985; Jensen and Murphy, 1990a). However, the principal-agent framework results in putting managers in a key position in the firm. By doing so, this position allows them to use the power and relationships to arrange their compensation contracts in a way that serve their interests. This seems to be problematic if we consider that managers, in reality, set their own compensation (Bebchuk and Fried, 2006). More powerful executives can extract more rents without showing the relative performance in their organisations. Jensen and Murphy (1990b: 149) state that “*one problem with current compensation practices is that boards often reward CEOs with substantial equity through stock options but then stand by to watch CEOs undo the incentives by unloading their stockholdings*”. The agency relationship can be explained by other factors that may not be addressed by the agency theory. That is, largest corporations may have talented and more powerful executive officers. Accordingly, these corporations may not be willing to lose those executives, and hence this gives those managers the discretion to arrange their own contracts. This assumption lies at the heart of Managerial Power Theory (Finkelstein and Hambrick, 1988; Tosi & Gomez-Mejia, 1989; Finkelstein, 1992; Finkelstein and Boyd, 1998; Bebchuk *et al.*, 2002; Bebchuk and Fried, 2006). According to managerial power theory, the introduction of performance-based compensation as a solution for the agency conflict seems to create another problem. That is, even though agency theory explicitly declares that managers are self-interested, it neglects the powerful position that is occupied by those officers and thereby this position allows them to control the sources of the organisation (Tosi & Gomez-Mejia, 1989). Bebchuk and Fried (2004) argue that the ‘the official story’ of the agency theory does not embed the power of managers in explaining the incentive system as a way to align the interests.

According to the optimal contracting approach, directors are assumed to represent shareholders and control managers' behaviour in order to satisfy the interests of owners. Unlike this view, managerial power theorists believe that those directors (both insiders and outsiders) have hidden motives to serve management's interests rather than those of shareholders (Bebchuk and Fried, 2006). These motives stem from everyday relationships between senior directors in the board which build up

social relations between them (Main *et al.*, 1995). Another related justification for the presence of power in the executives-outside directors relationship is mutual interests. Outside directors may be willing to serve management in order to increase the likelihood of their re-election to the board. Bebchuk and Fried (2006) add another motive to this context; since directors are responsible for setting managers' compensation, they may collude with managers and increase executive pay. By doing so, it is expected that directors' fees will accordingly be raised. These motives suggest that the relationship between non-executive directors and other executives provides the power and the authority to top managers, and leads them to exploit their positions to serve their own interests.

Finkelstein (1992) classifies managerial power into four types. *First, structural power* is the popular form of managers' power and it is based on the hierarchical structure and top positions which are occupied by those officers. A manager's structural power provides them with the authority to manage other subordinates, control organisational sources and acquire private information about the organisation. *Second, ownership power* is the situation where managers own shares in the organisation where they serve. Managers that are deemed founders of the business or have strong relations with the founders may enjoy greater power than other managers. Moreover, the ownership of management empowers executive officers over the board of directors and allows them to have more control on the board than other directors. *Third, expert power* is the level of experience of executives in coping with a variety of tasks and problems. This type of power explicitly appears when an expert manager can deal with critical problems that may augment his own power and qualify him to be an advisor for other managers. *Fourth, prestige power* is related to the personality and reputation of some managers. Being in "the managerial elite" allows an executive officer to have contact with the external institutions and authorities, which allows them to build a personal reputation with these external agencies. Giddens (1972: 348) identifies managerial elite as referring to all "*individuals who occupy formally defined positions of authority at the head of a social organization or institution*". This form of power permits managers to represent the organization to external entities. Understanding these types of power provides a vision of how managers can control the organization for the sake of themselves and extract the rent that they desire.

It is critically debatable to judge which of the two theories (agency theory or managerial power theory) explains executive pay most accurately. Agency theory assumes that managerial incentives can minimize the gap between the interests of both shareholders and managers. Managerial power theory, on the other hand, explains the relationship the other way around; it assumes that managers exploit their powerful position in maximizing their compensation, and hence it may not be linked to the performance of the organisation. Another difference between the two theories appears in the boundaries of setting executive compensation contracts. While the former approach advocates that managers should be paid at an optimal level which keeps them from leaving their corporations. The latter approach claims that executive pay rise gradually over time until the public reaction constrains this increase (Weisbach, 2007). The public reaction is assigned by Bebchuk and Fried (2002) under the term “*outrage cost*” (p: 4) which can be defined as the negative concern of the public which tends to be associated with the high executive pay and poor performance.

The concept “outrage cost” as a constraint of executive pay is criticized in the literature because it is not explicitly specified (Murphy, 2002; Weisbach, 2007). Although managerial power theorists declare the limit of executive compensation to be as high as possible until reaching the public reactions, this boundary seems to be ambiguous and not entirely informative. Murphy (2002) reports that Bebchuk and Fried's framework (i.e. the effect of managerial power on setting compensation contracts) may explain executive pay in some situations, such as explaining the volatility of stock prices in the market around option grants (this will be presented in more detail with the supported findings in the empirical literature later in this chapter). Murphy also contends that this analysis of managerial power theory is too simplistic to practically predict compensation contracts. In his empirical work, Murphy (2002) provides evidence to show that the hypothesis of the rent extraction view is inconsistent with the practical use of executive pay; he states that:

*"I show that the escalation in executive pay during the 1990s coincided with increasingly independent corporate boards; this evidence is inconsistent with the managerial power hypothesis. In addition, I show that CEOs hired from the outside with no ties to the existing board enjoy especially attractive pay packages; this evidence is also directly inconsistent with the view that CEOs use their relationships with their boards to extract rent." (Murphy, 2002: 850)*

The conclusion to which of the two views provides the best predictions for executive compensation cannot be determined at this stage. The empirical evidence may support one of them more than the other. Moreover, in some situations it might be informative to apply the optimal contracting approach while it may not be appropriate for explaining other issues that are related to managerial incentives.

### **2.2.2. Corporate governance theories**

Executive compensation is a debatable issue which lies at the heart of corporate governance. This issue is also deemed crucial for policy makers who need to be updated with the recent academic research in this area. In accordance with the general attention, scholars attempt to render the explanations of how executive pay might be governed under specific processes that should be applied in organisations. Since corporate governance is very closely related to executive compensation, there are some executive pay theories which also explain corporate governance. This is because the relationships (i.e. those of shareholders and managers) are the same in both subjects. However, a specific theory may explain both subjects, but from different perspectives. For instance, agency theory advocates that managerial incentives are considered the best solution for aligning interests. While the same theory describes corporate governance applications as a monitoring mechanism which should be implemented in all economic entities. Thereby, corporate governance practices seem to be the tool for controlling executive pay contracts and ensuring that this tool achieves its correct objectives. Also, the system of rewarding and penalising executive directors can reflect the level of governance in a firm (Ross, 1973; Jensen and Meckling, 1976; Eisenhardt, 1989).

Stewardship theory is also considered one of the fundamental theories in corporate governance. It also contrasts the agency and managerial power theories. Academics in this area believe that governance stems from the stewards themselves, without the need for supervision (Davis *et al.*, 1997). Top managers are assumed to be good performers in order to build their reputation. They attempt to maximise shareholders' wealth merely for achieving non-financial interests, such as saving jobs and building a solid reputation (Shleifer and Vishny, 1997; Daily *et al.*, 2003). In this case, executive

directors may not need to be financially motivated, since their goals match the collective organizational goals.

### **2.2.2.1. Resource dependence theory**

Unlike managerial power theory, Resource Dependence Theory (RDT) suggests that the relationship between the board of directors and external organisations, government and other institutions seems to be required in any modern organisation. It opens up access to external resources by those directors, which in turn brings the benefits to the corporation (Pfeffer, 1987; Pfeffer & Salancik, 1978; Daily *et al.*, 2003; Nicholson and Kiel, 2007). Pfeffer (1972a, 1972b) is the first to provide the theoretical framework of RDT. He believes that all organisations in any society are interdependent with each other. This interdependence is associated with the uncertainty of the organisation's success because each organisation will not be confident about other organisations' actions. Thus, the corporation needs to have an access to the external environment in order to cope with this uncertainty of others' organisational behaviour. According to this theory, the more access to external resources an organisation has, the more power it has to manage, be successful and survive (Hillman *et al.*, 2009).

Pfeffer and Salancik (1978) elaborate the actions that can be taken by organisations to reduce environmental dependence. These actions take five forms; *first*, **mergers and acquisitions**; firms tend to acquire other firms in order to decrease their competitors, to gain additional resources or to increase the diversification of their operations, which in turn reduce the dependence on the current firms (Pfeffer, 1972a; Walter and Barney, 1990; Casciaro and Piskorski, 2005). *Second*, **joint ventures**; this refers to the alliances between organisations that can take several forms of business partnerships (Pfeffer and Nowak, 1976; Park and Mezias, 2005; Barringer & Harrison, 2000). *Third*, **the size and structure of the board of directors**; according to resources dependence theory, the environment where a corporation operates affects the way in which its board of directors can be sized and composed (Pfeffer, 1972b; Johnson *et al.*, 1996; Nicholson and Kiel, 2007; Hillman *et al.*, 2000). Pfeffer (1972b: 220) states that “*The effect of the board on company success will then, depend on how well the board meets environmental requirements*”. Although this theory is not deemed to be the dominant theory in explaining the board structure, there is a great

deal of empirical research that supports the use of RDT to predict a board's size and composition (Pfeffer and Salancik, 1978; Kor and Misangyi, 2008). It is also believed that the presence of external directors who previously occupied specialist jobs (i.e. lawyers or business experts) allows the firm to have access to external resources that serve the business survival needs. As a consequence, these directors indeed employ their previous experience in the current business (Daily *et al.*, 2003).

*Fourth, political actions*; firms, in order to reduce the uncertainty of their environment, tend to apply some government regulations to shape a better organisational environment (Pfeffer and Salancik, 1978). This also can be seen in the system of election inside any organisation that reflects a political process that creates its own environment (Hillman *et al.*, 2009). RDT also explains the links between the dependence on the government and the board of directors. Firms seek to have some former government officials serve on their board as a way to ensure that other employees, including executives, are well managed. Empirical research also supports this notion by presenting evidence that the presence of ex-politicians on the board is associated with better financial performance that may be attributed to strong governance practices (Aharoni *et al.*, 1981; Hillman *et al.*, 1999; Hillman, 2005; Lester *et al.*, 2008). *Fifth, executive turnover*; as a reaction to environmental contingencies, and to reduce their effects, organisations are likely to change their executives after experiencing poor performance. Failing to cope with the uncertainties of the external environment may be seen as a result of executives' poor performance. Therefore, the suggested remedy for this situation is the process of executive turnover. That is, firms tend to remove executives and hire others as a way to diminish the effects of the strong competitive environment and its uncertainties (Harrison *et al.*, 1988; Guthrie *et al.*, 1991; Zhang, 2006).

As any theory, RDT has its limitations, and these are addressed by theoretical and empirical literature. Davis and Cobb (2009) illustrate two criticisms of RDT. *First*, the theoretical and empirical analysis of mergers and acquisitions has been done on the industrial level rather than at the firm level, and this may deliver misguided results. *Second*, recent empirical findings show that some of the theoretical assumptions of RDT have become inconsistent with the rapid evolution of organisations and their environments. The theory assumes that the power which is

acquired through accessing external resources can predict organisational behaviours such as mergers and board composition. Practically speaking, recent organisational behaviours are no longer consistent with this prediction; Davis and Cobb (2009: 11) report that:

*"By the 1990s, evidence suggested that board interlocks never occurred within an industry, and were quite rare among major buyers and suppliers, or between corporations and their bankers—executives tended to find the idea of co-opting a supplier through a board seat to be a bad idea, given the board's legal duty of loyalty"* (Davis and Cobb, 2009: 11)

Eiriz and Wilson (2006) add another weakness of the RDT; they question the theoretical assumption that firms are always rational in their organisational actions (i.e. economic decisions, competence, managerial control, board interlocks), and hence it ignores the fact that this is not always the case because there is a degree of possibility that organisations behave irrationally on some occasions (e.g. ignorant, irresponsible or incompetent behaviours).

In conclusion, the theoretical literature relating to executive pay and corporate governance seems to provide a number of conceptual explanations that supplement the empirical body. These explanations are varied due to the fact that each theory examines the issue from a different perspective. The previous section has reviewed the dominant theories in this area; these are Agency theory, Managerial Power Theory and Resource Dependence Theory. The main claim of the agency theorists is that in order to reduce the agency problem's effect, it is suggested that managerial incentives play the role of interest alignment. Managerial power theory on the other hand argues that the incentive scheme is a tool that increases the power of managers. This is seen as a problem rather than a solution (as it is in agency theory) with respect to interest alignment. Resource Dependence Theory is also reviewed as one of the main theories of corporate governance. It states that the network of directors' relationships is essential for the business. This is because these external ties open access to external resources for the firm, providing the firm with a comparatively powerful position compared to its competitors. The critical review of these theories involves other theories such as the Stewardship Theory and Stakeholders Theory. The stewardship theory contradicts the theory of agency and managerial power in its conception of managerial behaviours. Its main claim is that managers are assumed to serve their

interests, which are deemed a part from firm' objectives. Managers are seen by the theory as good stewards rather than self-interested agents. From another perspective, stakeholder theory claims that all interests should be taken into account when setting organisational goals. Managers should not only serve shareholders while there are other stakeholders (i.e. employees, debtors and suppliers) who have a variety of interests in a firm. This critical review of these theories provides a better insight of how executive pay and corporate governance practices can be explained.

### **3.3. Empirical literature**

Scholars from different disciplines have been attracted by the topic of executive compensation and its relationship to corporate performance. Economists, sociologists, financial academics and even psychologists have provided influential findings since the 1930s. Executive compensation in the United States has become a subject debated on the floor of Congress (Murphy, 1998). Moreover, the media has given wide coverage of the issues that are related to executive compensation and firm performance. This issue is given front-page coverage in many newspapers which demonstrates that the media's desire to expose the issue. This may be attributed to the recent trend of executive pay increases, while the performance still suffers from market crisis implications. Murphy (1998) shows that executive pay during the 1990s has jumped to double the amount that was in the 1970s. More recently, the 17<sup>th</sup> annual executive compensation survey issued by IPS in 2010 confirms that even though executive pay has been adjusted after the economic crisis in 2008, it has still increased to become double the amount that it was in the 1990s. This relentless rise in managerial incentives seemingly motivates researchers to investigate this issue to update the empirical body by recent findings. This is due to the fact that linking executive pay with firm performance raises a number of questions of how executive pay reflects performance, especially in recent years which have witnessed several economic problems such as crisis and recession. Therefore, the modern history of empirical research links executive pay to corporate governance applications in corporations as a way to understand this topic from different perspectives.

One stream of studies are more concerned about the effect of paying higher compensation on the profitability of a company, and whether the incentives of senior

managers can really predict corporate performance (e.g. McGuire *et al.*, 1962; Lewellen and Huntsman, 1970; Murphy, 1985). Another stream of scholars focus on the determinants of compensation contracts and whether the profit of a company and good performance will lead to a high level of managerial incentives (e.g. Ciscel and Carroll, 1980; Grabke-Rundell and Gomez-Mejia, 2002). Executive compensation literature is also presented through a variety of approaches and statistical models which are associated with diversified findings. Modern literature also includes studies of corporate governance, as it is one of the main processes in a modern organisation that can affect the composition of executive pay. This section will review the empirical literature of executive pay and corporate governance because of their close relationship. This review will be presented from different perspectives, which includes the historical literature of executive pay and the main dominant themes in each period of the literature. It also links executive pay to corporate governance, presenting the key studies in this area. It also includes a review of the main findings that test the relationship between political connection and executive compensation.

### **3.3.1. Executive Compensation, Sales or Profit**

Research into executive pay extends back over 80 years. Studies from this period are considered to be the fundamental starting point for any scholar, even though their findings tend to be modest due to some factors such as the lack of rich data and problems that are related to applied statistical approaches (Ciscel and Carroll, 1980; Murphy, 1985). Baker (1939) is one the earliest studies in this field. He compares the level of executive pay in both large and small companies. His sample consists of 51 large companies with 53 small businesses. In his paper, Baker defines the term “executive compensation” as “the total dollar payments made to executive officers” (*ibid*: 408). According to his definition, executive compensation only refers to the cash payment and it does not include other types of compensation such as stock-based compensation and warrants. He also links executive pay to earnings and sales. These two variables are basically the leading factors that researchers are often interested in investigating in early research on executive pay. Baker reaches several key conclusions; he finds that large companies pay their executives higher compensation than small firms. But, the latter receive a larger percentage of profit than their

counterparts in large companies. He also adds that the proportion of distributed profit for senior managers that is shared with stockholders is significant.

Gordon (1940) investigates 149 of the largest US companies in three major sectors. The purpose of Gordon's paper was to examine the effect of managerial incentives on firm performance. With regard to executive compensation, he traces salaries and bonuses for top executives. He also examines shareholdings and dividends of those executives. The study finds that cash compensation plays a more effective role than shareholdings and dividends in influencing performance. Gordon also believes that non-financial incentives such as prestige and power have a noticeable effect on leading executives, especially in largest corporations. Gordon's findings may support the notion that is claimed by stewardship theorists. It also partly supports the agency theory's claim in the sense that cash compensation can contribute to enhanced firm performance.

These two leading papers have opened up the debate in the area of executive pay. Roberts (1956) investigates the relationship between executive compensation, firm size and profit. By using the classical correlation approach and a sample of 3000 firms, Roberts finds that executive pay is closely correlated with firm size rather than profit. He also adds that profit is also correlated with the firm size and concludes that the size of the firm plays the major role in predicting both pay and performance. Similarly, Simon (1957) examines the determinants of executive salaries. These determinants include economic factors such as competition and social ones such as the benchmark of paying executives by using the organisational hierarchy. He also believes that executive pay is closely related to the size of the company. His results indicate that the social norms can predict the level of executive salaries more than the economic determinants.

In related literature, Baumol (1958) argues that executive pay in the United State is more closely correlated with a firm's sales than its profit, and this can lead to bankruptcy problems. He presents the theory of oligopoly, which assumes that top managers behave opportunistically in some occasions. This can be seen when they seek to maximise sales revenue in order to impress stockholders that the business is performing well. Thus, Baumol believes that in long-term conditions, profit is far more important to save corporations. However, senior managers would not be

interested in maximising a company's profitability since they are assessed in accordance with sales movements. Assessing executive officers by looking at sales figures refers to only short-term performance, and this creates another problem in the agency relationship. McGuire *et al.* (1962) build on this conceptual framework by investigate 45 US industrial firms for a seven-year period. They examine three main variables; executive compensation, sales and profit, but they cover executive compensation in a broader way to encompass salaries, bonuses and stocks that acquired by executives. Their findings support Baumol's assumption that the income of leading managers is strongly and significantly related to sales and not profit. They also conclude that executive pay could be a function of current or past sales. Masson (1971) criticises these types of cross-sectional studies in that they are not appropriate to trace the behaviour of executive pay. He also points out that measuring executive compensation by only looking at salaries and bonuses could be biased since those managers build huge wealth from non-cash compensation. This may pave the way for improving the measurements of executive compensation and firm performance.

The vast majority of earlier studies treat executive compensation as the dependent variable, and they are more concerned with the determinants that affect the level of executive pay. Unlike the findings of Baumol (1958) and McGuire *et al.* (1962), Lewellen and Huntsman (1970) and Prasad (1974) find little evidence of such relationships between managerial pay and sales. Lewellen and Huntsman (1970) aims to examine whether or not top executives are paid on the basis of firm performance, which is measured by sales and profit. They undertake their research by utilising the data of the 50 largest US corporations for the period of 1942-63. Their methodology depends on the use of multiple regression models. With respect to variable selection, it includes executive compensation measured by salaries, bonuses and total compensation. They add to the previous literature the use of total compensation, which covers non-cash components such as deferred stocks and contingent compensation. With regard to profitability variables, they use, similar to the majority of the literature in that period, total after tax profit and sales revenues. They also employ the market value of equity as one of profitability indicators. The conclusion of this study supports the notion that executive pay is more closely related to the profit of a firm and equity market values. This implies that senior managers are more tied to their pay to satisfy shareholders' interests. This study also finds weak evidence

supporting the relationship between the compensation of leading managers and sales. This conclusion is consistent with agency theory assumptions that executive pay can enhance shareholders' wealth.

Prasad (1974) also investigates the same issue of whether executive pay is more closely correlated with sales or profit. He employs the same multivariate methodology as Lewellen and Huntsman on 823 companies in 1972. Compensation is measured only by total remuneration of top executives. He concludes that both profit and sales can predict executive pay. Moreover, he mentions that there are still other omitted variables which can significantly determine managerial compensation. In the same context Masson (1971) presents findings which contrasted with Baumol's hypothesis that executives' incentives would result in sales maximisation. Masson's data covers the period of 1947-1966 and he measures executive pay by calculating the change in total executive financial return. This covers all financial incentives including stock return. With respect to firm's profit, he employs the change in the earning per share of a firm, and he also uses sales revenue as one of the independent variables. His significant findings indicate that companies pay their executive for profit maximisation and not for increasing sales revenues. That is, managerial incentives can enhance firm stock performance, which supports the agency theory. In his study, Masson declares that his sample is relatively small, which could affect the possibility to generalise his findings. Nonetheless, he believes that his study can solve a number of statistical problems that were encountered by many previous studies.

### **3.3.2. Executive pay and firm performance**

The literature on executive pay also reveals a variety of methods that are used in empirical research and there have been improvements in the selection of variables. Performance, for example is measured by two groups of variables; accounting-based measures and market based measures. Executive pay is also determined by a number of variables including cash and non-cash compensation. It is therefore worthwhile to review a series of key studies that debate the topic of the best measurement criteria (Lambert, 1983; Lambert and Larcker, 1984, 1987). Lambert (1983) argues that short-

term compensation contracts will create a horizon problem<sup>12</sup>. Hence, he investigates the effect of executive compensation on performance using a multi-period analysis. He employs the two-period model in order to show that when managers are responsible for more than one period, the agency problem can be mitigated. That is, long-term compensation contracts will encourage those executives to enhance corporate value, since they themselves are affected by the firm's long-term performance. Lambert and Larcker (1987) apply the agency framework in an attempt to examine the relationship between executive pay and performance. Their study aims to discover which of the two performance measures (i.e. accounting or market measures) are considered more informative to shareholders. They investigate 370 US corporations, including the major sectors, for a period of 15 years. They build on the theoretical framework of Holmstrom (1979) by using a single period agency model, and they apply multi-period agency models as their theoretical model. They also use the Box-Cox procedure as their empirical model. The main contribution of this study was the use of two types of measures in terms of corporate performance; accounting-based measures assigned by the return on equity and market-based indicators measured by the stock return. With respect to measuring compensation, they only include salary and bonus in their sample, because they believe that cash compensation represents around 80% of total managerial compensation. They find that cash compensation is positively correlated with the accounting indicator, while it exhibits only a modest correlation with the stock return. These findings are consistent with the agency theory assumptions that managers are risk-averse agents. Another result from Lambert and Larcker's cross sectional study is that the greater the signal to noise ratio of the two performance measures, the more informative it is as a tool for shareholders. They also conclude that high growth companies adopt more stock-based compensation contracts. This confirms that the use of accounting earning is not fully informative in the long-term.

Murphy (1985) shows how the improvement in statistical tools and the using of different types of variables can affect the robustness of findings. He criticises the previous cross sectional studies for omitting some significant variables relating to executive compensation and how they limit their sample to the salary and bonus of

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<sup>12</sup> Horizon problem refers to the situation where agents perform for the short-term rewards at the expense of long-term welfare (Lambert, 1983; Smith and Watts, 1982; Dechow and Sloan, 1991).

executive pay. Previous studies are also criticised by Murphy because they ignore some factors which need time-series analysis, such as past performance, entrepreneurial behaviour and firm size. As a response, Murphy attempts to solve these problems in his impressive study, which covers the data of 73 of the largest US firms, over the period from 1964-1981, and examines 501 executives. Murphy's sample includes most of the compensation elements such as salary, bonuses, salary and bonuses, deferred compensation, stock options and total compensation. Regarding performance measurements, he employs the growth of sales, stock index and stock variance. By using both cross sectional and time-series designs, Murphy finds that executive remuneration can be strongly predicted by company performance, in other words, Murphy believes that higher executive pay means better firm performance. This conclusion also validates the agency theory claim that managerial incentives could be the best tool for enhancing firm value.

However, there are a number of studies which find no significant evidence to support the notion of an incentive-performance relationship. Aggarwal and Samwick (1999a) argue that the principal-agent model fails to explain this relationship in a competitive environment. They apply the relative performance evaluation model under a more competitive market. Their methodology is based mainly on an OLS regression analysis which covers 7824 executive compensation contracts over the three years from 1993-1995. They find only weak evidence of a relationship between executive pay and firm performance when the market is highly competitive. According to their results, executives may receive either high or low compensation, not necessarily as a result of their performance; but instead as a result of others' performance in rival firms in the same industry. Similarly, Jensen and Murphy (1990a), Conyon and Leech (1994) and Conyon and Murphy (2000) also find that the economic significance of the relationship between executive pay and performance is very small, which may question the agency theory predictions in this vein.

### **3.3.3. Executive pay and the market reactions**

In the modern economy, the market tends to be a mirror for a firm's performance by tracing its share's behaviour. The literature in this context shows evidence of how the market behaves immediately after a variety of announcements that are related to

executive compensation events. Furthermore, managers are aware of this behaviour and they have a strong ability to control the dates of these announcements. This demonstrates the powerful role that is played by these managers in an attempt to gain greater wealth from the market. This notion is attributed to the acquisition of private information by executives, which allows them to time the announcement of this information into the stock markets (Tehrani and Waegelein, 1985; Brickley *et al.*, 1985; Defusco *et al.*, 1990; Yermack, 1997; Aboody and Kasnik, 2000; Chauvin and Shenoy, 2001). While Tehrani and Waegelein (1984) investigate how the stock price reacts after announcing the introduction of short term incentives such as bonus plans for executives, Brickley *et al.*, (1985) investigate the market reactions under the condition of long term incentive plans provided to top management. Both studies employ an event-study approach; they trace the abnormal returns around the announcement event of any introduction of new compensation plans. The findings of both investigations support the notion that the introduction of either short or long term incentive plans for top management are associated with a positive stock return. They also point out that managers can control the time of the announcement of this information in order to gain abnormal returns.

From a similar perspective, Defusco *et al.* (1990) examines the effect of introducing share option plans for executives on both shareholders and bondholders. Share option plans are seen the best way for sharing risk by executives with their shareholders. Accordingly, the market is expected to react after receiving the news regarding adopting share option schemes. They also employ the event-study approach, which is the most effective way to measure the abnormal returns surrounding announcements of any information that might influence share price. The Black-Scholes option pricing model is applied in this study as a measure of valuation options, and share price variances is used as a measure of stock return over the research period of 1978-1982. Their findings confirm the positive return for shareholders after these events. This supports the hypothesis that stock-based compensation contracts indicating higher risk sharing for top management will probably be translated to the selection of more risky projects. In contrast to the positive effect on shareholders, bondholders are affected in a negative way from increasing risk sharing, i.e. it results in a decrease in a bond's price.

Another strand of the literature in this area provides evidence of how managers control the time for leaking either good or bad news. Dodd and Warner (1983), Yermack (1997), Aboody and Kasnik (2000), Chauvin and Shenoy (2001) and Baker *et al.* (2003) investigate whether the time of granting options to top managers affects a firm's share price. They also scrutinise whether there is an indication of managerial control of announcing good or bad news immediately after they are awarded their options. This is because managers tend to behave in an opportunistic way in order to gain abnormal returns. Yermack (1997) analyses 620 share options that were granted to top managers for 500 major US companies during a two-year period. He employs the same event-study methodology applied by Dodd and Warner (1983) and by tracing from one month prior to the CEOs being granted options to approximately three months after this event, he reports positive abnormal returns after the day of the awards of approximately 2%. Based on Yermack's (1997) findings, managers tend to retain good announcements to be published exactly after they are granted stock options. This is a way that executives manipulate the release of information to benefit from the increase in share price which is often associated with the favourable news. The findings of both Dodd and Warner (1983) and Yermack (1997) confirm the opportunistic behaviour of executive officers. This can be seen in the timing of announcement of favourable news for the sake of their interests rather than shareholders' interests. These findings support the managerial power theory perspective that top officers tend to extract rent from their equity compensation emoluments.

Following on from the research of Dodd and Warner (1983) and Yermack (1997), Aboody and Kasnik (2000) investigate whether there is evidence of the delaying of the announcement of good news to after the award date. They analyse 2039 executives' stock options in a sample which consists of 572 firms. Aboody and Kasnik (2000) believe that managers may also have an influence on their compensation committee to modify the date of and options grant. By employing the same approach as previous studies, they conclude that there are abnormal returns that they are reported directly after the grant of options. This supports the notion of managerial opportunistic behaviour when controlling the time of publishing of a piece of information. From a similar perspective, Chauvin and Shenoy (2001) find that share price drops just before the date of a grant. This confirms that executives

manipulate the time for releasing either good or bad news in order to affect share price to serve their own interests. From a theoretical perspective, this could question the agency theory's proposal of managerial incentives and the fundamental basis of the stewardship theory. These findings emphasise that managers perform for the sake of themselves rather than enhancing firm value. Chauvin and Shenoy (2001) also suggest that their findings may help to provide insights to corporate policy makers to modify some of granting criteria or the way in which executives' share options can be priced.

From a different angle, Baker *et al.* (2003) investigate the opportunistic behaviour of top managers who control the time of information release. Unlike prior studies in this area, they examine the discretionary accrual choices and how managers may report accounting earnings around their options award date. They investigated 168 firms using a fixed-effect panel data analysis in order to discover the relationship between reporting earnings and the magnitude and time of option awards of CEOs. It is known that discretionary accruals is a tool for lowering reported earnings, hence it is widely used by earning management to manipulate figures before an awarding date. Managers subsequently leak this information to the market, correspondingly affecting share price prior to their award date. Baker's study documents the fact that managers who acquire more options in their compensation packages often have the incentive to use the accrual choice that will lower reported earnings in order to decrease the share price prior to their options' grant date. They conclude that the magnitude of options is strongly and adversely related to accruals amongst the firms which tend to publish earnings announcements before the executives' award date. These results provide evidence that supports the managerial power view that managers use their power and position to gain abnormal returns.

#### **3.3.4. Executive compensation, decision making and risk taking**

As presented above in the theoretical section, one of the agency theory's assumptions is that managers are risk averse by nature. This is the reason they need to be motivated by a variety of compensation packages. As a consequence, executive officers who are awarded a higher proportion of their compensation in the form of stocks are expected to become more risky in their selection of investment projects.

This can minimise the gap between the interests of both parties (shareholders and managers). But, on the other hand, excessive stock based compensation may negatively affect shareholders if top management become riskier than the level that is required and acceptable from the perspective of shareholders. A stream of scholars have been attracted to this perspective and many attempts have been made to investigate the relationship between executive compensation and decision making (Lambert, 1984; Agrawal and Mandelker, 1987; Lewellen *et al.*, 1987; Defeo *et al.*, 1989).

Lambert (1984) assumes that executive compensation (especially equity based compensation) may create a conflict between managers and shareholders in terms of selecting either safe or risky projects. Agrawal and Mandelker (1987) present their empirical paper which supports the hypothesis that equity based compensation contributes to the reduction of the principal-agent problem. The purpose of Agrawal and Mandelker's study is to examine the effect of common stocks and options that are acquired by executives on both investment and leverage decisions. In a sample of 209 firms for the period from 1974-1982, two results are reached in this regard; *first*, they find that stock based compensation has a positive impact on investment returns. *Second*, this form of compensation also affects financing decisions, which implies that firms with a high debt to equity ratio are expected to also have a large component of stocks in their executive compensation packages. Lewellen *et al.* (1987: 309) in a similar investigation conclude by stating that "*In a world of costly information, the associated conclusion is that since agency costs are not zero, an understanding of firms' investment and financing decisions may require knowledge of their managerial compensation programs*". However, Defeo *et al.* (1989) investigate the relationship between gain that is generated by the switching between equity and debt, and executive cash compensation. They report that there is an association between these two variables, but that this is not statistically significant. This may be attributed to their selection of variables in terms of the use of cash compensation as an indicator of this association. It would be expected that this form of compensation might not be effective in explaining the sensitivity of this relationship. In other words, examining short-term compensation will not fully deliver long-term decision effects.

Related literature shows how the introduction of performance-based compensation can affect senior managers' behaviour. They tend to select more risky projects or to overinvest in the stock market, especially with their ability to acquire private information. This is more likely to be associated with stock-based compensation (Bizjak *et al.*, 1993; Gray and Cannella, 1997; Chen *et al.*, 2006; Drake and Kohlmeyer, 2010; Armstrong and Vashishtha, 2011). Bizjak *et al.* (1993) examine the relationship between managerial incentives and the choices of investments. Using a data set that covers the 1969-1988 period for 422 of the largest US firms, they employ a regression analysis by estimating three regression models using the OLS approach. With respect to study's variables, they assign three dependent variables; (1) the ratio of salary and bonus to total compensation, (2) cash compensation and (3) total incentives. With respect to their explanatory variables, they use the ratio of market to book value and the ratio of R&D expenditures to total assets. Firm size and the level of regulation are assigned as control variables. The conclusion is that concentration on current stock price when compensating top management can result in suboptimal investments, which can be either overinvestment or underinvestment. In this study, the authors identify that it is more likely to be overinvestment rather than underinvestment especially with the presence of asymmetric information. They suggest that firms with high information asymmetry should tie their executives by composing long-term stock-based compensation, but they believe that this is not necessary in the case of firms with low information asymmetry. They also conclude that high-growth firms tend to place less weight on pay-performance compensation than low-growth firms.

Gray and Cannella (1997) investigate the relationship between executive compensation and the level of risk that is taken on by managers. A panel data analysis is employed for 100 firms during a ten-year period. Their methodology is based on using a generalised least square estimation (GLS). They measure risk sharing between shareholders and managers by selecting three elements; total compensation, compensation risk and compensation time period. The age of the executives and stockholdings are also investigated in association with the risk factors. They find that the level of risk in CEO's compensation (which tends to be in the form of stocks) is positively correlated with the total compensation. This means that firms tend to increase executives' risk sharing by paying them more in the form of stocks, which

represent an uncertain return for those managers. This also contributes to the alignment between principals and agents, which is the main claim of agency theory. It is also reported that older executives receive less risky compensation contracts, which may also represent a managerial power effect that managers who serve longer in the firm may not be willing to receive riskier compensation emoluments. Another conclusion that is related to CEO's stockholdings is that the more common the stocks that are acquired by senior managers are, the less risky their compensation contracts are. This demonstrates that stockholdings, in reality, represent a degree of risk for top managers that could compensate for the need of high equity-based compensation.

Chen *et al.* (2006) investigate whether or not stock-based compensation induces risk taking amongst firms' executives in banking industry. They investigate the period from 1992 to 2000 to gain a sample of 68 commercial banks with 70 CEOs. They run a regression analysis using several variables that are related to executive compensation, such as options and total compensation. There were also other variables that reflect risk measurements, such as bank size and non-interest income. The key conclusion of this study is that the proportion of options in executive compensation in the banking industry increases gradually during the research period. Furthermore, their evidence supports the notion that option-based compensation increases risk taking amongst bank managers. These findings provide the insight that paying top management depending on stock performance will increase the propensity of risk in their compensation. This consequently encourages them to take on more risky projects. However, as mentioned above, this is not always the case, because this can lead to suboptimal investment, which might return profits for managers rather than shareholders.

Similarly, Armstrong and Vashishtha (2011) examine the role of options that are provided to senior directors in their selection of risky projects. The purpose of this study is to investigate whether managers attempt to increase either the systematic or unsystematic risk of the firm as a way of gaining wealth through their options. The authors use Vega and Delta<sup>13</sup> as indicators of executive share options in relation to firm risk. Their findings indicate that there is a positive relationship between the sensitivity of options to stock volatility and systematic firm risk. This implies that

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<sup>13</sup> Vega is the measure of options' sensitivity in response to asset volatility, while delta refers to the sensitivity of share options to an asset's price.

executive share options which are sensitive to stock price can be an incentive to change (both systematic and non-systematic) firm risk. Drake and Kohlmeyer (2010) investigate a similar issue from a different angle; they focus on bonuses as incentives for managers and their effect on managerial decisions depending on past performance. They identified two types of bonus plans which are offered to CEOs; hurdle and graduated. The hurdle bonus scheme refers to the situation where managers will not be compensated for taking additional risks. Whereas, the graduated scheme means the higher returns achieved will result in the greater bonuses. They find that in the case of hurdle scheme, senior managers tend to take less risk, whereas the amount of risk that undertaken in the graduated scheme was higher. Additionally, they report that past positive performance is likely to be associated with the hurdle scheme while negative performance tends to be witnessed among firms employed graduated bonus plans. This confirms the theory that executive compensation has a key role to play in changing managers' behaviour to be more risky in their selection of projects.

### **3.3.5. Corporate governance and executive remunerations**

The theory of the firm indicates that corporate governance is one of the most influential factors that affects firm performance, and it can also transform the relationship between principals and agents (Holmstrom and Tirole, 1989). In recent years, empirical literature relating to executive pay significantly links it with corporate governance because it seems to be the vehicle for evaluating the process of paying executives. Understanding corporate governance implies understanding its overlapping processes, both those internal and external to the firm. Perhaps the board of directors is assigned as one of the important signals for governance in the firm (Fama and Jensen, 1983). This is because the board of directors represents a source of pressure on top managers who have to encounter either strong internal corporate governance applied by the board or be are tied with long stock-based compensation. The latter choice is seen as the harsher choice for executives in some occasions (Baysinger and Butler, 1985; Boyd, 1994). Recent works also investigate the quality of the compensation committee because it is seen as another corporate governance mechanism which may provide insights about the level of executive compensation and its effectiveness in setting pay that is appropriate to help achieve the aspired goals (Newman, 2000; Anderson and Bizjak, 2003; Sun *et al.*, 2009). However, managerial

power and ownership are considered to be barriers that obstruct the proper application of corporate governance in firms. Thus, the negative effects on corporate governance practices of these factors are also investigated; several studies provide findings that are related to the effect of managerial power on both executive pay and firm performance (Grabke-Rundell and Gomez-Mejia, 2002; Bebchuk and Fried, 2006; Florackis and Ozkan, 2009).

The topic of corporate governance and executive pay receives considerable attention in the literature due to its broad dimensions and conflicting findings. How corporate governance affects the remuneration of top management is one of these dimensions. The determinants of corporate governance that are interrelated with executive compensation and corporate performance is also another key theme in this literature. Furthermore, the measurements that can be employed in the empirical research are numerous and they might be correlated with each other to create a problem for researchers in this field. Since the literature is rich in corporate governance and its influence on executive pay and ultimately on performance, this section has been divided into a number of subsections according to each specific theme. This section will review the most influential papers in the literature on executive pay and corporate governance.

#### **3.3.5.1. The board of directors effects**

The board of directors is considered to be one of the most powerful mechanisms that are employed by shareholders to be their eyes and ears inside the firm. Shareholders depend considerably upon the level of this board's strength to ensure that senior managers are controlled internally through a number of procedures, such as the composition of their compensation contracts. Theoretically speaking, the board of directors has the right to approve compensation contracts, fire managers and hire others as a way of controlling the firm and protecting shareholders' wealth (Baysinger and Butler, 1985; Core *et al.*, 1999). In other words, it is assumed that this board is more likely to approve compensation contracts for CEOs that tie them more with firm performance. Thus, the independence of this board tends to lead the firm to better performance (Coughlan and Schmidt, 1985).

Baysinger and Butler (1985) and Boyd (1994) both investigate board features in terms of the percentage of internal and external directors. Baysinger and Butler (1985) examine 266 US corporations from 1970-1980. They classify directors into thirteen categories and analyse their affiliations using their biographies. With respect to measuring performance, they use the return on equity as the best measure (in their view) of performance. The methodology is undertaken through a correlation analysis and cross-lagged regression analysis. They document that there is a significant positive correlation between board independence and firm performance. Their findings support the theory that more independent directors are likely to control managers to serve shareholders' interests. Conyon and He (2012) also support these findings and provide evidence that higher director independence tends to be associated with higher performance-linked compensation. Boyd (1994) also investigates the same issue by linking the above variables to executive compensation; he employs a theoretical structural model and tests it empirically using a LISREL VII model. He finds generally that the board control is associated with lower executive pay, but interestingly he also finds that the ratio of internal to external directors is inversely related with executive compensation level. This may contradict the general belief that internal directors may positively affect the level of executive pay. Boyd interprets this conclusion that internal managers perhaps feel that they would be assessed by external directors and hence they may not serve their own interests because they aspire to eventually be CEOs in the future themselves.

Perhaps one of the pioneering works in this area is the study of Core *et al.* (1999: 380). In this study, the researchers investigate whether a board's features have an impact on executive pay. They classify the board characteristics as follows; a dummy variable for CEOs, whether they are board chair or not, board size (the number of all directors), the percentage of internal directors, the percentage of external directors who are assigned by CEOs, the percentage of "gray" directors (who receive payments from the company in addition to their board pay), the percentage of interlocked external directors (if there are more than one external directors from the same firm), the percentage of 69 year old (or above) external directors, and the percentage of busy directors (who serve on multiple boards). They also measure compensation by using three variables; (1) total compensation, which includes cash and non-cash elements, (2) salary and bonus and (3) salary. They conclude that executive compensation is

lower only in firms with more internal directors on their board, while executives are paid excessive compensation in firms with a higher percentage of any of the remaining categories. This may indicate that managers depend upon their power and personal relationships with external directors, which affects the way in which their compensation can be set. Alternatively, these findings may also be interpreted to highlight that busier directors may represent weak governance and inefficient, high executive pay.

However, Ferris *et al.* (2003) investigate the same issue in relation with firm performance and whether directors with multiple directorships negatively affect firm performance. They reach the conclusion that firm performance is likely to increase the chances for directors to have multiple directorships. This may be attributed to the notion that multiple directorships provides insights into the talent of other directors. They find on the other hand that busy directors are not associated with poor performance. This conclusion may validate the assumptions of the resource dependence theory in the sense that firms tend to attract busy directors in order to gain a network of external relationships that could ultimately benefit the business. In related literature, Bouwman (2011) adds to these findings, that the director network has a significant effect on governance practices among firms, which is termed in this paper as “*the familiarity effect*” (p.2358). He provides evidence that companies are more desirable to directors who serve on firms that apply similar governance applications. Correspondingly, those directors who serve in firms with different governance practices are likely to transfer their experience between firms, and this is what is identified by Bouwman as “*the influence effect*” (*ibid.*). All of these results confirm the importance of the board of directors as an effective mechanism for applying corporate governance in any business, saving shareholders rights in this manner and enhancing firm value.

### **3.3.5.2. Executive dismissal vs. Managerial power**

Governance practices vary among companies, and one of these practices is the action of top managers' layoffs following poor performance. However, this practice may not be easy to apply, especially in the presence of managerial entrenchment. The literature investigates multiple relationships regarding management turnover and firm performance (Coughlan and Schmidt, 1985; Dahya *et al.*, 1998; Denis *et al.*, 1997;

Canyon and Florou, 2002; Lau *et al.*, 2009; Henderson *et al.*, 2010). Some evidence reveals that strong governance in the firm may lead to top management dismissal while other evidence describes this relationship the other way around; management turnover may be followed by either good or poor performance.

Coughlan and Schmidt (1985) supplement the body of empirical literature by examining whether stock return as a market-based performance measure can affect top management positions. They find that poor and unacceptable performance may lead the board to lay-off the responsible executives. Their methodology was the use of observations of executives' turnover during the two years of research. Logit regression analysis is employed and the results are consistent with what they assumed i.e. higher stock return often decreases the probability of managerial layoffs. Similarly, Denis *et al.* (1997) employ logit regression to investigate top management changes (their dependent variable) in relation with firm performance, board of directors and ownership structure (their independent variables). They document that the probability of removing executives from their positions is higher after witnessing poor performance only in firms with lower managerial ownership and greater blockholders. They find no significant evidence of such effect of the board of directors as a governance tool. Dahya *et al.* (1998) and Hillier *et al.* (2005) support this notion by presenting additional findings that are related to UK firms. These findings indicate that firms with a more independent board of directors are more likely to dismiss their CEOs if they show poor performance.

Lau *et al.* (2009) investigate the same issue by using a sample of 100 of the largest Australian corporations and covering the period from 1997-2004. They assign managerial switch as their dependent variable, while the explanatory variables encompass (1) profitability indicators, such as return on assets and stock return, and (2) corporate governance measurements that include board size, board composition, managerial ownership, CEO tenure and the concentration of ownership. They also employ a logistic regression model, which reveals consistent findings with the majority of the empirical literature. They report that there is a negative association between firm performance and management turnover. In contrast to Dahya *et al.* (1998) and Hillier *et al.* (2005), they do not find a significant effect of corporate governance factors on executive dismissal, except board size, which was positively

related to managerial layoffs; a larger board size seems to dismiss managers for their poor performance.

### **3.3.6 Political connection and firm performance**

The literature that investigates the relationship between executive pay and political connections is still growing. There are a handful of studies that scrutinize the effect of the political connections of some firms on both executive compensation and corporate performance. The political connection is examined in the literature by either investigating the effect on firm performance of (1) the presence of ex-politicians in the board of directors (Faccio 2006; Faccio *et al.* 2006 Faccio and Parsley 2009) or (2) the political contributions that go towards politicians' campaigns for some companies (Roberts, 1990; Ansolabehere *et al.*, 2004; Goldman *et al.*, 2009). In this vein, Cooper *et al.* (2010) investigate whether the political contributions of a firm affect future stock returns. Taking into consideration that this relationship could suffer from causality conditions, they aim to examine 1980 US firms with 819,815 political contributions from 1979 to 2004. By using a panel data analysis, they find a positive and significant correlation between firm's political contributions and its future returns. The conclusion of this study indicates that firms tend to donate to politicians to create positive future investments rather than assuming that this contribution is merely a patriotic good.

From another standpoint, Goldman *et al.* (2009) aim to explore whether there is an influence on firm's future return of announcing that politically connected directors are joining the board. They investigate the two major political parties in the United States; the Republican Party and the Democratic Party; hence, they classify firms' boards according to these two parties i.e. boards are politically connected to the Republican Party or boards are politically connected to the Democratic Party. The data from this study covered all S&P 500 companies in the years from 1996 to 2000, and this was to gather evidence around the 2000 US presidential election. They also trace stock prices around the election date to show which of the two groups of firms outperforms the other and whether the stock prices respond directly to announcements of any political connection of firms being investigated. They reach the conclusion that Republican boards perform better than Democratic ones. This is evident by the

reported abnormal return after the announcement of the Republicans winning in 2000. Also, they document that stock prices increase just following the announcement of board nomination when Republican supporters join boards. This conclusion supports the theoretical assumption of the RDT which advocates that the political connection of a firm strengthens its positions against peer firms.

However, there are other studies that refute this notion. Bertrand *et al.* (2008) scrutinize politically connected firms from the standpoint of employment patterns i.e. the firing and hiring incumbents and jobs opportunities. They also investigate whether CEOs who provide political support receive in turn benefits from this connection with politicians. It is assumed that subsidies and tax exemption are two signals of these mutual interests between CEOs and politicians. Thus, they examine these two variables to measure this effect in the election years. They also investigate whether politically connected firms experience higher profit in comparison with other non-connected firms. Their data covers French companies for the period of the 1990s and early 2000s and they employ fixed-effect model for their regression analysis. The findings from this study indicate that politically connected CEOs tend to alter their behavior in firing and hiring resolutions in a way that serves political candidates in their election process. They do this by provide favours to politicians in the form of increasing employment opportunities in their firms in order to increase the chance for the political candidate to be reelected due to being seen to create job opportunities. However, this study did not find evidence of returning favors from politicians to CEOs through subsidies and tax exemption. They also find that accounting earnings in politically connected firm are lower than other not connected firms. This is because increasing employment in the firm is more likely to increase labour cost, which could affect the profitability of the business.

In related literature, Aggarwal *et al.* (2011) examine firms' political donations in relation to its future return. They also investigate corporate governance practices and whether they have an effect on donation levels, and accordingly, firm profits. The study covers the period from 1991 to 2004 taking the national election of the United States into account. They use three estimators to run their regression; OLS, Heckman Two-Step and Instrumental Variables (IV). This includes a number of performance variables (i.e. stock return, book to market value for equity, return on assets (ROA),

and sales growth), political connection variables (i.e. political donations) and governance variables (i.e. board size, the number of insiders, block shareholders, institutional shareholders). The results indicate that the political contributions are merely another agency cost which negatively affects firm performance. Firms which donate to politicians show poor operating performance; this is seen in their lower stock returns, ROA and sales growth, and with a higher book to market equity. This study also finds that good corporate governance characteristics are inversely related to political donations and positively related with future returns. This may indicate that the political contributions represent another agency conflict within the firm.

### **3.3.7. Executive pay: world wide evidence**

Most of the previous literature covers US corporations and this is one of the gaps in the existing executive pay literature. This can be attributed to the shortage of executive compensation data in other countries, until recently. Nevertheless, there are a number of key studies which have been undertaken in countries such as the UK, Australia, European countries, Japan and China. It is worthwhile reviewing the findings of these studies as a way to increase our understanding of the issue for non-US firms.

Empirical studies from the UK have to take into account the introduction of long-term incentive plans among UK firms from 1995 (Buck *et al.*, 2003). There are several studies that show limited findings before this year; Ingham and Thompson (1993) examine whether deregulation affects executive remuneration in UK building society sector. They employ a cross-sectional design for two consecutive years. Their results show that deregulation increase executive pay by the profitability and growth of this sector. Watson (1994) scrutinises the differences between the financial and non-financial sectors in their executive pay determinants. By using qualitative and quantitative analyses, he demonstrates that the determinants of executive remuneration differ between financial and non-financial firms in the UK. He finds for example that the age and education of an executive are important factors that can determine their pay level in non-financial sector. Meanwhile, financial executives are more dependent in their remuneration on firm size and historical experience.

These earlier studies were then followed by a stream of studies in the UK; Conyon *et al.* (2000) investigate the structure of executive compensation in 200 firms for one fiscal year. They find that CEOs' wealth from share options seems to be higher than the value of these options, which is deemed only a fraction of total compensation. It is also found that the pay-performance sensitivity is about 0.18%. The linkage between corporate governance and executive pay is also examined by investigating other factors such as the use of compensation consultants as an external governance process (Voulgaris *et al.*, 2010) or board structure and its effect on executive pay (Ozkan, 2007; Guest, 2010). Gregg *et al.* (2012) question the implications of executive bonus plans and its contribution to the world economic crisis in 2008. Buck *et al.* (2003) scrutinise the efficiency of LTIPs and its effectiveness in enhancing firm performance.

Evidence from Australia ranges from finding no evidence of a relationship between executive compensation and firm performance (Izan *et al.*, 1998), to finding a significant positive association between executive share options and firm performance in high growth businesses (Hutchinson and Gul, 2006; Li *et al.*, 2011). Chalmers *et al.* (2006) investigate the determinants of executive pay from two perspectives; labour demand and rent extraction. They find that governance and ownership are important factors that determine the level of executive pay. However, these determinates vary with executive compensation elements. They also found that cash and share compensation are more determined by a company's demand for talented executives, whereas, bonuses and share options provide a sign of rent extraction behaviour that is exercised by those managers. The divergence of the previous studies' findings may be attributed to their methodologies, which mainly depend on the use of either ordinary or pooled least-square regression models. The use of these models seems to be not appropriate for explaining the dynamic nature of executive pay and firm performance (this will be discussed in more details in the methodology chapter). As a reform of research methodologies, Capezio *et al.* (2011) employ GMM estimation as a way to solve for the endogeneity problem which may occur in these types of relationships. They investigate the independence of the board and its impact on executive pay. Their evidence is inconsistent with managerial power theory; they find that stock-based compensation is an increasing function of the independence of the board, and

document that the only proxy for predicting executive pay is the size of the business, and not firm performance.

There are few studies which have been undertaken in European countries other than the UK; Muslu (2010) provides recent evidence which supports the optimal contracting perspective. He finds a positive relationship between the presence of insiders in the board and pay disclosure. It is also found that incentive pay is positively associated with the presence of these insiders. There is also some evidence from Germany which varies in its results. Some studies reach the popular conclusion which supports the positive relationship between firm performance and executive compensation (e.g. Elston and Goldberg 2003). Fiss (2006) focuses on corporate governance mechanisms such as board independence and its effect on managerial pay. He finds that the presence of insiders on the board served shareholders better than outsiders, which differs from the findings of much previous work in this vein.

Evidence from Japan seems to have a popular theme which indicates, unlike most of executive pay literature, that stock return does not significantly influence managerial compensation. Otherwise Japanese findings are consistent with the literature in the area of corporate governance; i.e. it is found that weak governance is likely to be associated with high executive pay (Shuto, 2007; Basu *et al.*, 2007; Sakawa and Watanabel, 2008; Nakazato *et al.*, 2011). From the methodological perspective, Kato and Kubo (2003) provide findings that are generated from a panel data approach using a sample that consists of 51 Japanese firms from 1986-1995. By doing so, they conclude that cash compensation has a stronger correlation with accounting earnings (i.e. ROA), which plays more significant role in determining executive pay than stock return. With respect to transition economies, the best findings are from China, where recent findings confirm the importance of corporate governance mechanisms (e.g. ownership and supervisory board) in balancing executive pay and linking it with firm performance (Conyon and He, 2012; Su, 2011).

### **3.4. Conclusion**

This chapter presents an overview of the theoretical and empirical literature relating to executive pay, corporate governance and the political connection of firms. The theoretical section critically reviews the main theories which were adopted by

previous studies as they explained executive compensation and corporate governance from several perspectives. These theories include Agency Theory, Managerial Power Theory and Resource Dependence Theory. The empirical section has been classified into several subsections depending on the major theme of each group of studies or the historical context of these studies.

It is noted that the theoretical concepts presented in this chapter differ widely in their explanations of the manner and implication of executive pay. In general, the agency model is assumed to be the dominant framework that explains the relationship between executive pay, corporate governance and their influence on firm performance. This view assumes that risk-averse and self-interested managers should be motivated by the scheme of performance-based incentives and monitored by a set of governance mechanisms internal and external to the firm. This is to ensure that the interests of senior managers are in line with those of shareholders (Arrow, 1971; Alchian and Demsetz, 1972; Ross, 1973; Jensen and Meckling, 1976; Eisenhardt, 1985; Gomez-Mejia and Wiseman, 1997).

Alternatively, managerial power theory argues that managers under the agency relationship are situated in a position that allows them to have the freedom of arranging their own compensation. This position provides these managers with greater power in a way that can damage the intended goals of the agency framework (i.e. interests' alignment) (Finkelstein and Hambrick, 1988; Tosi & Gomez-Mejia, 1989; Finkelstein, 1992; Finkelstein and Boyd, 1998; Bebchuk *et al.*, 2002; Bebchuk and Fried, 2006). However, Resource Dependence Theory suggests another perspective that explains corporate governance, but from the external perspective of the relationships of directors with other organizations, which is assumed to be the gate for accessing external resources. It also assumes that the presence of former politicians or governors in the firm's board is a signal of the response to the external environment by organisations. More specifically, this political connection could be related to top managers in the case of providing political support to political institutions or parties. Moreover, firms prefer to organize their environment to be similar to government regulations in order to create a better organisational hierarchy (Pfeffer, 1987; Pfeffer & Salancik, 1978; Daily *et al.*, 2003; Nicholson and Kiel, 2007).

With respect to empirical literature, findings seem to be conflicted, which may be attributed to either its adoption to one theoretical explanation rather than another, or to the differences in research methodologies between studies in this field. Theoretically speaking, the majority of reviewed studies validate the agency framework as the most appropriate theoretical model that explains the relationship between executive pay and firm performance (see Jensen and Murphy, 1990; Main, *et al.*, 1995; Murphy, 1985; Buck *et al.*, 2003; Agrawal and Mandelker, 1987; Gray and Cannella, 1997). However, Lambert and Larcker (1987) Bizjak *et al.* (1993) and Chauvin and Shenoy (2001) for example, demonstrate that the agency framework does not necessarily provide the optimal compensation contracts that tie managers exclusively to firm performance. These studies show how managers manipulate either accounting earnings or announcing information for their own sake. This contradicts the objectives that are proposed in the agency model.

Empirical studies also suffer from inconsistencies in their findings. The majority of studies report that the relationship between executive pay and firm performance is statistically significant (see Coughlan and Schmidt, 1985; Main, *et al.*, 1995; Murphy, 1985; Lewellen and Huntsman, 1970; Prasad, 1974; Lambert and Larcker, 1987; Agrawal and Mandelker, 1987; Armstrong and Vashishtha, 2011; Drake and Kohlmeyer, 2010). In contrast, a number of other studies find no evidence of such a key relation between executive pay and firm performance (see, among others, Aggarwal and Samwick, 1999a; Jensen and Murphy, 1990a; Conyon and Murphy, 2000; Conyon and Leech, 1994). When linking executive pay with corporate governance, findings in this area also seem to be inconsistent. The greater number of reviewed studies supports the view that the structure and size of a board of director' have a key impact in balancing the level of executive compensation in a way that achieves better performance (see Baysinger and Butler, 1985; Boyd, 1994; Core *et al.*, 1999; Conyon and He, 2012). The other side of this debate find no significant evidence of governance practices on executive pay (Denis *et al.*, 1997; Lau *et al.*, 2009).

Evidence from other countries seems to be small in comparison with most of the previous US studies. The current literature seems to have a modest number of UK-based research. Furthermore, the vast majority of prior literature concentrates of the

question of ‘What are the determinants of executive compensation?’ Hence, very few studies undertake research that answers the question of whether executive compensation contributes to enhance firm performance or if it is just a pay without performance phenomenon. With respect to prior research methodologies, most of the previous studies depend mainly on cross-sectional design, using OLS regression or fixed-effect estimation, ignoring the dynamic nature of the relationship between executive pay and firm performance, which can suffer also from an endogeneity problem. Only a few studies attempt to employ other effective models such as GMM estimation (see, for example, Lilling, 2006; Capezio *et al.*, 2011). This may explain why the findings in this area are still ambiguous with respect to the impact of executive pay on firm performance.

Another gap in the literature concerns the investigation into whether or not the political connection of firms influences the level and the structure of executive pay. More precisely, there is no evidence so far that is related to politically connected firms in the UK. There are a handful of non UK-based studies that scrutinise the effect of directors’ political background on both executive compensation and corporate performance that can be seen through the political contributions of some companies. These studies reveal a mix of evidence that politically connected companies differ in a positive way from non-connected firms in their level of shareholders’ protection (Goldman *et al.*, 2009) and future stock return (Cooper *et al.*, 2010). In contrast, Bertrand *et al.* (2008) and Aggarwal *et al.* (2011) show that political contributions are just another agency cost and it does not contribute to maximize shareholders' wealth. These gaps in the literature need to be filled by additional research in this area.

# Chapter 4: Research Methodology

## 4.1. Introduction

Executive remuneration has attracted a great deal of public attention in recent years. This is driven by the extensive and sustained rise in executive pay in most developed countries. This has simulated academics to investigate whether this significant increase in pay is related to firms' performance in order to have more insight into the effectiveness of managerial incentives which are advocated by the agency framework. Two questions arise from increased executive pay. *First*, what are the determinants of executive pay and what is the nature of the relationship between executive pay and firm performance? *Second*, does rising executive pay reflect top management contribution to firm performance or it is just following patterns from past years?. Prior research provides mixed findings which may be attributed to the overlooked fact of the dynamic nature of the pay-performance association. This may result in applying relatively biased estimators such as the most popular models in executive pay research: OLS and FE.

While early studies are limited by the availability of executive pay data, their methodologies also depend only on either time series or cross sectional analysis (see, for example, Masson, 1971; Coughlan and Schmidt, 1985; Lambert and Larcker, 1987). Murphy (1985) elaborates that executive compensation research should not be conducted using only a cross-sectional approach, because it requires a long-term investigation to be able to track the exact effect on firm performance. It is also not sufficiently informative to scrutinise the executive compensation's effect for one or two years because some of executive pay components require more than a three-year period of time to be vested and acquired by managers. Recent studies show an improvement in executive pay and corporate governance research with respect to methodological aspects, yet, most of the empirical literature adopts the classical OLS approach (see, among others, Sloan, 1993; Jensen and Murphy, 1990a; Lambert & Larcker, 1987; Gibbons and Murphy, 1990; Schaefer, 1998; Ke *et al.*, 1999; Bizjak *et*

*al.*, 1993) and fixed effect panel data model (see, among others, Murphy, 1985; Hubbard and Palia, 1995; Brick *et al.*, 2005; Graham *et al.*, 2012).

The present chapter discusses the models employed by prior research and their limitations of these which apply to this thesis. Pooled regression models and fixed effect panel data analysis may not be the best estimations for executive compensation models due to the associated natures of executive pay and firm performance. It is crucial to draw attention to the fact that that this relationship has three potential characteristics which differentiate it from other relationships that have been empirically investigated. These are its *dynamic nature*, *endogeneity* and *unobserved heterogeneity* (Boschen and Smith, 1995; Main *et al.*, 1996; Wintoki *et al.*, 2012; Doucouliagos *et al.*, 2012). The present chapter aims to investigate these three characteristics in more detail in order to identify the appropriate model which accommodates all of these problems. Mainly, this study adopts GMM estimation which is believed that it is the least biased estimation for this dynamic dataset (Wintoki *et al.*, 2009). More specifically, the system GMM model is applied in all research analysis because it is considered to be one of the most efficient estimators in modern econometric analysis (Capezio *et al.*, 2011). This is because it remedies most of statistical problems that appear with other types of regression analysis such as heteroskedasticity<sup>14</sup> autocorrelation<sup>15</sup> and, most importantly, endogeneity, which will be discussed later in this section. Only a handful of previous studies employ the GMM approach in examining executive pay and firm performance (e.g. Capezio *et al.*, 2011; Wintoki *et al.*, 2009; Gregg *et al.*, 2011; Doucouliagos *et al.*, 2012).

The remainder of this chapter is organized as follows. First, it explores the two popular econometric models that are used in prior studies, i.e. OLS and FE. This exploration includes the fundamental theoretical assumptions that each model is based on. This is followed by a critical discussion of the main limitations that discount the use of these models in this study. Second, GMM technique is presented as the model that is adopted in this research, with its advantages and main assumptions. The third section introduces the data, sample, and variables selection. The fourth section

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<sup>14</sup> Heteroskedasticity refers to the situation where there is variability in the variance of a group within the sample in a period of time. This variance can be predicted such as the variance of gas consumption in a specific period of the year, or unpredicted such as share prices (Wooldridge 2001).

<sup>15</sup> Autocorrelation or serial correlation is defined as the correlation of error terms with itself over a period of time (Wooldridge 2001).

presents the hypotheses development and models construction. This is followed by the conclusion.

## **4.2. The appropriate estimation for the relationship between executive pay, corporate governance and firm performance.**

This section reviews the key theoretical assumptions of the two major estimators that are applied by most of the previous literature; (1) the multiple regression model estimated by OLS; and (2) panel data analysis estimated by FE. The limitations of these models and their relationship to executive pay, corporate governance and performance is then discussed. Since it is argued that these two models represent a level of bias in explaining this relationship, the discussion is followed by a discussion of GMM estimation and its properties that remedy the drawbacks of the OLS and FE models.

### **4.2.1. Linear regression models estimated by OLS: Assumptions and violations**

The classical linear regression model is one of the most popular estimators used in the field of econometrics. While a single regression model is used to study the effect on one independent variable on the dependent variable, a multiple regression model includes more than one explanatory variable. That is, the dependent variable can be predicted by a set of independent variables. A simple equation for the linear model is written as follows:

$$Y = \alpha + \beta X + \varepsilon \quad (4-1)$$

Where  $Y$  is the dependent variable,  $\alpha$  describes the intercept,  $\beta$  is the coefficient of the estimate,  $X$  is the vector of independent variables being investigated and  $\varepsilon$  donates to the error term. In these types of model, we must distinguish between the actual values of vectors ( $\beta$ ) and the estimated ones ( $\hat{\beta}$ ). This is because the fitted line of the regressors cannot pass through all observations in the sample. Therefore, the popular approach that estimates unknown parameters in the linear regression model is the least square estimator or as it well known OLS. The aim of using the OLS estimator is to minimize the variance between the true and estimated values, which in statistical terms are called “the residuals”. These residuals can be defined as the difference

between actual observations and estimated values that are predicted to be fitted on the regression line (Koop, 2009).

#### **4.2.1.1 Assumptions of the linear regression model and OLS**

The linear regression model is based on certain assumptions that are summarized in the following propositions:

- **Linearity:** the model assumes that the relationship between the dependent variable and other explanatory variables takes a linear pattern (Greene, 2008). This relationship should be also correctly specified.
- **The absence of multicollinearity:** the model assumes that there is no correlation between the independent variables in the model (Greene, 2009; Poole and O'Farrell, 1971). This assumption, however is unlikely to be fully satisfied, especially if the number of independent variables is relatively high.
- **X's are fixed:** the model assumes that each observation of the independent variables has a specific value, which does not randomly change.
- **The error term's assumptions:** it is assumed that  $\varepsilon$  is a random variable which can be positive, negative or zero and the mean of this variable is zero. The error term of each independent variable is assumed to be normally distributed and it is independent of other error terms (zero serial correlation assumption). This leads to another assumption, which states that the variance of the error term is assumed to be constant (homoscedasticity assumption) (Koutsoyiannis, 2005).

#### **4.2.1.2. Linear regression models and OLS: a critical evaluation**

These assumptions are not necessarily all satisfied in one empirical examination. Econometricians tend to solve for the absence of one or more of these theoretical assumptions. However, the violations of these assumptions may lead to biased results, which requires a thorough consideration of the data and the phenomena being investigated. Therefore, based on the linear regression model measured by the classical OLS estimator and its postulates, it is suspected that the majority of previous studies in the field of executive pay overlook the complexity of the relationship

between managerial compensation and performance. This realization provides several justifications for not using the OLS model in this research.

*i. Time effect*

One explicit limitation of the OLS approach used in previous executive pay research is its ignorance of the effect of time on the relationship between executive compensation and firm performance. It is believed that the time effect is crucial when considering this relationship. This is because firms tend to tie executives into long-term compensation contracts that require more than three years of investigation to be confident of a thorough analysis of executive's behavior. Because we need to investigate time variance in our sample, this will violate the efficiency of employing OLS on this thesis's data. However, one can say that this problem can be solved by using a Pooled OLS (POLS) estimator, which may address this dysfunction of the classical OLS model, but, there are still other limitations that motivate not employing this approach.

*ii. Endogeneity*

One of the main challenges that face researchers in econometric analysis is the problem of endogeneity. Endogeneity is defined as the reverse causality between the dependent variable and one of the independent variables (Wooldridge, 2001). The best example of endogeneity is the wage-productivity relationship; wages can increase the outputs of workers and it is possible that total production has a positive effect on workers' wages. In the context of this thesis, there are two possible explanations of the compensation-performance relationship which might reflect endogeneity; first, according to the agency framework, executive compensation may enhance firm performance. That is, firms that pay their executives more than other firms are expected to show improved performance. Second, there is a possibility of inverse causality in this relationship. It is very likely that high performing firms, in terms of profitability and stock market return, tend to either attract talented managers by paying them in much more attractive way, or the fact that this can be a form of prestige for large businesses. The presence of endogeneity in the previous two explanations can lead to biased results if we employ the OLS approach (Wintoki *et al.* 2012). There are three sources of endogeneity in econometric models; omitted variables, measurement errors and simultaneity.

**a. Omitted variables**

In any regression model, there is a possibility that not all influential variables are included in the model. This can be attributed to the difficulty of measuring these variables (e.g. ambition, talent and power), or to the unavailability of a specific variable's data in the data under investigation. In this case, endogeneity occurs when the omitted variable is correlated with one of the independent variables and also affects the dependent variable. The presence of omitted variables causes some problems in the estimation results, which might be biased in their estimation because the explained effects of the explanatory variables will be either underestimated or overestimated. However, this error can be solved in some circumstances by using a proxy variable, which can lead to an inclusion of non-measurable or unavailable variables. For instance, if we need to include the effect of executive power on performance, we may include the number of years which an executive has served in the company or the number of positions that this executive has occupied in their current company (Fredrickson *et al.*, 1988; Voulgaris *et al.*, 2010).

**b. Measurement errors**

Errors can occur also in the way in which both dependent and independent variables are measured. Endogeneity does not appear in the case of the dependent variable's error, and it is considered as a variance which affects the error term. Errors in measuring independent variables can change the condition of these variables, transferring them from exogeneity to endogeneity. In some circumstances, a variable cannot be perfectly measured, especially for those variables which are associated with high volatility or noise, such as measuring securities' return in the stock market. Reliability is also another cause of errors in gauging explanatory variables; for example, in the case of measuring the income of a group of workers who live in countryside, it might be unreliable if we depend only on those people's data (Wooldridge, 2001).

**c. Simultaneity**

Simultaneity refers to the situation where more than one explanatory variable can be predicted by the dependent variable. There might also be an effect of this variable on the dependent variable and this is known as the simultaneity bias in econometric

terms (Plasmans, 2006). This is expected to occur in this thesis's analysis and hence it needs to be taken into consideration when selecting the appropriate analytic model. A good illustration of this form of endogeneity is the relationship between performance, executive pay and governance. If we treat performance as our dependent variable, while compensation and governance (i.e. board structure) are the explanatory variables, then, it would be expected first that both the executive pay and governance variables affect performance in either a positive or a negative way. Likewise, there is a strong probability that performance can determine both executive pay and governance practices. Another potential endogeneity in this research relates to the relationship between political connections and the level of executive pay. Political connection that is measured by the political contribution made by companies could have an influence of the level of executive pay. Alternatively, it could be that higher paid CEOs tend to have a political orientation, either for gaining power or as a reaction to prestige.

### *iii. Unobservable heterogeneity*

Unobservable heterogeneity or 'individual effects' refers to the situation where there are some factors that are not observed or included in the model. These unobserved factors might be correlated with the independent variables (Arellano, 2003). For instance, talent is a factor that is very difficult to measure. Talented executives may be paid more than others, and they may also affect performance in a positive way. That is, the unobserved factor (i.e. talent) is likely to be correlated with the observed factor (i.e. executive compensation) and affect the dependent variable (i.e. performance). Another illustration of the heterogeneity problem is related to corporate governance and its impact on the level of executive pay. If we treat board structure as our explanatory variable, which can predict executive pay, we might encounter unobserved heterogeneity problem. This may occur when an executives' ability and power have a strong effect on the board's resolutions in a way that can positively enhance executive pay.

Based on the above, the use of the OLS model is deemed to be inappropriate for this study because of the likelihood of it introducing unacceptable levels of error into the findings and conclusions based on these.

#### 4.2.2. Panel data models: assumptions and violations

The Panel data technique has become widely used by scholars in econometric field. This is attributed to it having several advantages which outweigh the use of OLS estimator. One of the main advantages of this approach is its flexibility in examining differences among individuals. This allows the researcher to observe behaviors across the random sample of the panel (Greene, 2008). Another advantage of using panel data analysis is that it decreases the bias of the estimation since it takes time variance into consideration when dealing with the data being investigated (Plasmans, 2006). By combining both time series and cross sectional techniques, panel data can also identify both short- and long-term behaviors, especially in the case of dynamic relationships. These models are also useful for mitigating some statistical problems such as (1) heterogeneity, by assuming that all individuals are heterogeneous and (2) multicollinearity, since the dependent variables are examined in two dimensions (i.e. individuals and time) which decreases the possibility of high correlations (*ibid.*)

To understand the fundamental assumptions of the panel data model, the basic formula of the model is illustrated as follows:

$$Y_{it} = \alpha_i + \beta X_{it} + \delta_i + \varepsilon_{it} \quad (i = 1, \dots, N, \quad \tau = 1, \dots, T) \quad (4-2)$$

Where  $\delta_i$  refers to heterogeneity or individual effect, and it includes a constant term for a group of variables. These variables might be observed or unobserved but they are also considered to be constant over the time  $t$ . By emphasizing  $\delta_i$  we can illustrate the main assumptions of the model based on the identification of  $\delta_i$ . These assumptions also explain how the panel data technique is structured and classified into three basic models (Greene, 2008):

- **The Pooled OLS:** this model can be used efficiently if individual effect  $\delta_i$  is observed and constant for all individuals over time. However, this is a strict assumption that may not be valid in any large set of data.
- **The Random effect model (RE):** this model is appropriate if  $\delta_i$  includes unobserved factors, and they are assumed to be uncorrelated with other independent variables. The model hence will be formulated as:

$$Y_{it} = \alpha_i + \beta X_{it} + \pi_i + \varepsilon_{it} \quad (4-3)$$

Where  $\pi_i$  is assigned for a group-specific random element. The random effect model is rarely employed in executive compensation research and hence it will not be the focus of this discussion.

- **The Fixed effect model (FE):** this is the most popular model employed by researchers in executive compensation research. It is based on the assumption that  $\delta_i$  contains unobservable factors that are correlated with the explanatory variables. In this case, the model is formulated as:

$$Y_{it} = \alpha_i + \beta X_{it} + \eta_i + \varepsilon_{it} \quad (4-4)$$

Where  $\eta_i$  is assigned for all unobserved factors. The key difference between random and fixed effects is whether or not the unobserved firm-specific effect is correlated with the parameters in the model.

#### 4.2.2.1. The Fixed effect model: A critical evaluation

The fixed effect model is based on three classical assumptions (Wooldridge, 2001). These are:

- **Strict exogeneity:** the observed independent variables are assumed to be uncorrelated with the error term in each period of time. This assumption is significant for model consistency. Since we expect that our variables will not be fully exogenous, this is sufficient reason for not employing this model in our analysis.
- **Homoscedasticity:** for simplifying mathematical calculation, it is assumed that all covariates have a finite variance over the period of observation (i.e. no heteroskedasticity).
- **Zero serial correlation:** each error term is assumed to be uncorrelated with itself in either a cross sectional or time series matrix.

Since unobserved heterogeneity has been identified as one of the problems that is associated with the OLS regression model, the FE model may offer the solution for

this statistical problem (Wintoki *et al.*, 2012). However, it also may not be appropriate for this thesis due to the other limitations raised e.g. the dynamic nature of executive compensation.

#### 4.2.2.2. The dynamic nature of executive pay

Executive compensation contracts generally include fixed elements such as cash salary and performance linked packages which include both short-term performance plans such as annual bonuses, and long-term performance-based compensation such as share options and LTIPs. According to agency theory, the aim of structuring the pay of senior managers in various ways is to reach the required alignment between managers and shareholders' interests (Jensen and Meckling, 1976). The overwhelming emphasis of prior research has been to examine whether performance can determine executive pay, employing different criteria and measurements. These types of gauging performance are based mainly on market valuation and accounting based measures, which will be analysed later in more detail in the variables selection section in this chapter.

Most of the previous empirical works depend fundamentally on the following equation to examine the pay-performance relationship (Doucouliagos *et al.*, 2012):

$$\text{Ln(PAY)}_{it} = \alpha_0 + \beta_{\chi}(\text{PERFORMANCE})_{it} + \gamma_z Z_{it} + \varepsilon_{it} \quad (4-5)$$

While  $Z_{it}$  includes other control variables that affect executive pay, such as board structure, tenure, and age. This model ignores a number of dynamic features of executive pay; according to the agency framework, the coefficient of the performance variable should be greater than zero in order to say that incentive rewards are positively affected by performance. If  $\beta$  (performance) equals zero, which refers to the absence of a pay-performance association, this indicates that there are actually other factors which are influenced by managerial incentives that are stronger than firm value, such as sales revenue. In other words, executive pay may contribute to increased firm size instead of maximising shareholders' wealth (Doucouliagos *et al.*, 2012). Boschen and Smith (1995) elaborate that the presence of deferred payments in compensation contracts requires expanding the period that should be examined in the pay-performance relationship. From a similar perspective, Doucouliagos *et al.* (2012)

document that executive pay can be influenced by past performance, and hence they employ the lag of performance variables for one to three consecutive years ( $X_{it-n}$ ). This tends to occur more recently in a number of industries which tie executive pay with longer compensation contracts. For instance, British petroleum (BP), which is considered to be one of the leading British companies for gas and oil, states in its 2011 annual report that “*Remuneration is directly linked to strategy, strongly performance related and weighted heavily towards the long term*” (BP annual report 2011: 139). By doing this, it seems that executive pay will be affected accordingly and in no doubt by past performance. The presence of long-term incentives in compensation contracts presents one source of dynamics in executive pay. That is, current pay can be predicted by past performance.

Another source of dynamics in executive pay is related to the notion that the criteria for setting current pay is likely to be influenced by the preceding years’ pay. This implies that a remuneration committee will look first at the previous year when setting the current year’s pay, which will in all likelihood be greater than the past compensation level (Ezzamel and Watson, 2002; Doucouliagos *et al.*, 2012). Additionally, managerial pay can also be affected by internal and external factors rather than performance. Comparability between board members is assumed to be the internal factor that influences committee members when determining executive pay, Ezzamel and Watson (2002: 227) comment on their empirical findings by stating that:

*“results suggest that members of remuneration committees in the UK tend to determine CEO pay awards on the basis of: (1) their own pay levels; (2) the percentage change (typically increase) in their own pay awards; and (3) an element which attempts to maintain parity with comparable CEOs in other firms”*

Accordingly, executive compensation can also be determined by external conditions. It is demonstrated theoretically and empirically that the labour market is considered to be one of the external factors which transforms the way in which executive pay can be set (Ezzamel and Watson, 2002). Competition and searching for talent in the executive labour market is a strong proxy for the level of pay among corporations. It is possible that large firms tend to attract talented executives by offering them higher compensation, while those in small businesses tend to start with a lower level of pay which is gradually increased, but at a faster rate than it would be in a large firm. This

creates the possibility for convergence in executive pay between rival firms (Doucouliagos *et al.*, 2012). The above dynamics of executive pay are seldom examined in the literature using a model which can take into account all of these dynamics. Hence, by using OLS and FE, prior literature may either underestimate or overestimate the reality of the pay-performance association.

One of the main objectives of this thesis is to examine the effect of corporate governance on executive pay; there is also a possibility of a dynamic endogeneity in the triangle which consists of pay, performance and governance association. In their study, Wintoki *et al.* (2012) explore this relationship by examining how board structure can be affected by past performance. They argue that prior work ignores the fact that the governance-performance association is very likely to be dynamically endogenous. This makes the use of OLS and FE models inappropriate for investigating this relationship. By employing GMM estimator, they manage to mitigate the unobserved heterogeneity problem and control for the dynamic endogeneity. Unlike previous findings, which document a negative association between board structure and firm performance, this study find no significant evidence of any relationship. In a similar context, Doucouliagos *et al.* (2012) employ GMM estimation and find no evidence of a relationship between board structure and executive pay. These recent results may be attributed to the shifting from the popular to least popular estimators, revealing additional interesting findings in executive pay research.

#### **4.2.3. Dynamic Panel Data: The Generalised Method of Moments (GMM)**

GMM has become an attractive estimator for econometricians and researchers. This is attributed to its flexibility in solving a number of statistical problems which appear in other traditional estimations. As presented above, the pay-performance relationship has three main features which may not be investigated properly with the classical OLS and FE models. These are, endogeneity, unobserved heterogeneity and the dynamic nature of executive compensation on the one hand (i.e. past pay effect, rival firms and convergence) and dynamics in executive pay and performance on the other (i.e. the effect of past performance on current pay). Taken together, it is assumed that

the GMM model accommodates for all of these characteristics, which support employing it for this research dataset.

There are a number of advantages in employing the GMM estimator (Plasmans, 2006). *First*, it avoids the bias which occurs as a result of specification errors in the sample distribution. *Second*, it incorporates most of other estimators' properties. *Third*, the GMM estimator allows for heteroskedasticity and autocorrelation, which are assumed not existed in the OLS and FE models<sup>16</sup>. *Fourth*, it solves for unobserved heterogeneity, which is more likely to be exist in this research analysis, whereas GMM estimation is appropriate if the independent variables are not strongly exogenous. Therefore, the GMM estimation may alleviate many statistical problems that affect the results in executive pay research. OLS does not offer consistent estimation where there is possible endogeneity and unobserved heterogeneity. Likewise, the FE model may solve for unobserved heterogeneity, but it does not deal properly with endogeneity and the dynamic nature of executive pay and performance. Moreover, it is expected that our sample data will show either heteroskedasticity or a serial correlation pattern since we intend to observe a set of variables and lagged variables over a period of time. Wooldridge (2001) suggests that the GMM method is better at taking these two problems into account.

GMM estimation was developed by Arellano-Bond (1991), Arellano-Bover (1995) and Blundell-Bond (1998). This approach has become popular in economic research especially in situations where the number of observations is extremely high and the time period is relatively low (Roodman, 2006). As a remedy for individual effects (i.e. heterogeneity), several statistical models such as fixed- and random-effect approaches tend to include lagged variables in the model equation, and this represents the way in which these models may treat the dynamic nature of any statistical relationship that is being investigated. These lagged variables are treated as the instruments that are included in these types of models; however, it is known that the FE and RE models are biased and inconsistent in their use of lagged dependent variables (Greene, 2008). This is because of the expected high correlation between lagged dependent variables and the error term. The following formula presents the employment of lagged variables in FE model:

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<sup>16</sup> It should be noted that it is possible to remedy for heteroskedasticity in OLS and FE using a robust standard error approach which accounts for this statistical problem.

$$Y_{it} = \alpha_0 + Y_{(it-1)} + \beta X_{it} + \beta Z_{it} + \mu_i + \varepsilon_{it} \quad (4-6)$$

Where  $Y_{(it-1)}$  represents the lagged dependent variable. However, this lagged variable is still correlated with the error term, which may not validate the use of instruments in the model equation. To solve for this problem, the use of the instrumental variable in GMM estimation can be more efficient when dealing with the dynamic endogeneity of the selected variables. This is done by taking the first difference of lagged variables, which is considered to be one of the popular GMM estimators that are used by econometricians. This is known as the First Difference GMM estimator (DIF-GMM). The more developed estimators of the GMM model are the Level GMM (LEV-GMM) and the system GMM (SYS-GMM) which use more instruments than DIF-GMM. These modern estimators are deemed the most efficient models in the data generating process (Hayakawa, 2007). Roodman (2006) summarizes the assumptions that differentiate these GMM estimators from other models in modern econometrics with respect to data generating process:

- GMM allows for dynamic relationships, which implies that it accommodates for the historical effect of the dependent variable.
- The independent variables may not be exogenous.
- Instruments are assumed to be exogenous. This is a key assumption that should be verified in order to validate the use of instruments in the GMM model (Roodman, 2006)
- The estimation allows for fixed individual effects.
- The error term under GMM estimation may show some patterns of heteroskedasticity and autocorrelation.
- The error terms are assumed to be uncorrelated across individuals.
- It is assumed that the instruments are internal and usually take the form of lags of the selected variables. However, external instruments are allowed to be included in GMM estimators.
- Time period (T) is usually small, while the number of individuals (N) is large.

However, the GMM may suffer from some potential drawbacks that should be considered when applying it. One of these problems is the weak instruments case; instruments should be (1) uncorrelated with the error term, and it should be (2) fully

correlated with the explanatory variables. The weak instrument problem can be detected if the instruments are weakly correlated with the included endogenous variables. Correspondingly, the Hansen test is proposed to detect this problem in a way that could help to improve the use of instruments in such model. Another problem that is associated with the IV approach in GMM estimation is the problem of “too many instruments” that could overfit the endogenous variables, resulting in faulty inference. Roodman (2006:13) suggests two ways to solve for this problem; restricting the lag ranges used in generating these instrument sets, or collapsing them. GMM estimation could also suffer from serial correlation problem; more specifically, second order serial correlation. The Arellano–Bond test is one of the best tests that can detect this problem and make the appropriate adjustment to solve for these types of diagnoses. It seems that GMM, like other estimators has, some problems; but the factor that could make it more efficient is that it is easy to detect these problems and solve them, especially with advanced statistical software, which helps to avoid most statistical problems in modern econometrics.

#### 4.2.3.1. First difference GMM estimator (DIF-GMM)

First difference approach is based mainly on the IV application that includes the use of lagged dependent variables in the model equation. This is applied by taking the first difference of the lagged dependent variables ( $Y_{it-1} - Y_{it-2}$ ) (Anderson and Hisao, 1982). If the lagged variables are available for two or more periods, this validates the use of instruments in the model equation in the first difference estimation (Arellano and Bond, 1991). However, it is still expected that the lagged dependent variable suffers from the orthogonality that occurs with the error term  $\varepsilon_{it}$ . Thus, the use of  $\sum_S \Delta y_{it-S}$  is suggested here, which takes the differences of the variable over the whole period into account in order to remove this orthogonality between the lagged dependent variable and the error term (*ibid.*). By doing this, the DIF-GMM estimator may provide a solution for the unobserved heterogeneity by taking the first differences of both dependent and independent variables, resulting in the following formula:

$$\Delta Y_{it} = \Delta \alpha_0 + Y_i \sum_S \Delta y_{it-S} + \beta \Delta \dot{X}_{it} + \Delta \varepsilon_{it} \quad (S = 1, 2, \dots, S) \quad (4-6)$$

However, the DIF-GMM approach suffers from several drawbacks that are identified in the literature. Blundell and Bond (1998) point out that the first difference estimator suffers from less informative instruments in some levels of the test. This occurs in two situations; (1) the stationary increase in the value of lagged dependent variable and (2) the increase in the variance of the individual fixed effect. These two cases weaken the use of instruments in the model equation, resulting in an inefficiency that may reduce the validity of the DIF-GMM approach when applying it in some statistical tests. As a consequence, Arellano and Bover (1995) develop the first differences approach by proposing the addition of extra moment conditions, but this time not in the form of first differences, instead, these moments contain information in the levels of the equation. This is known as the LEV-GMM (for additional information see Arellano-Bond, 1991). This was followed by another improvement in the GMM estimation to introduce the most advanced version of these types of estimators; the SYS-GMM.

#### 4.2.3.2. System GMM estimator (SYS-GMM)

The SYS-GMM is considered to be the least biased estimator among the proposed GMM models. Hayakawa (2007) demonstrates theoretically that the DIF-GMM and the LEV-GMM are biased in opposite directions. According to his analysis the DIF-GMM shows a downward bias pattern, while the LEV-GMM shows an upward bias pattern. Blundell and Bond (1998) improve the use of IV in both first differences and levels GMM, presenting the SYS-GMM that combines both estimators. The system model seems able to eliminate some of the errors that occur in the DIF-GMM and the LEV-GMM. This approach aggregates both lagged differenced and lagged levels of instruments in a “stacked” system (Roodman 2006: 29). Hence the equation that represents the SYS-GMM model is written as:

$$\begin{bmatrix} Y_{it} \\ \Delta Y_{it} \end{bmatrix} = \alpha_i + Y \begin{bmatrix} Y_{it-S} \\ \Delta Y_{it-S} \end{bmatrix} + \beta_i \begin{bmatrix} X_{it} \\ \Delta X_{it} \end{bmatrix} + \varepsilon_{it} \quad (S = 1, 2, \dots, S) \quad (4-7)$$

In order to ensure that used instruments are valid, Roodman (2006) suggests applying two tests. (1) The Hansen (1982) *J* test, which is used to verify that the included instruments are exogenous, and (2) the Arellano-Bond test, which checks for the second order autocorrelation of the error term, which is done by testing the residuals from the first difference equation (Capezio *et al.*, 2011). Since the SYS-GMM is

believed to be one of the least biased estimators among other regression models, it will be employed in this research, especially with the dynamic dataset of executive pay and performance.

### **4.3. Data and variable selection**

The data for this research is gathered from several sources; executive pay, governance and political contribution data are collected from the Manifest database. Performance data is extracted from DataStream. Some of firm characteristics data is gathered from the Fame database. The sample covers UK listed companies from different industries, excluding financial and insurance firms. The initial sample was 1018 firms, but the sample size has been reduced to include 777 firms due to significant amounts of missing data in some firms, especially in executive pay data, which is essential for obtaining final results. The sample also covers CEO data in terms of remuneration and other personal characteristics. The total number of observations in the sample is 5916, but this is a different number from observations for each investigation. This is due to several factors; one of these is that the panel data is unbalanced, which means that not all years and companies are covered in each model. For selection that is not biased towards successful firms, the sample includes all companies, regardless of whether these companies at one point of time during the sample period are acquired by another company or not existed anymore. If only successful firms that are recorded for the whole sample period are selected, then it would be expected that the results would be relevant to successful firms, which would introduce “survivorship bias” into the balanced panel data (Wooldridge, 2001). Another influential factor that reduces the number of observations is the use of lagged variables in SYS-GMM.

#### **4.3.1. Measuring executive compensation**

Since 2002, the Directors' Remuneration Report Regulations in the UK requires each company to provide detailed information about each director's pay. Even though there are differences in executive pay across firms and industries, compensation packages generally consist of six main components: a base salary, an annual bonus, LTIPs, share options, a pension contribution and other benefits (Murphy, 1998). In this

analysis, the variables that are employed include (1) salary; (2) bonus; (3) cash compensation, (4) long-term compensation and (5) total compensation.

#### **4.3.1.1. Salary**

The CEO's base salary is measured by the cash salary that is annually given to them and disclosed in the annual report. An executive's base salary may provide an insight into their talent, power and experience. Because this variable is not an incentive variable, it is expected that its increase will not enhance performance; instead, the use of this variable is to examine other associations, such as the link between higher salaries and poor performance or governance. Although there are a great deal of researchers (see, for example, Core *et al.*, 1999; Bizjak *et al.*, 1993; Ozkan, 2009) who combine both salary and bonus into one variable, which tends to be named as cash compensation, I prefer to use the two variables separately for two reasons; (1) salary is a fixed element of compensation which may not be affected by executive performance, rather, it may depend on other factors such as firm size, executive experience and reputation. Bonus on the other hand is a performance-based element which is expected to be correlated with performance, hence, mixing the two variables may generate ambiguous results, and (2) The use of salary as a separate variable may reveal significant results, especially in the case of using lagged variables. Banker *et al.* (2013) find that salary and bonus run in opposite directions when examining in relation to past performance. This indicates that the use of cash compensation (salary + bonus) may result in biased findings.

#### **4.3.1.2. Cash Bonus**

A cash bonus is one the most popular type of incentive for short-term performance. It is typically a percentage of the base salary that is paid annually to executives according to firm performance and incentive criteria. In this research, cash bonus is measured by the annual cash payment that is reported in the annual reports each fiscal year under the cash bonus plans. This research excludes deferred bonus because it is related to long-term performance and there is a shortage of data related to this variable and its valuation.

#### **4.3.1.3. Cash compensation**

Cash compensation is measured by the sum of cash salary and cash bonus. Although it is mentioned above that the results of this variable could be biased in terms of the linkage with firm performance, this variable is included in this analysis for two reasons; first, to demonstrate that the results from separate variables (i.e. salary and bonus) are different from those that come from the combined variable. Second, in some situations, performance is not relative to findings, such as in the case of corporate governance and political connections. Hence, the combined variable may refer to only short-term payment that is not necessarily linked with performance.

#### **4.3.1.4. Long-term compensation**

Long-term compensation refers to those emoluments that take more than one year to be acquired. It is generally these forms of pay that are offered as shares and they are usually restricted by performance conditions that should be fulfilled in order to benefit from them. The most common forms of these long-term payments in UK companies are share options and LTIPs. This variable is measured by the sum of options and LTIPs.

There are several implications with regard to the valuation of both forms of pay; this is due to the fact that valuation could reflect one of two perspectives. First, calculating the value of options and LTIPs from the company's view, meaning that the valuation results indicate the cost of the options and LTIPs to the firm. Second, calculating the value of options and LTIPs from the top managers' view, meaning that the valuation results indicate the value of options and LTIPs to CEOs. Since this research concerns the effect of executive compensation on firm performance, the valuation will be limited to the first perspective (i.e. the cost of these elements to the firm). For the second perspective of evaluation see appendix 1.

*Share options* refer to the contracts that provide the right for executives to buy shares in the future at a fixed price that is pre-specified in the contract. The vast majority of the literature evaluates share options by using the Black-Scholes formula (Murphy, 1998; Chen *et al.*, 2006; Ozkan, 2011; Banker *et al.*, 2013). The formula basically is written as:

$$\text{Option value} = Pe^{-\ln(1+d)T} N(Z) - Xe^{-\ln(1+r)T} N(Z - \sigma\sqrt{T})$$

Where P is stock price in the grant date, X is the exercise price, T is shares' expiration date, d is the annual dividend yield,  $\sigma$  is the annual stock price volatility, r is the risk free rate, N () is the cumulative normal distribution function and Z is calculated as:

$$Z = \frac{\ln\left(\frac{P}{X}\right) + [\ln(1+r) - (1+d) + \sigma^2/2]T}{\sigma\sqrt{T}}$$

To be consistent with prior literature, the value of stock options is calculated using the Black-Scholes formula. Stock prices on the grant date and the dividend yield are gathered from DataStream. The exercise prices and expiration date are collected from Manifest. The risk free rate is basically a three-month treasury bill and it is obtained from DataStream from 2000-2012. Following Conyon and Murphy (2002), stock volatility is measured by the standard deviation of monthly stock returns over the prior 48 months. To reach the cost of options to the company, the output that is generated from the Black-Scholes formula is multiplied by the number of share options the CEO is given.

**Long-term incentive plans** are those grants of cash, or usually shares, that are provided to executive officers (Monks and Minow, 2011). These plans are conditional and tend to be restricted to firm performance. Performance conditions that are applied to UK companies are usually total shareholder returns and these are compared with peer group of companies in the same index. The valuation of LTIPs seems to be complicated because of its attachment to performance conditions and vesting criteria that generally take three years to be vested. There are two popular methods in the literature to evaluate LTIPs; *first*, Buck *et al.* (2003) evaluate LTIPs by estimating performance conditions that are related to these plans, then this estimation is compared with the peer group performance that is specified in the plan. *Second*, Westphal and Zajac, (1994) use the following method in the valuation of LTIPs:

$$\text{LTIPs Value} = \text{Price} \times \text{Shares} \times \text{Target} \times [1 / (r + p + f)^T]$$

Where Price is the share price on the grant date, Shares is the number of shares which are granted under LTIP scheme, Target is a vesting level that reflects the proportion of shares granted, r is assigned for the risk free rate, p is a long-term average equity

premium,  $f$  is forfeiture risk (3%) and  $T$  is the performance period for shares to be vested. The second method is used in many executive compensation consulting firms such as Manifest and Towers Perrin. This research follows Ozkan (2009) in the valuation of LTIPs, they are measured by the face value of shares that are granted under this type of incentive plans. This is due to the unavailability of performance conditions and vesting level data. This method of measuring LTIPs is not unreasonable since the main focus of this research is to determine the cost of these elements to the company, assuming that performance conditions will be achieved in the future.

#### **4.3.1.5. Total compensation**

Total compensation is the sum of all compensation components including salary, bonus, share options, LTIPs and other payment types such as benefits in kind. For skewness reasons, all compensation variables are converted to the natural logarithm form to ensure that the data is normally distributed.

#### **4.3.2. Measuring firm performance**

Prior studies tend to evaluate firm performance by employing two sets of measures that are relative to executive pay. The first strand of these measures is related to accounting earnings. The literature employs several accounting indicators which show how executive pay is associated with accounting earnings. These include return on asset (ROA), return on equity (ROE), return on capital employed (ROCE) and earning per share (EPS)<sup>17</sup> (Lambert & Larcker, 1987; Mehran, 1995; Core *et al.*, 1999; Lin *et al.*, 2011). It is however, possible that accounting figures can be manipulated by managers, which may result in increased executive pay without real performance improvement (Abdel-khalik *et al.*, 1987). Accordingly, Lambert & Larcker (1987) suggest employing two sets of measurements; accounting-based and market-based indicators. Consequently, most scholars prefer evaluating performance from both groups of measures. Usually, the market-based performance measurements

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<sup>17</sup> These are the most popular accounting-based measures that are employed in the literature. However, There are other accounting indicators in the context of executive pay research. Examples of these measures are Earnings on Invested Capital (EOIC), Return on Investment (ROI), Net Present Value (NPV) and the Internal Rate of Return (IRR) (Madinios *et al.*, 2006).

encompass total shareholder return (TSR) and Tobin's Q. In this study, the selected performance measures include ROE, EPS, TSR and Tobin's Q.

#### 4.3.2.1. ROE

Return on equity is a key accounting measure that provides insight into the effectiveness of management in using investor's money. The ratio simply measures the amount of Pounds sterling that is generated from investing shareholders' equity. Since this research is mainly based on agency theory, it measures performance by employing ratios that are closely related to shareholders' interest. The selection of ROE as one of the accounting performance measures is in line with Lambert & Larcker (1987), Lin *et al.* (2011) and Banker *et al.* (2013). The ratio of ROE is collected from DataStream and it is measured by:

$$ROE = \frac{\text{Net income before common share dividends} - \text{preferred dividends}}{\text{last year's common equity}} * 100$$

#### 4.3.2.2. EPS

The Earnings' per share indicator is an accounting measure that is used by corporations to evaluate executive performance in the short term. It is usually linked with annual cash bonuses that are paid to executive directors<sup>18</sup>. Hence, it is expected that this variable will be correlated with the bonus variable. At a first glance, EPS tells investors how profitable the business is. This thesis uses EPS as an accounting indicator for performance following Sloan (1993), Lin *et al.* (2011) and Gregg *et al.* (2012). EPS is simply as:

$$EPS = \frac{\text{Net income} - \text{preferred dividends}}{\text{Weighted average common shares outstanding}}$$

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<sup>18</sup> In the UK, some companies link the growth of EPS with equity-based compensation and this is different to the yearly EPS that is disclosed in annual reports (Ozkan, 2009).

#### 4.3.2.3. TSR

Total shareholders return is one of the most popular measures that is employed by researchers to evaluate firm performance from the perspective of shareholders. This market-based indicator is used to measure the total return that is gained by shareholders due to the performance of the firm's stock in the market. The vast majority of prior studies use this variable to measure firm performance in more sensitive way that provides sufficient vision about the effectiveness of management in enhancing firm value. A number of researchers believe that measuring performance should not be confined to accounting figures (e.g. Jensen and Ruback, 1983; Abdelkhalik *et al.*, 1987). For this reason, this variable is selected in addition to the above accounting-based measures (i.e. ROE and EPS) to increase the robustness of results and enhance the explanations that can be offered. Moreover, the selection of this variable is in line with the majority of previous executive compensation research (Murphy, 1985; Lambert and Larcker, 1987; Core *et al.*, 1999; Buck *et al.*, 2003; Bebchuk & Grinstein, 2005; Cheng and Lndjejikian, 2009; Goh and Gupta, 2010; Conyon and He, 2012; Banker *et al.*, 2013; Ozkan, 2011; Gregg *et al.*, 2012). TSR is calculated as:

$$TSR = \frac{(Share\ price_{end} - share\ price_{beginning} + Dividends)}{share\ price_{beginning}}$$

Where Share price<sub>end</sub> is the share price at the end of the year, Share price<sub>beginning</sub> is the share price at the beginning of the year and Dividends is the total cash payment that is distributed to shareholders during or at the end of the year.

#### 4.3.2.4. Tobin's Q

The ratio of Tobin's Q is a significant market-based indicator that was developed by Tobin (1969). It reflects the value of the firm in the market in comparison to its assets' replacement cost. This implies that this measure provides an insight for investors into whether the share of a company is undervalued or overvalued; a low Tobin's Q (<1) indicates that the firm's stock is undervalued, while a higher Tobin's Q (>1) indicates that the firm's stock is overvalued. With respect to Tobin's Q

measuring criteria, the literature is varied in the valuation methods that are applied by researchers in this field. Yermack (1996) and Mehran (1999) for example calculate this ratio by dividing the market value of assets by the replacement cost of assets. Lin *et al.* (2011) measures the Q ratio by dividing (face value of debt + shareholders' market value) by face value of assets. In their UK study, Leech and Leahy (1991) employ the valuation ratio that is considered to be an approximate Q ratio. This is calculated as:

$$VAL = \frac{\text{Market value of firm at its accounting year end}}{\text{Book value of equity at its accounting year end}}$$

Short and Keasey (1999) believe that the valuation ratio could be more informative regarding management's ability to generate returns from assets, and hence they suggest this ratio could be used as a UK approximation to Tobin's Q. I follow these two UK studies in their use of Tobin's Q calculation. More specifically, the above calculation is reached by gathering some accounting figures and the formula then becomes:

$$\text{Tobin's Q} = \frac{\text{Market capitlisation+long term debt}}{\text{Total assets-current liabilities}}$$

All performance variables are converted to the logarithm form to reduce their skewness. In the case of ROE and TSR, the (log+1) method is used in order to avoid losing negative values for these two measures.

### **4.3.3. Measuring corporate governance**

Corporate governance can be measured by several indicators and these depend on the researchers' aim. Executive pay is considered to be one of the tools that can be used to evaluate the effectiveness of applied governance practices. However, since the main interest of this thesis is examining executive pay in conjunction with corporate governance, this research uses other tools that assess governance practices. There are two main groups of variables which are employed in the literature for measuring corporate governance. *First*, ownership structure, which tends to include variables such as the percentage of directors' ownership, blockholders' ownership and institutional investors' ownership (Mehran, 1995; Core *et al.*, 1999; Lin *et al.*, 2011;

Ozkan, 2011; Conyon and He, 2012). *Second*, the board of directors' characteristics, which usually include board size and board structure (i.e. board independence) (Gregg *et al.*, 2012). In this research, I employ ownership variables, board characteristics, and CEOs' duality and tenure.

#### **4.3.3.1. Ownership structure**

##### **4.3.3.1.1. CEOs' ownership**

It is the norm that the directors (executives and non-executives) own common shares in the company where they serve. In these circumstances, some may believe that greater ownership by directors leads to greater entrenchment in the corporation. Others may believe that directors' ownership is one of the agency frameworks that helps to achieve the required alignment between owners and management. The selection of this variable is limited to CEOs ownership since they are the main interest of this research because it aims to investigate whether or not there is a relationship between CEOs ownership and the level of their pay. The variable is delivered as a percentage and measured by dividing the number of shares that are owned by CEOs by the number of firm's outstanding shares. The selection of the variable is in line with Mehran (1995), Core *et al.* (1999) and Ozkan (2011).

##### **4.3.3.1.2. Institutional investors' ownership**

The presence of institutional owners in the ownership structure of the company is believed to have a key influence on governance practices by improving them in terms of the level and the structure of executive pay (Maher and Anderson, 1999; Ozkan, 2011). However, an increase in the proportion that is owned by institutional investors also has a negative effect on other shareholders because of the powerful hand of investors which might influence the independence in boards' resolutions (Johnson and Greening, 1999). For this reason, and to be consistent with prior research, this variable is assigned as one of the corporate governance indicators. With regard to measuring this variable; similar to the previous variable, institutional investors ownership is measured by the percentage of common shares owned by this group and it is limited to those institutional investors who own more than 5% of the company's common shares. This variable is expressed in the log form so as to be normally distributed. I also

derive another variable that is related to this, which is the number of institutional shareholders who own more than 5% of the company's common shares. The selection of this variable is to identify whether or not the magnitude of these shareholders matters in affecting CEO pay. This variable is also expressed in the log form so as to be normally distributed.

#### **4.3.3.1.3. Individual blockholders ownership**

Similar to the previous variable, individual blockholders are defined as individuals who own more than 5% of the company's common shares. The significance of these shareholders is attributed to their voting rights and their ability to intervene in some the resolutions that are taken by the board of directors. In some circumstances, these shareholders can attend AGMs, and hence they have a key impact on executive pay if they have an active action for or against such pay contracts. Blockholders could also, however, be outside directors, which may lead to the possibility of managerial alliances with these 5% shareholders through potential and expected relationships. This variable is also measured by the percentage (above 5%) that is owned by individual shareholders. Also, the number of these shareholders in a company is included in variable selection for the same reason as mentioned above. The selection of these two variables follows Ozkan (2011).

#### **4.3.3.2. The board of director characteristics**

##### **4.3.3.2.1. Board size**

The literature reveals some heterogeneity among firms in terms of the size of the board of directors. This may be linked to the size of the business, which could be an essential factor that affects board's size. Also, industry type could influence this indicator; for example, Alliance Boots Plc. has 16 board members while BT group Plc. has only 9. The effect of board size on performance is broadly investigated in the literature, revealing mixed findings. Findings are still ambiguous in terms of its interpretation; the size of the board seems to have a non-monotonic nature. A relatively small board size seems to be sufficient to accomplish its role effectively, while a relatively large board size is seen as a mixture of different experiences. (Core *et al.*, 1999; Ferris *et al.*, 2003; Florackis & Ozkan, 2009; Bouwman, 2011; Conyon,

2011). This variable is simply measured by counting the number of all members serving in the board of directors. Generally, those members could be executive directors, non-executive directors or external directors. The selection of this variable is in line with the majority of corporate governance literature (see, among others; Conyon and Peck, 1998; Core *et al.*, 1999; Wintoki, 2012; Doucouliagos *et al.*, 2012). This variable is expressed in the log form so as to be normally distributed.

#### **4.3.3.2.2. Board structure**

Board structure is one of the key benchmarks that is employed by a great deal of corporate governance researchers. This can be seen as a way to show how the board is structured, and who serves on it. Governance regulations in the UK recommend that the board should be balanced between executive and non-executive directors (NEDs). This is simply because NEDs reflect the independence of the board. This variable is measured by the percentage of NEDs and is calculated as:

$$\text{Board structure} = \frac{\text{The number of NEDs}}{\text{board size}} * 100$$

This research follows the vast majority of corporate governance literature in the selection and measuring of this variable (see, among others Core *et al.*, 1999; Ferris *et al.*, 2003; Conyon and He, 2012; Bouwman, 2011). This variable is expressed in the log form so as to be normally distributed.

#### **4.3.3.3. Tenure**

The number of years that a CEO serves in a company could have two effects. It could reflect the experience of this manager and hence be seen as a positive side of this indicator. It is then reasonable to suggest a positive association between tenure and pay. However, the literature also shows that managerial tenure is merely another side of power that plays a key role in transforming executive pay (Fredrickson *et al.*, 1988; Voulgaris *et al.*, 2010). This variable is measured by the number of years for a CEO has served in the company and it is expressed in the log form.

#### 4.3.3.4. Duality

The duality of a CEO refers to the situation where a CEO is also the chairman of the board (Saibaba, 2013). Results in this area are mixed between supporters and opponents; Alexander *et al.* (1993) and Elsayed (2007) believe that the duality of CEOs can reduce the agency cost, since the chairman and the chief executive officer are the same person. Conversely, Fama and Jensen (1983), White and Ingrassia (1992) and Bliss (2011) argue that board independence is negatively affected in the case of CEO duality. Proponents of this view also advocate that offering the two roles to one director may increase the power of them in a way that could damage the system of corporate governance. Duality is a dummy variable, assigned a value of one for CEOs who are also chairmen and zero otherwise.

#### 4.3.4. Measuring political connection

Firm's political connections are identified as taking several forms in the literature. These include (1) the effect of the presence of ex-politicians in the board of directors on firm performance, or a member of the board become a politician<sup>19</sup> (Faccio, 2006; Faccio *et al.*, 2006 Faccio and Parsley, 2009), (2) the political contribution of the company that goes to any political institution or parties' campaigns (Roberts, 1990; Ansolabehere *et al.*, 2004; Goldman *et al.*, 2009). Political connection in this thesis is measured by the amount of political contribution that is provided by corporations to any political party. The use of this variable is used to investigate whether political contributions made by company members (i.e. CEOs and top officers) have any effect on the level and the structure of CEO pay. Political connection variables also include the number of political parties who receive this contribution from a firm, and dummy variable for companies that support more than one political party in the same fiscal year. This is to show the impact of supporting multiple political parties on CEO pay because this may reflect the network of top managers' political ties. In order to examine the difference between politically connected firms and non-politically connected firms in terms of its CEO pay, a political dummy variable is assigned a value of one for firms that provide a political contribution and zero otherwise. The

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<sup>19</sup> A group of studies has also investigated situations where a member of the board has a personal relationship with or is a relative of a politician (see: Fisman, 2001; Morck *et al.*, 2000)

selection of these variables follows Aslan and Grinstein (2012), Cooper *et al.* (2010) and Aggarwal *et al.* (2011).

Political connection in this research also concerns more specific variables such as the political contribution that is made to one or more of the three leading political parties in the UK; these are the Conservative Party, the Labour Party and Liberal Democrat Party (three dummy variables are generated for these parties). This is to investigate whether supporting more powerful political parties will lead to increase in CEO pay in firms that provide support to potential government.

#### **4.3.5. Control variables**

Following the vast majority of previous studies, there are several controls variables that are expected to affect executive compensation and firm performance. This group of variables include: (1) firm size, measured by a firm's total assets (Waddock and Graves, 1997; Capezio *et al.*, 2011; Gregg *et al.*, 2012), (2) firm risk, measured by the cumulative distribution function (CDF) of the variance of stock return (i.e. monthly return) (Aggarwal and Samwick, 1999b), (3) leverage ratio, measured by dividing long-term debt by total assets (Mehran, 1995), (4) assets turnover, measured by total sales divided by total assets, (5) company age measured by the number of years since incorporation, (6) industry dummies and (7) year dummies. In the analysis that tests the effect of governance and political connection on CEO pay, two control variables are also generated corresponding to CEO characteristics. These are CEO age and experience. It should be noted, however that in some investigations in this thesis, control variables might be increased to narrow the examination to being between only two variables. For instance, in order to specify whether there is a relationship between political connection and executive pay, we need to control for governance variables (i.e. board size and board structure). This is to reach unbiased results with respect to this specific relationship. Likewise, in the case of the relationship between corporate governance and CEO pay, I control for performance measurements such as TSR and ROE, since they are expected to affect the level of CEO pay.

Table 4.1, Appendix 2 summarises the key variables of this thesis. It also includes the relative use of these variables in prior research.

## **4.4. Hypotheses development and model construction**

This research aims to answer three main questions with respect to CEO pay; first, does CEO pay contribute to enhanced firm performance? Second, what is the effect of corporate governance on CEO pay? Third, are politically connected CEOs offered higher compensation as a premium compared to their peers? These three questions are based on three theoretical perspectives that attempt to explain the conceptual framework of each relationship. These are Agency Theory, Managerial Power Theory and Resource Dependence Theory. This section discusses the main hypotheses underpinning each of these research questions and presents the models that are used to test them.

### **4.4.1. CEO pay and firm performance hypotheses**

Most prior literature which examines executive pay investigates whether or not it can be predicted by firm performance. The results obtained from previous research imply that there is indeed a relationship between firm performance and executive pay. Hence previous research concentrates on whether firm performance can determine executive pay or whether compensation is linked with performance. However, as discussed in the theoretical section, the Agency Theory aims to provide a solution that could minimize the gap between the interests of managers and those of shareholders. Therefore, agency theory assumes that if top managers are paid more incentives that are linked with firm performance, then, it would be expected that risk-averse managers act on behalf of shareholders by maximizing firm value. The introduction of a pay-performance framework was mainly to motivate top management to enhance corporate performance. Hence, executive pay contracts tend to range from short-term emoluments such as bonuses to long-term ones that are usually conditional on performance targets specified in advance. In the UK, these long-term plans include mostly options and LTIPs and they are generally linked with either TSR or the growth of EPS. Having said that, it seems that the main objective introducing the optimal contracting approach is to enhance firm performance through mixing short- and long-term compensation elements. This is to ensure that the short-term payments play a role in enhancing firm profit in the short term, while long-term payments are expected to enhance firm value in the longer term. For this reason, this research employs two

types of measures in terms of firm performance; accounting-based measures for short-term performance and market-based measures for long-term performance.

However, managerial power theory claims that those top officers situated in powerful positions can extract additional rents through the incentives framework that is provided by the agency framework. It is argued that CEOs, in reality, construct their own pay, and hence they may prefer to receive higher fixed payments (i.e. salary) or a higher proportion of compensation in the form of cash payments (i.e. bonuses). This notion extends previous propositions by indicating that paying higher cash compensation to CEOs, who are assumed to be risk-averse agents, may be associated with managerial complacency and entrenchment. Taking this into consideration, this scenario is likely to be associated with more powerful CEOs, meaning that when more power is exercised by CEOs this may reduce the incentive to work for shareholders, and lower the level of their performance. Thus, as a way to investigate issues that are related to managerial complacency, this study adds single measures such as salary and bonus, and the combined measure of cash compensation (i.e. the sum of salary and bonus) in order to detect the effect of these cash payments on both accounting- and market-measures of performance.

Based on the above argument, the following hypotheses shall be tested:

*H1: Short-term measures of performance are positively affected by short-term compensation.*

*H2: Long-term measures of performance are positively affected by long-term compensation.*

In order to track such effect of pay, lagged pay is used in all regression analyses that are related to this section. The model that tests the above hypotheses is constructed as follows:

Model (1)

$$\log(\text{Performanc})_{it} = \alpha_0 + \beta_y \log(\text{Performance})_{it-1} + \beta_x \ln(\text{CEO pay})_{it-1} + \gamma_z \text{Control} + \varepsilon_{it}$$

Where:

- Performance = firm performance measured by log EPS, log TSR, log ROE and TOBINS'Q.
- Performance<sub>(it-1)</sub> = the previous year performance.
- CEO pay<sub>(it-1)</sub> = the natural logarithm of lagged salary, lagged bonus, lagged cash compensation, lagged long-term compensation and lagged total compensation.
- Control = the natural logarithm of firm size, firm risk, company age, leverage and asset turnover.

#### **4.4.2. CEO pay and corporate governance hypotheses**

Corporate governance theories assume that executive compensation is a significant benchmark that could provide an insight into the quality of governance within a firm. The agency framework again provides managerial incentives that are linked with firm performance as a way to bind top managers to the collective objectives of the firm. In other words, executive compensation could be a good form of governance practice if it is effectively structured to be in line with what shareholders expect. Given the importance of executive compensation in the context of corporate governance theories, this research aims to investigate what other governance factors determine CEO pay, in either a positive or negative way. These factors include the board of director characteristics that include board size and board structure, and ownership structure that includes CEO ownership, institutional ownership and individual blockholders.

In theory, large boards, if well structured, could effectively minimize the possibilities of managerial alliances. This suggests that board size as an isolated indicator could not have a significant meaning in the context of governance evaluation because a large board that contains a high proportion of executive directors is considered to be a sign of weak governance. Likewise, a large board that contains a high proportion of non-executive directors is strongly recommended by governance regulations because it engenders good governance. Therefore, in relation to board structure, the important factor is not “how many” but “who”. Theoretically speaking, the presence of NEDs on the board is considered to be one of the signs of board independence, hence, it is expected that a higher number of NEDs on the board will be associated with relatively

lower levels of CEO pay, especially cash pay. Also, this indicator should play its role in tying executive directors efficiently into longer periods of good performance. Accordingly, it is expected that CEO equitable compensation will be an increasing function of the percentage of NEDs. This image of board structure and its influence on CEO pay is in line with the aim of agency theory and its framework objectives.

Managerial power theory on the other hand, tells another story; it is assumed that the power of CEOs plays a vital role in shaping the whole situation. The theory argues that top officers exercise their power on other directors in the board, influencing them to act in favor of CEOs rather than shareholders. It is also argued that directors who meet every day in the company build social relationships that motivate them to serve each other rather than being constrained by the boundaries of shareholders' expectations. There could be also a possibility of mutual interests between CEOs and NEDs since they could influence the voting criteria for re-election events that are related to the composition of the board. Having said that, those NEDs could serve CEOs in terms of influencing the process of CEO remuneration contracts, especially when the remuneration committees are composed of NEDs for independence reasons.

Key shareholders such as institutional investors and blockholders also have a key effect on CEO pay. In theory, these shareholders are assumed to be one of the monitoring devices for constraining CEO pay when they do not see superior performance associated with this continued rise. Given that blockholders have a strong influence over the board of directors through their voting rights, it is expected that this tool will have a key impact on the level of CEO pay (i.e. decreasing cash pay and increasing long-term pay). Based on the above argument, the following hypotheses are generated:

*H3: CEO short-term pay is negatively affected by the percentage of NEDs, institutional ownership, blockholders ownership.*

*H4: CEO long-term pay is positively affected by the percentage of NEDs, institutional ownership and blockholders ownership.*

Managerial ownership is also a vital factor that influences the transformation of CEO pay. Theories of corporate governance indicate that directors' ownership could be a good mechanism to eliminate the conflicts of interests between managers and shareholders. This is because those managers become risk-taking rather than risk-

averse agents, since they also become shareholders in the company where they serve. Correspondingly, it is expected that this type of ownership will be associated with lower long-term compensation. Alternatively, a higher percentage of CEO ownership results in power being acquired by these managers. Managerial power theory claims that CEO ownership is just an additional premium that assists to increase their entrenchment in the company rather than directing their motives towards shareholders' interests. Questioning the sustained increase in CEO pay in recent year that does not have a corresponding improvement in performance may provide insights into the whole issue of managerial power. Based on the theoretical assumption of managerial power theory, it is expected that the effect of other shareholders disappears in the presence of managerial power. Hence, the more power that is acquired by top managers, the less governance practices can influence of other factors (i.e. board structure, institutional ownership, blockholders ownership). Accordingly, two hypotheses are tested:

*H5: CEO short-term pay is positively affected by the percentage of CEO ownership.*

*H6: CEO long-term pay is negatively affected by the percentage of CEO ownership.*

The model that is proposed to test these hypotheses is:

Model (2)

$$\ln(\text{CEO pay})_{it} = \alpha_0 + \beta_y \ln(\text{CEO pay})_{it-1} + \beta_x \log(\text{governance})_{it} + \gamma_z \text{Control} + \varepsilon_{it}$$

Where:

- $\ln(\text{CEO pay})$  = the natural logarithm of salary, bonus, cash compensation, long-term compensation and total compensation.
- $\ln(\text{pay})_{t-1}$  = the prior year's CEO pay (i.e. salary, bonus, cash compensation, long-term compensation and total compensation).
- Governance = includes log of board size, log of board structure measured by the percentage of NEDs, the percentage of CEO ownership, the number of institutional owners, the percentage of institutional ownership, the number of individual blockholders, the total percentage of individual blockholders' ownership of the firm, log of tenure, and duality (dummy).

- Control = firm size, ROE, TSR, firm risk, CEO age and CEO experience.

#### **4.4.3. CEO pay and political connection**

The association between CEO pay and political connection, defined by the political contributions that are made by companies, has been given little attention in the executive pay literature, especially in the UK. It is known that some companies tend to have a political orientation that provides the business with a variety of benefits, such as access to future government policies, lower tax rates, credit sources and gaining additional power among other firms. Since a political contribution is a decision that is taken by board members, it is highly likely it is top managers who in reality have the political orientation and motives to support a particular political party; hence, they are highly likely to be paid higher compensation than other managers for acquiring additional power and private information through their political network. Based on this possibility, it is reasonable to assume that firms are willing to pay higher compensation to politically connected managers in order to supply the business with additional external resources that lead to maximizing the firm value.

Both agency theory and resource dependence theory support the explanation that managers are paid more if they have distinguished characteristics that set them above other managers. Empirical literature also supports these theoretical explanations by providing evidence that politically connected firms outperform other firms (see, among others: Goldman *et al.*, 2009; Cooper *et al.*, 2010). Therefore, from the agency theory perspective, paying higher compensation to these managers could be one of the key mechanisms that lead to firm value enhancement. It is also reasonable under the resources dependence theory to assume that those managers who are paid generously to join the company, in turn bring it additional source of power. Accordingly, it is assumed that politically connected CEOs are paid higher compensation when compared to their peers.

In order to investigate whether politically connected managers are paid higher compensation according to their political ties, it is assumed that political connection (i.e. a political contribution or a political network size) will have a positive impact on CEO pay. Furthermore, since the argument above is based on the political network of CEOs, it is assumed that a CEO with connections to government parties is more

powerful and desirable due the benefits they bring, of having access to government policies. Thus, this research examines whether those companies that support the three leading parties in the UK pay even higher compensation to their CEOs. From the above argument, the following hypotheses are derived:

**H7: *Ceteris paribus*, politically connected CEOs are paid higher compensation.**

*H7a: CEO total pay level is positively related to political contributions, number of political parties supported and political dummy.*

*H7b: CEO total pay level is positively related to political contributions that are made in support of leading political parties in the UK.*

The model that is used to test hypothesis 7 is designed as follows:

$$\ln(\text{CEO pay})_{it} = \alpha_0 + \beta_y \ln(\text{CEO pay})_{it-1} + \beta_x \log(\text{Political})_{it} + \gamma_z \text{Control} + \varepsilon_{it}$$

Where:

- CEO pay level = the natural log of short-term compensation (salary + bonus + other annual payments), the natural log of long-term compensation (the cost of options and LTIPs) and total compensation.
- Political = includes total political contributions (lag), political (dummy), the number of political parties supported (lag), number of political parties (dummy), political contribution made for Conservative (dummy), political contribution made for Labour (dummy), political contribution made for Liberal democrat (dummy).
- Control = firm size, ROE, TSR, firm risk, CEO age, CEO experience, board size and board structure.

Managerial power theory also explains the relationship between CEO pay and political connection. It argues that those managers who are in powerful positions in the company have the freedom to follow their political affiliation by supporting such political parties from the financial sources of the company. Having said that, it is claimed that this political contribution is merely another agency cost that is incurred by top management in order to enjoy more power and prestige. Hence, firms may be aware of managerial power that is generated from being connected to politicians. In order to hedge against this power, firms might apply strict governance practices as a

way to diminish the negative effect of CEO political connection (i.e. undesirable managerial entrenchment). The investigation will therefore test some governance indicators in politically connected firms to determine how these governance tools affect CEO pay.

Corporate governance is an important factor that assists when judging whether the higher compensation that is paid to politically connected CEOs is justified and efficient or merely one implication of managerial power. This directs this study to investigate the issue from a different perspective, since it has been argued that politically connected CEOs are paid higher compensation, the structure of their pay could be a significant indicator of governance practices that are applied. In other words, a higher percentage of equitable compensation means that those top managers are well tied and governed. Consequently, how these firms pay CEOs is an important question that should be investigated in conjunction with the political connection issue. Therefore, the following sets of hypotheses are generated:

**H8: *Ceteris paribus*, politically connected CEOs are expected to be strictly governed.**

*H8a: the ratio of short-term compensation is negatively associated with political contribution, number of political parties supported and political dummy.*

*H8b: the ratio of long-term compensation is positively associated with political contribution, number of political parties and political dummy.*

The model that is proposed to test these hypotheses is:

Model (4)

$$\ln CEO\ pay\ structure_{it} = \alpha_0 + \beta_y (\ln CEO\ PAY\ structure)_{it-1} + \beta_x political_{it} + \beta_z Control_{zit} + \varepsilon_{it}$$

Where:

- CEO pay structure = the natural log of the percentage of short-term compensation and the natural log of the percentage of long-term compensation.
- Political = includes total political contributions (lag), number of political parties supported (lag) and political (dummy).

- Control = firm size, ROE, TSR, firm risk, CEO age, CEO experience board size and board structure.

## **4.5. Conclusion**

This chapter has three main objectives; first, it discusses the methodologies that are used by prior literature in the field of executive pay. Mainly, OLS and FE estimations are critically reviewed and their key shortcomings that discount them from use in testing the relationship between executive pay and firm performance in this study are identified. These problems are endogeneity, unobserved heterogeneity and the dynamic nature of the pay-performance relationship. As it is believed that there are alternative estimations that could diminish these statistical problems, the chapter presents the GMM estimation as one of the least biased estimators that are recommended for use in executive pay research. More specifically, the System GMM estimator will be adopted in this research.

Second, the chapter describes the data and sample selection that is used. This research uses UK data extracted from three databases: executive pay, governance and political connection data gathered from Manifest, firm characteristics data gathered from Fame and financial data collected from DataStream. The sample consists of 777 UK firms from all industries, excluding financial and insurance firms. Executive remuneration data is limited to cover only CEO compensation from 2000-2012. The chapter also provides the measurement criteria for all variables that are employed in the empirical analysis. These include CEO pay measurements, firm performance measurements, corporate governance measurements, political connection measurements and control variables measurements.

Third, this chapter discusses the three main questions that represent the main concern of this research. This discussion highlights the argument that is related to (I) testing the effect of CEO pay on firm performance (II) testing the effect of corporate governance practices on CEO pay and (III) testing the effect of political connection on CEO pay. The subsequent section develops three sets of hypotheses that will be tested by the suggested models. These hypotheses are derived from the theoretical argument of Agency Theory, Managerial Power Theory and Resource Dependence Theory.

# Chapter 5: CEO Pay and Firm Performance

## 5.1. Introduction

This chapter aims to investigate the effect of CEO compensation on firm performance. The chapter examines whether or not companies that pay higher compensation enjoy superior performance. Based on the theoretical assumption of the agency theory, managerial incentives are considered to be one of the solutions that are offered to motivate top management to act in line with the interests of company's shareholders. This paves the way for the main question of this chapter; whether managerial compensation contributes to the enhancement of firm performance in a number of consecutive years. The underlying assumptions of the agency theory may provide sufficient explanation for most of the prior literature that investigates the issue from different perspective. As presented in the literature review, the majority of executive pay literature concentrates on whether firm performance determine executive pay or not. This is simply because top managers tend to be rewarded following superior performance. However, the agency framework aims to go beyond the short-term boundaries, meaning that the introduction of pay for performance schemes has a broader objective that is related to motivating managers working for longer periods to maintain a high level of performance. It is well known that even though top officers are rewarded directly after achieving specified targets of performance, these rewards are mostly conditioned by satisfactory future performance.

Nevertheless firms tend to pay high compensation for top management in order to improve performance, but practically speaking, higher compensation may not be associated with improved performance, which is generally affected by various factors such as managerial behavior or other uncontrollable factors such market crashes. The National Management Salary Survey 2015 shows that that the average bonus paid to

underperforming managers in the UK is £8,800. The survey also reveals that 45% of underperforming top managers still receive bonuses.

The other major theory that could provide an explanation of this situation is Managerial Power Theory. The basic claim of this theory is that top managers, under the context of agency framework, are in a powerful position that provides them with a sufficient level of freedom to set their own compensation. Accordingly, these powerful managers are more likely to serve themselves through extracting rent that is easily reachable via compensation contracts. In the end, managerial incentives may result in another agency cost for the company rather than contributing to improved performance.

The present chapter is expected to contribute to the existing literature in two ways. First, this research asks the question of whether or not CEO pay enhances firm performance in the short- and the long-term conditions. To the knowledge of the author, this is the first study that tests the relationship between pay and performance in this way. The literature of executive compensation mostly investigates whether firm performance determines pay or not. Therefore, this chapter aims to fill this gap in the executive pay literature by investigating whether or not firms that pay higher compensation show superior performance. Second, this chapter provides evidence that CEO basic salary has a negative impact on performance, while CEO bonus is found to be positively associated with short-term performance. Most of prior literature combines these two forms of pay in one variable, based on the similar nature of salary and bonus (i.e. annual cash payments), and tests it in association with firm performance. This research shows how these two elements create a different effect in the separate approach and how combining them provides an incorrect inference. There is no such study in the UK that employs both single and combined compensation variables in this way.

In this chapter, two types of performance measures are used: (1) accounting-based measures which include Earnings per Share (EPS) and Return on Equity (ROE) and refer to short-term performance, (2) market-based measures which include Total Shareholder Return (TSR) and Tobin's Q (TOBINSQ) and refer to long-term performance. Also, CEO compensation is broken down into five elements including: total salary (SALARY), total bonus (BONUS), cash compensation (CASHCOMP),

long-term compensation (LTCOMP) and total compensation (TOTALCOMP). This is to assess the influence of each component on firm performance (all performance and compensation variables are identified in chapter four). The main sample consists of 777 listed companies in the UK from different sectors. The sample includes all industries except financial firms (i.e. banks and insurance companies) for the period from 2000-2012 (See Appendix 3 for details). This is because financial companies have different criteria in terms of compensation and performance conditions.

The remainder of this chapter is organized as follows. First, a summary of descriptive statistics is presented to cover the entire data sample and present a discussion of the key statistical figures that shed light on the compensation of CEOs in the UK and firm performance. Second, the chapter discusses the outputs from the GMM estimation that test the relationship between CEO compensation and the four performance models; EPS, ROE, TSR and TOBINS'Q. This is followed by the summary and conclusion.

## **5.2. Descriptive Statistics**

The summary statistics presented in table 5.1 show that there is heterogeneity in CEOs compensation in the UK. This is evident from the high standard deviation for all compensation variables. The average cash salary of CEOs is £398,585 and the average bonus is £220,412. Consequently, the average cash compensation for CEOs in the UK is £641,672. Goh and Gupta (2011) report similar figures for a sample of CEOs in the UK with average salary £325,340 and average bonus £246,850. Overall, Table 5.1 shows that the average total CEO compensation in the UK is £1,245,252. The summary statistics also indicate that the average percentage of short-term compensation is 76%, while the percentage of long-term compensation accounts for 24% of the average total pay. This indicates that short-term compensation components still represent the major proportion of CEO compensation in the UK. Table 5.2 presents the same statistical figures prior adjusting for inflation.

Compensation variables	Mean	Median	St. deviation	Minimum	Maximum	Observations
<b>SALARY (£,000)</b>	399	340	250	2	1,226	5418
<b>BONUS (£,000)</b>	220	0	442	0	2,947	5916
<b>OTHER (£,000)</b>	34	18	64	0	449	5916
<b>CASHCOMP (£,000)</b>	642	437	630	2	3,882	5422
<b>LTCOMP (£,000)</b>	517	0	1,159	0	7,611	5916
<b>TOTALCOMP (£,000)</b>	1,245	643	1,696	1	10,300	5466
<b>STCOMP %</b>	76	88	26	1	100	5418
<b>LTCOMP %</b>	24	8	27	0	100	5466

SALARY is the annual cash salary of CEOs  
BONUS is the annual cash bonus received by CEOs  
OTHER is any annual compensation such as benefits in kind.  
CASHCOMP is measured by the sum of total cash salary and total cash bonus  
LTCOMP is measured by the sum of LTIPs and options  
TOTALCOMP is measured by the sum of salary, bonus, LTIPs, options and other emolument.  
STCOMP% is the percentage of short-term compensation (i.e. salary, bonus and other annual compensation) in the total pay.  
LTCOMP% is a percentage of long-term compensation (i.e. LTIPs and options) in the total pay.

Compensation variables	Mean	Median	St. deviation	Minimum	Maximum	Observations
<b>SALARY (£,000)</b>	349	300	222	2	1,100	5418
<b>BONUS (£,000)</b>	196	0	376	0	2,100	5916
<b>OTHER (£,000)</b>	29	16	55	0	380	5916
<b>CASHCOMP (£,000)</b>	559	418	480	2	2,500	5418
<b>LTCOMP (£,000)</b>	462	0	1,045	0	6,800	5916
<b>TOTALCOMP (£,000)</b>	1,107	565	1,533	1	9,200	5466

SALARY is the annual cash salary of CEOs  
BONUS is the annual cash bonus received by CEOs  
OTHER is any annual compensation such as benefits in kind.  
CASHCOMP is measured by the sum of total cash salary and total cash bonus  
LTCOMP is measured by the sum of LTIPs and options  
TOTALCOMP is measured by the sum of salary, bonus, LTIPs, options and other emolument.

Table 5.3 reports the average CEO compensation for each year of the sample period. As the table shows, CEO cash payments, including salary and bonus, have

dramatically increased from £371,239 in 2000 to £763,075 in 2012, representing a 105% increase in the annual CEO cash compensation during the sample period. Also, the table shows the movement of long-term compensation that includes both options and LTIPs during the sample period. The percentage change of the average long-term compensation from 2000 to 2012 is 175%. This is a significant increase that reflects the importance of postponing a key proportion of CEO pay for the future in order to tie those managers into longer periods of performance. The average total CEO compensation, which was £675,432 in 2000, has increased to £1,638,727, representing 143% change over the course of the sample period.

**Table 5.3. The average CEO pay 2000-2012**

YEAR	SALARY	BONUS	OTHER	CASHCOMP	LTCOMP	TOTALCOMP	STCOMP	LTCOMP
2000	368,939	1,353	47,671	371,239	231,350	675,432	62%	34%
2001	369,168	971	43,316	373,068	324,843	770,983	54%	42%
2002	392,143	833	44,943	395,308	480,202	977,954	45%	49%
2003	400,367	7,880	41,577	410,042	486,760	981,819	46%	50%
2004	388,762	71,764	39,038	465,323	400,605	929,750	54%	43%
2005	381,513	197,164	35,786	598,432	407,359	1,071,764	57%	38%
2006	382,706	274,997	36,075	695,360	454,509	1,246,637	56%	36%
2007	393,435	337,428	30,547	782,030	523,662	1,425,268	53%	37%
2008	415,432	287,476	34,121	734,874	569,563	1,382,164	53%	41%
2009	431,307	268,156	29,861	737,372	535,954	1,366,738	53%	39%
2010	397,516	340,073	28,926	756,820	600,343	1,418,032	54%	42%
2011	410,604	345,891	25,450	776,214	753,924	1,597,911	49%	47%
2012	425,309	248,460	19,317	763,075	635,859	1,638,727	42%	39%
%Δ	15	246 <sup>20</sup>	-59	105	175	143	-32%	13%

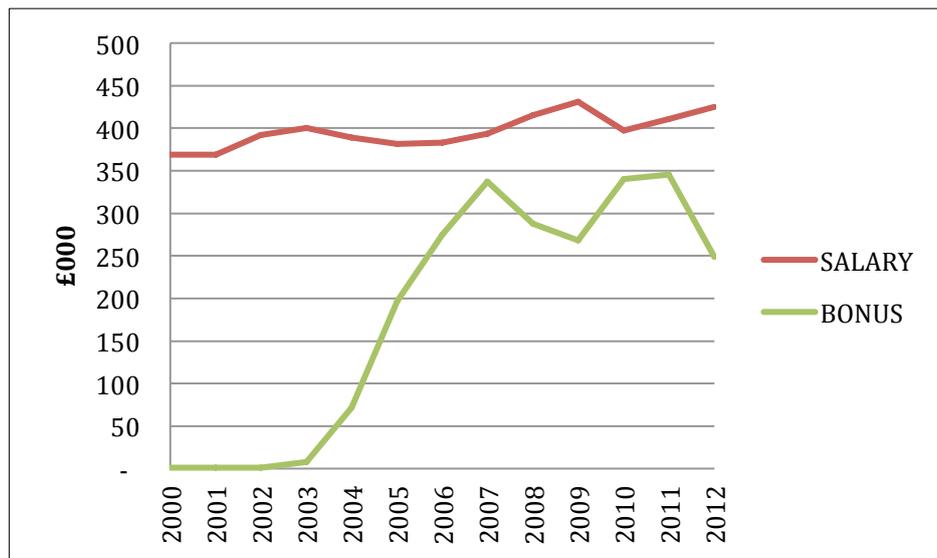
SALARY is the annual cash salary of CEOs  
BONUS is the annual cash bonus received by CEOs  
OTHER is any annual compensation such as benefits in kind.  
CASHCOMP is measured by the sum of total cash salary and total cash bonus  
LTCOMP is measured by the sum of LTIPs and options  
TOTALCOMP is measured by the sum of salary, bonus, LTIPs, options and other emolument.  
STCOMP% is the percentage of short-term compensation (i.e. salary, bonus and other annual compensation) in the total pay.  
LTCOMP% is a percentage of long-term compensation (i.e. LTIPs and options) in the total pay.

Figure 5.1 shows how both salary and bonus change over the sample period. The salary's line clearly presents the gradual increase in CEO salary during the period from 2000-2012. The figure also shows that CEO bonuses were extremely low prior

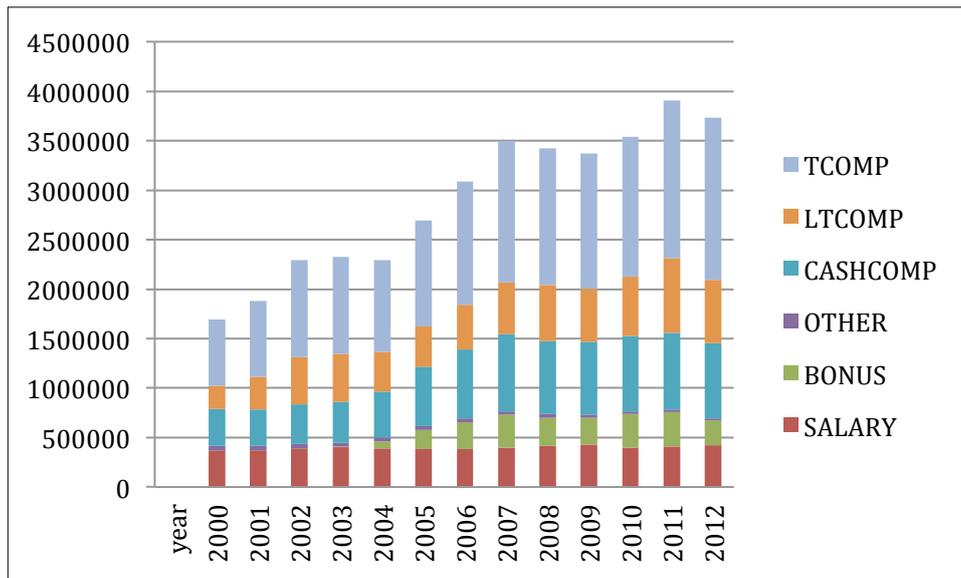
<sup>20</sup> The percentage change of CEOs bonus is calculated from 2004 due to the very low mean values reported before this year.

to 2004. This might be explained by the fact that, in the UK, executive remuneration disclosure became compulsory in 2003, therefore, the low figures that are reported before the year 2004 simply reflects the lack of remuneration data that could gathered. Figure 5.1 also shows that bonus movement in recent years might not be in favour of CEOs in the UK. This downward trend of bonuses could be a sign of reform in CEO bonus plans in the UK. It could be argued that the executive bonus plans, especially in the financial sector, may have contributed to the market crash in 2007-2008, which is also associated with the general public outrage raised against the continued rise of executive pay (Gregg *et al.*, 2012). Figure 5.2 summarises the movement of all compensation elements during the sample period, demonstrating the sustained increase in executive pay in the UK.

**Figure 5.1. Average salary and bonus for CEOs 2000-2012**



**Figure 5.2. The average COE's pay 2000-2012**



The graphical analysis of the structure of CEOs' compensation shows significant changes since 2000. Figure 5.3 demonstrates the key movement in CEOs' compensation structure in the UK over the research period. In 2000, CEOs' base salary used to account for 55% of total compensation; whereas the performance linked compensation (i.e. bonus, LTIPs and options) represented around 38%. In 2006, it could be seen that the salary of CEOs was reduced to account for only 33% of total compensation, while the performance linked element rose to 64%, which reflects the orientation towards postponing pay so as to link it with future performance. The sample data shows that by 2012, the percentage of base salary is still decreasing, to account for only 27% of total compensation, while the size of the performance linked components has increased even further, to 71% of total pay. Bell and Reenen (2012) report similar figures in 2009-10, with base salary accounting for 34% of total pay, and both short- and long-term compensation accounting for 67%. For further graphical representation of executive compensation see Appendix 4.

**Figure 5.3. The structure of CEO's compensation in the UK in 2000, 2006 and 2012**

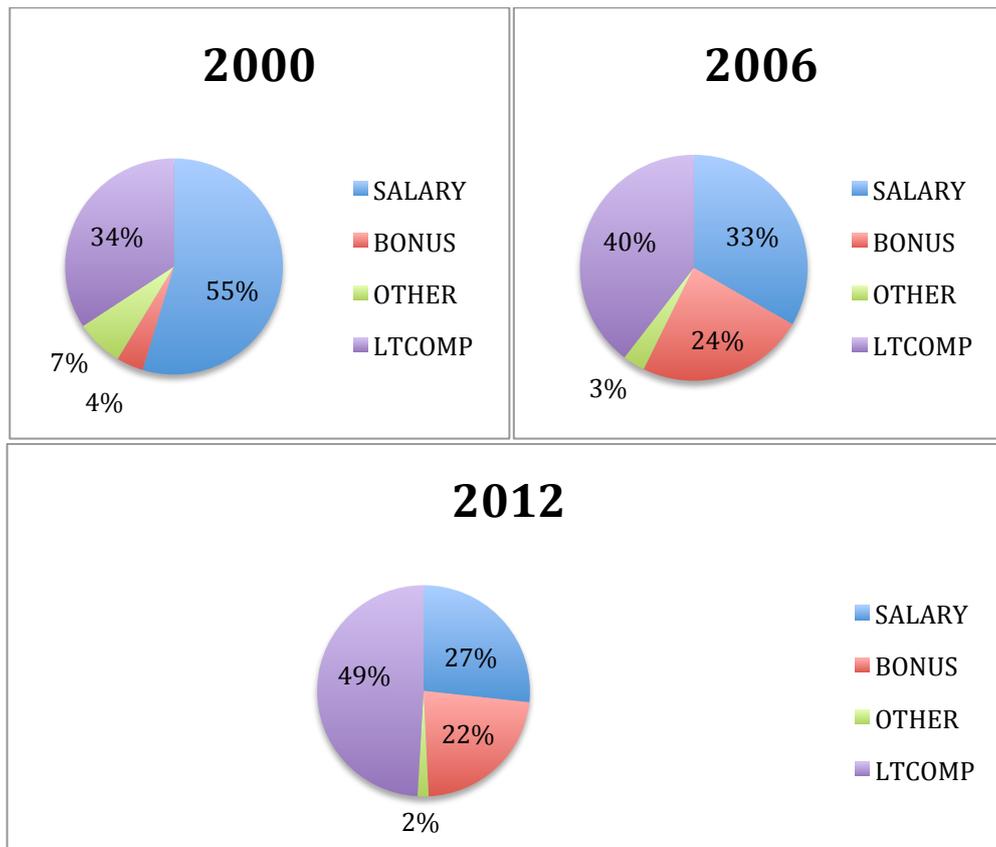


Table 5.4 displays a summary of statistics of firm performance in the UK for the sample period. For all performance variables, the standard deviation exceeds the mean and median. This implies that the data is widely spread and the variance is relatively high. This also could be explained by the performance variables containing negative values. The average ROE is 7.5% and the highest figures are reported in the three years prior to market crash in 2008 (11%, 12% and 12% in 2005, 2006 and 2007 respectively, see Appendix 5a). The lowest ROE ratio (-0.53, see Appendix 5a) was reported in 2009, and this can be seen as one of the direct effects of the 2008 market crash (for yearly average and a graphical presentation of performance variables see Appendix 5). The average TSR and TOBINS'Q are 0.13 and 2.14 respectively.

**Table 5.4. Summary Statistics of firm performance and control variables**

Performance Variables	Mean	Median	St. deviation	Minimum	Maximum
EPS	23.52	11.81	35.75	0.00	231.44
ROE	7.47	11.17	40.00	-209.33	143.46
TSR	0.13	0.08	0.58	-0.86	2.66
TOBINSQ	2.14	1.43	2.29	0.05	16.17
Control Variables	Mean	Median	St. deviation	Minimum	Maximum
SIZE	12.68	12.57	2.14	6.70	18.91
LEVERAGE	0.14	0.09	0.16	0.00	0.78
RISK	0.47	0.43	0.27	0.04	0.96
ASSET TURNOVR	0.78	0.59	0.81	-0.02	4.07
COMPANY AGE	30.88	16.00	33.50	0.50	116.00

Table 5.5 illustrates the correlation matrix of all variables. The table clearly shows the high correlation between compensation variables, which is expected and is taken into consideration when running a regression analysis. Each compensation variable is tested separately with each performance variables. Also, the size of the firm seems to highly correlated with compensation variables, which provides an initial indication that large companies tend to offer higher compensation packages to CEOs.

**Table 5.5. Correlation matrix of all variables**

	EPS	TSR	ROE	TOBINS'Q	SALARY	BONUS	CASHCOMP	LTCOMP	TOTALCOMP	SIZE	LEVER'E	RISK	ASSTOVR
EPS	1.00												
TSR	-0.03	1.00											
ROE	0.22	0.05	1.00										
TOBINS'Q	0.04	0.13	0.32	1.00									
SALARY	0.29	-0.04	0.16	-0.06	1.00								
BONUS	0.25	0.03	0.22	0.06	<b>0.69</b>	1.00							
CASHCOMP	0.30	0.00	0.21	0.03	<b>0.88</b>	<b>0.92</b>	1.00						
LTCOMP	0.22	-0.05	0.13	0.06	<b>0.60</b>	<b>0.55</b>	<b>0.63</b>	1.00					
TOALCOMP	0.28	-0.03	0.20	0.07	<b>0.82</b>	<b>0.81</b>	<b>0.90</b>	<b>0.84</b>	1.00				
SIZE	0.37	-0.06	0.14	-0.22	<b>0.76</b>	<b>0.63</b>	<b>0.75</b>	<b>0.60</b>	<b>0.76</b>	1.00			
LEVERAGE	0.09	-0.09	0.11	-0.18	0.21	0.10	0.15	0.13	0.15	0.31	1.00		
RISK	-0.10	0.13	-0.09	-0.07	-0.05	0.00	-0.02	-0.02	-0.02	-0.03	-0.01	1.00	
WSSTOVR	-0.05	-0.01	0.04	0.04	0.01	0.00	0.01	-0.02	0.00	0.00	0.01	0.03	1.00

### 5.3. The empirical results from the OLS, FE and SYSTEM-GMM models

The empirical results that test the effect of all CEO compensation components on firm performance are presented in tables 5.6 to 5.11. The OLS and FE models are used initially to present a comparison between the three key models (including SYS-GMM) and the remainder of the chapter follows the results from the SYS-GMM model. The hypotheses that are tested in this chapter, which are based on arguments related to the agency framework and the managerial power theory are:

*H5.1: Short-term measures of performance are positively affected by short-term compensation.*

*H5.2: Long-term measures of performance are positively affected by long-term compensation.*

The rejection of the null hypotheses H5.1 and H5.2 supports the agency theory that managerial incentives do indeed contribute to enhancing firm performance, and consequently allow the managerial power claim to be rejected. In order to answer the question whether current pay is associated with future improved performance, lagged pay is used in all regression analyses. The model used to verify the hypotheses is:

$$\log(\text{Performance})_{it} = \alpha_0 + \beta_y \log(\text{Performance})_{it-1} + \beta_x \ln(\text{CEO pay})_{it-1} + \gamma_z \text{Control} + \varepsilon_{it}$$

#### 5.3.1. The effect of CEO compensation on EPS (OLS and FE results)

Tables 5.6 and 5.7 present regression outputs from the OLS and FE models and test the relationship between CEO pay and firm performance as measured by EPS. The reason that these results are presented at this stage is to highlight the variations of these models in comparison with the results of the SYS-GMM model that are given in table 5.8. At the first glance, it could be said that the only significant findings from OLS and FE are related to salary and bonus. The results show that EPS is negatively affected by salary and positively associated with bonus. However, the SYS-GMM results reveal different findings that will be discussed later in this chapter. As a consequence, these initial results from OLS and FE could be biased, because we know that the executive pay and firm performance relationship (as explained in chapter

four) as assessed by these models is highly likely to be affected by many statistical problems such as endogeneity, heteroskedasticity and serial correlation.

It can also be seen from tables 5.6, 5.7 and 5.8 that the coefficient of the lagged dependent variable in the GMM estimation lies between its counterpart coefficients in OLS and FE. This demonstrates that OLS may overestimate the pay-performance association, while FE may underestimate it. Having said this, the chapter follows the SYS-GMM estimation results due to its superior properties, which make it the least biased estimation in terms of testing the relationship between executive pay and performance.

Furthermore, Table 5.8 demonstrates that the SYS-GMM model is stable, since the Hansen test P value is insignificant. This indicates that the model does not suffer from the overidentification problem. Another test that is important in terms of the evaluation of model appropriateness is Arellano-Bond's test, which checks for first and second order serial correlation. It confirms the absence of the second order autocorrelation problem since the AR2 is insignificant in all the SYS-GMM regression outputs in this chapter.

**Table 5.6. The effect of CEO compensation on EPS (OLS)**

The dependent variable is EPS, measured by net income before preferred dividends - preferred dividend requirement divided by the average outstanding shares. EPS is expressed in the logarithm form. Column (1) is assigned for SALARY, measured by the annual total cash salary of CEOs. Column (2) is assigned for BONUS, measured the annual total cash bonus of CEOs. Column (3) is assigned for CASHCOMP, measured by the sum of total cash salary and total cash bonus. Column (4) is assigned for LTCOMP, measured by the sum of the cost of options and the cost of LTIPs. Column (5) is assigned for TOTALCOMP, measured by the sum of total salary, total bonus, cost of options, cost of LTIPs, other. All compensation variables are expressed in the natural logarithm form. Control variables include SIZE, measured by natural logarithm of total assets, LEVERAGE, measured by the ratio of long-term debt to total assets, CAGE, measured by the number of years since firm's incorporation, RISK, measured by the CDF of the variance of firm's stock return and ASSTOVR, measured by the ratio of total sales to total assets.

Independent Variables	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS
Log EPS <sub>(t-1)</sub>	0.878*** (0.0136)	0.918*** (0.0176)	0.872*** (0.0139)	0.890*** (0.0197)	0.871*** (0.0139)
SALARY <sub>(t-1)</sub>	-0.101** (0.0430)				
BONUS <sub>(t-1)</sub>		-0.00558 (0.0248)			
CASHCOMP <sub>(t-1)</sub>			-0.0338 (0.0369)		
LTCOMP <sub>(t-1)</sub>				-0.00060 (0.0205)	
TOTALCOMP <sub>(t-1)</sub>					-0.0200 (0.0248)
Ln SIZE	0.0367*** (0.0131)	-0.00731 (0.0127)	0.00999 (0.0129)	0.0257 (0.0165)	0.00943 (0.0122)
LEVERAGE	-0.198** (0.0948)	-0.128 (0.110)	-0.162* (0.0951)	-0.273** (0.114)	-0.170* (0.0945)
CAGE	-0.000019 (0.00040)	-0.000066 (0.00051)	-0.000011 (0.00039)	0.000273 (0.00047)	2.39e-05 (0.00039)
RISK	0.0192 (0.0547)	0.0377 (0.0741)	0.0218 (0.0541)	-0.0420 (0.0716)	0.0195 (0.0541)
ASSTOVR	-0.0189 (0.0161)	0.00282 (0.0239)	-0.0150 (0.0160)	-0.00456 (0.0186)	-0.0179 (0.0159)
Constant	-0.824** (0.393)	-0.416 (0.267)	-1.409*** (0.322)	0.0183 (0.212)	-1.079*** (0.242)
Observations	2,656	1,141	2,660	1,344	2,669
R-squared	0.803	0.869	0.804	0.817	0.804
Year DUMMY	YES	YES	YES	YES	YES
Industry DUMMY	YES	YES	YES	YES	YES

This regression is based on the OLS estimation. All coefficients are based on the following model equation:

$$\log(\text{Performance})_{it} = \alpha_0 + \beta_y \log(\text{Performance})_{it-1} + \beta_x \ln(\text{CEO pay})_{it-1} + \gamma_z \text{Control} + \varepsilon_{it}$$

\*, \*\*, \*\*\* refer to statistical significance at the 10%, 5% and 1% levels, respectively. Year and industry dummies are included in the model.

**Table 5.7. The effect of CEO compensation on EPS (Fixed effect model)**

The dependent variable is EPS, measured by net income before preferred dividends - preferred dividend requirement divided by the average outstanding shares. EPS is expressed in the logarithm form. Column (1) is assigned for SALARY, measured by the annual total cash salary of CEOs. Column (2) is assigned for BONUS, measured the annual total cash bonus of CEOs. Column (3) is assigned for CASHCOMP, measured by the sum of total cash salary and total cash bonus. Column (4) is assigned for LTCOMP, measured by the sum of the cost of options and the cost of LTIPs. Column (5) is assigned for TOTALCOMP, measured by the sum of total salary, total bonus, cost of options, cost of LTIPs, other. All compensation variables are expressed in the natural logarithm form. Control variables include SIZE, measured by natural logarithm of total assets, LEVERAGE, measured by the ratio of long-term debt to total assets, CAGE, measured by the number of years since firm's incorporation, RISK, measured by the CDF of the variance of firm's stock return and ASSTOVR, measured by the ratio of total sales to total assets.

Independent Variables	(1) FE	(2) FE	(3) FE	(4) FE	(5) FE
Log EPS <sub>(t-1)</sub>	0.433*** (0.0761)	0.337*** (0.0711)	0.424*** (0.0784)	0.487*** (0.105)	0.427*** (0.0767)
SALARY <sub>(t-1)</sub>	-0.102** (0.0488)				
BONUS <sub>(t-1)</sub>		0.106*** (0.0274)			
CASHCOMP <sub>(t-1)</sub>			0.0227 (0.0401)		
LTCOMP <sub>(t-1)</sub>				0.0188 (0.0182)	
TOTALCOMP <sub>(t-1)</sub>					0.0129 (0.0245)
Ln SIZE	0.195*** (0.0536)	0.198** (0.0802)	0.163*** (0.0511)	0.194*** (0.0719)	0.163*** (0.0521)
LEVERAGE	-0.362 (0.228)	0.197 (0.214)	-0.330 (0.224)	-0.175 (0.288)	-0.348 (0.222)
CAGE	0.00381 (0.0149)	0.0272 (0.0414)	0.00660 (0.0153)	-0.00873 (0.0109)	0.00599 (0.0153)
RISK	-0.300*** (0.0696)	-0.313*** (0.0868)	-0.292*** (0.0677)	-0.375*** (0.0877)	-0.287*** (0.0681)
ASSTOVR	-0.00658 (0.0510)	0.0770 (0.0559)	-0.00398 (0.0515)	0.0261 (0.0552)	-0.00286 (0.0510)
Constant	-1.477 (1.093)	-4.335** (2.168)	-3.099*** (0.992)	-0.924 (1.014)	-2.585*** (0.886)
Observations	2,656	1,141	2,660	1,344	2,669
R-squared	0.287	0.308	0.291	0.382	0.290
Number of id	411	318	411	274	412
Year DUMMY	YES	YES	YES	YES	YES
Industry DUMMY	YES	YES	YES	YES	YES

This regression is based on the FE estimation. All coefficients are based on the following model equation:

$$\log(\text{Performance})_{it} = \alpha_0 + \beta_y \log(\text{Performance})_{it-1} + \beta_x \ln(\text{CEO pay})_{it-1} + \gamma_z \text{Control} + \varepsilon_{it}$$

\*, \*\*, \*\*\* refer to statistical significance at the 10%, 5% and 1% levels, respectively. Year and industry dummies are included in the model.

**Table 5.8. The effect of CEO compensation on EPS (SYSTEM-GMM model)**

The dependent variable is EPS, measured by net income before preferred dividends - preferred dividend requirement divided by the average outstanding shares. Column (1) is assigned for SALARY, measured by the annual total cash salary of CEOs. Column (2) is assigned for BONUS, measured the annual total cash bonus of CEOs. Column (3) is assigned for CASHCOMP, measured by the sum of total cash salary and total cash bonus. Column (4) is assigned for LTCOMP, measured by the sum of the cost of options and the cost of LTIPs. Column (5) is assigned for TOTALCOMP, measured by the sum of total salary, total bonus, cost of options, cost of LTIPs, other. All compensation variables are expressed in the natural logarithm form. Control variables include SIZE, measured by natural logarithm of total assets, LEVERAGE, measured by the ratio of long-term debt to total assets, CAGE, measured by the number of years since firm's incorporation, RISK, measured by the CDF of the variance of firm's stock return and ASSTOVR, measured by the ratio of total sales to total assets.

Independent Variables	(1) GMM-SYS	(2) GMM-SYS	(4) GMM-SYS	(6) GMM-SYS	(7) GMM-SYS
Log EPS <sub>(t-1)</sub>	0.677*** (0.0632)	0.682*** (0.0727)	0.717*** (0.0735)	0.781*** (0.0804)	0.662*** (0.0735)
SALARY <sub>(t-1)</sub>	-0.127*** (0.0451)				
BONUS <sub>(t-1)</sub>		0.111** (0.0521)			
CASHCOMP <sub>(t-1)</sub>			-0.351*** (0.129)		
LTCOMP <sub>(t-1)</sub>				0.00949 (0.0303)	
TOTALCOMP <sub>(t-1)</sub>					-0.386** (0.172)
Ln SIZE	0.228*** (0.0491)	0.115** (0.0562)	0.379*** (0.101)	0.201*** (0.0668)	0.436*** (0.126)
LEVERAGE	-1.196*** (0.423)	-0.509** (0.242)	-0.869** (0.354)	-0.686** (0.291)	-1.010** (0.434)
CAGE	0.000746 (0.00074)	0.00125 (0.00085)	0.00002 (0.00105)	0.00008 (0.00083)	0.000100 (0.00094)
RISK	-0.130* (0.0737)	-0.139 (0.405)	-0.144 (0.567)	-0.160 (0.389)	-0.712 (0.545)
ASSTOVR	-0.0217 (0.0263)	0.0241 (0.0354)	-0.0110 (0.0420)	-0.00594 (0.0346)	-0.0190 (0.0389)
Constant	8.935 (6.564)	6.503 (5.072)	7.435 (10.31)	9.565 (6.709)	7.650 (6.791)
Observations	2,724	1,365	2,727	1,641	2,738
Number of id	419	355	419	319	420
Year FE	YES	YES	YES	YES	YES
Industry Dummy	YES	YES	YES	YES	YES
Number of instruments	96	67	71	90	61
Hansen Test P	0.509	0.353	0.276	0.468	0.176
AR(1)	0.000	0.006	0.000	0.000	0.000
AR(2)	0.904	0.599	0.731	0.523	0.686

All coefficients are based on the SYS-GMM model according to the following model equation:

$$\log(\text{Performance})_{it} = \alpha_0 + \beta_y \log(\text{Performance})_{it-1} + \beta_x \ln(\text{CEO pay})_{it-1} + \gamma_z \text{Control} + \varepsilon_{it}$$

\*, \*\*, \*\*\* refer to statistical significance at the 10%, 5% and 1% levels, respectively. The AR(2) test denotes the Arellano-Bond test to check for second order autocorrelation in the residuals. The Hansen test checks for the joint validity of instruments and the absence of overidentification problem. Year and industry dummies are included in the model.

### 5.3.2. The effect of CEO compensation on short-term performance

Tables 5.8 and 5.9 summarize the relationship between short-term performance (i.e. EPS and ROE) and CEO pay. The results from column (1) in each of the two tables show that short-term performance is negatively associated with CEO salary, meaning that higher salaries paid to top officers could be counter to the prime aim of managerial compensation. This is confirmed by the negative and significant coefficients of the lagged SALARY in both the EPS and ROE models. This compensation form of pay reflects the certain pay that is received by CEOs at the end of a specific point of time. Hence, these fixed payments could be the preferential choice for these managers because they do not have any level of risk, as other compensation elements do. Finding that salary is inversely related to short-term performance implies that paying higher salaries to CEOs may result in managerial complacency and the sense of entrenchment. Consequently, the officers in the highest position in the firm may not have the incentive to maximise short-term performance if they are certain of receiving their pay.

The negative association between salary and short-term performance could also be explained by the image of power that is exercised by top management. More powerful managers may have the sufficient freedom to set their own contracts and hence they may increase the proportion of fixed salaries in their compensation contracts. This is consistent with the managerial power theory claim that managers exploit their power to extract more rent through their compensation. This result is in line with the findings of Farmer *et al.* (2013) who also find a negative association between the base salary and short-term performance. The agency theory highlights this problem and suggests paying managers in other forms that could motivate them to maximise their effort in improving firm performance. Accordingly, the introduction of pay that is linked with performance by the agency framework may provide a solution that could diminish such a negative effect of this type of pay.

**Table 5.9. The effect of CEO compensation on ROE (SYSTEM-GMM model)**

The dependent variable is ROE measured by the ratio of (net income before preferred dividends - Preferred Dividend Requirement) / last year's common equity. Column (1) is assigned for SALARY, measured by the annual total cash salary of CEOs. Column (2) is assigned for BONUS, measured the annual total cash bonus of CEOs. Column (3) is assigned for CASHCOMP, measured by the sum of total cash salary and total cash bonus. Column (4) is assigned for LTCOMP, measured by the sum of the cost of options and the cost of LTIPs. Column (5) is assigned for TOTALCOMP, measured by the sum of total salary, total bonus, cost of options, cost of LTIPs, other. All compensation variables are expressed in the natural logarithm form. Control variables include SIZE, measured by natural logarithm of total assets, LEVERAGE, measured by the ratio of long-term debt to total assets, CAGE, measured by the number of years since firm's incorporation, RISK, measured by the CDF of the variance of firm's stock return and ASSTOVR, measured by the ratio of total sales to total assets.

Independent Variables	(1) GMM-SYS	(2) GMM-SYS	(3) GMM-SYS	(4) GMM-SYS	(5) GMM-SYS
Log ROE (t-1)	0.395*** (0.0573)	0.273*** (0.0788)	0.400*** (0.0606)	0.261*** (0.0716)	0.377*** (0.0611)
SALARY (t-1)	-0.112* (0.0571)				
BONUS (t-1)		0.218*** (0.0537)			
CASHCOMP (t-1)			-0.0727 (0.191)		
LTCOMP (t-1)				-0.0733 (0.0805)	
TOTALCOMP (t-1)					-0.0705 (0.141)
Ln SIZE	0.141*** (0.0541)	0.123** (0.0565)	0.137* (0.0735)	0.0791* (0.0438)	0.150* (0.0805)
LEVERAGE	-0.645** (0.306)	0.0318 (0.284)	-0.664** (0.307)	-0.142 (0.286)	-0.740** (0.323)
CAGE	-0.00098 (0.00091)	0.00032 (0.00119)	-0.00092 (0.00092)	-0.00224** (0.00102)	-0.00092 (0.00091)
WRISK	0.211 (0.131)	-0.0660 (0.213)	0.194 (0.132)	-0.0723 (0.111)	0.190 (0.129)
WASSTOVR	-0.0306 (0.0292)	-0.0533 (0.0529)	-0.0339 (0.0311)	0.00937 (0.0448)	-0.0369 (0.0313)
Constant	2.640 (5.338)	13.58 (14.44)	2.794 (6.122)	4.540 (3.388)	1.479 (4.718)
Observations	1,977	1,086	1,979	1,272	1,989
Number of id	356	309	356	273	357
Year FE	YES	YES	YES	YES	YES
Industry Dummy	YES	YES	YES	YES	YES
Number of instruments	107	90	102	99	102
Hansen Test P	0.180	0.439	0.120	0.359	0.136
AR(1)	0.000	0.000	0.000	0.000	0.000
AR(2)	0.446	0.265	0.440	0.288	0.556

All coefficients are based on the SYS-GMM model according to the following model equation:

$$\log(Performance)_{it} = \alpha_0 + \beta_y \log(Performance)_{it-1} + \beta_x \ln(CEO\ pay)_{it-1} + \gamma_z Control + \varepsilon_{it}$$

\*, \*\*, \*\*\* refer to statistical significance at the 10%, 5% and 1% levels, respectively. The AR(2) test denotes the Arellano-Bond test to check for second order autocorrelation in the residuals. The Hansen test checks for the joint validity of instruments and the absence of overidentification problem. Year and industry dummies are included in the model.

With respect to performance-linked compensation in the short term, the results in Table 5.8 and 5.9 column (2) reveal that BONUS is significantly and positively affects both EPS and ROE. This is expected because these performance measures are usually linked with the conditions criteria that are attached to bonus plans in most firms. In other words, managers are aware that any increase in accounting profit will positively affect their compensation through their being rewarded bonuses according to specified targets. This is consistent with the agency theory framework that managers should be paid in various forms that motivate them to maximize firm profitability in the short-term. Reaching this result supports hypothesis H5.1 that short-term measures of performance are positively affected by short-term incentives. This result is in line with Bruce *et al.* (2007), who find a similar relationship and reports a positive correlation between annual bonus plans and earnings per share. However, since the results are negative for lagged SALARY and positive for lagged BONUS, this affects the results that are related to cash compensation (CASHCOMP), which is basically the sum of these two variables. The results in Table 5.8 column (3) show that EPS is negatively associated with CASHCOMP.

Finding that salary and bonus each affect short-term performance in a different direction demonstrates that the nature of each element is different. The nature of salary as a fixed and certain form of pay differs from the nature of bonus as a performance-linked component. This demonstrates that these two variables should not be aggregated when testing for their effect on firm performance. Thus, the negative association that is shown in the CASHCOMP results implies that the effect of salary outweighs the effect of bonus. Banker *et al.* (2013) also find that salary and bonus have opposite effects on firm performance when examining them with past performance using a sample of US firms. For this reason, they suggest that salary and bonus should be tested separately to see the effect of each variable and to justify the effect of the combined variable on CEO pay. Unlike the result of this study, they find that salary is positively associated with future performance while bonus does not have a significant effect on future performance.

The results presented in Tables 5.8 and 5.9, column (4), show the relationship between long-term compensation and short-term performance. Findings indicate that there is no evidence of any significant association between short-term performance

measures and long-term compensation (LTCOMP). This result is expected because these types of incentive are often conditional on targeted stock return, hence, it is expected that LTCOMP will not have a significant association with either EPS and ROE. Overall, column (5) in the two tables shows that total compensation (TOTALCOMP) has a negative impact on EPS and a non-significant effect on ROE. Since this is also an aggregated variable, it is likely that it is affected by the conflicting signs of other compensation components that are used in this analysis. This demonstrates that the total magnitude of compensation does not matter as much as the structure of the pay when attempting to motivate managers in different ways (i.e. short-term performance or long-term performance).

Results from the short-term performance measures suggest that the agency framework of pay for performance is effective and could enhance firm profitability. This is confirmed by the results of one of the compensation components that is linked to short-term performance indicators i.e. CEO bonus, which shows a positive and significant impact on future profit. However, this could be negatively influenced by other fixed payments such as salary; the results demonstrate that higher salaries are associated with lower accounting profit. This could be a result of either managerial complacency, or alternatively, it could be another aspect of managerial power, in the sense that these managers set their own compensation packages.

### **5.3.3. The effect of CEO compensation on long-term performance**

The vast majority of executive pay literature uses Total Shareholder Return (TSR) as a primary indicator of long-term performance. This is because of its sensitivity to CEO compensation and the belief that TSR could be more informative and reliable compared to other performance measures. The effectiveness of TSR as a performance measure comes from its relationship to the stock behaviour in the market place. The main difference between accounting-based measures (i.e. ROE, ROA, EPS and ROCE) and TSR is that the former provide information about managers' actions in either the past or the current period, while TSR reflects current and future information (Banker *et al.*, 2013). Unlike previous research that tests whether or not TSR determines executive compensation, this study will attempt to determine the effect of CEO pay on TSR. For a further robustness check, the Tobin's Q (TOBINSQ) measure

is also regressed with CEO compensation as another key market-based performance indicator.

The results displayed in Tables 5.10 and 5.11 summarize the effect of CEO compensation on TSR and TOBINSQ. More specifically, the results in this section test H5.2, which is related to market-based measures of CEO performance. The LTCOMP results show a positive and significant relationship with both TSR and TOBINSQ. This is to be expected because the aim of introducing equity-based compensation is to maximise shareholder return in the long-term. The positive relationship that is found between LTCOMP and long-term performance measures supports the agency theory claim that top managers' compensation should be tied to longer periods of performance in order to improve firm value (Murphy, 1998; Farmer *et al.*, 2013). This claim is supported by this study's findings that postponing a significant amount of CEO compensation leads to improved long-term performance and is consistent with hypothesis H5.2 that long-term measures of performance are positively affected by long-term compensation.

However, TSR is inversely related with short-term compensation payments. Columns (2) and (3) of Table 5.10, show that BONUS and CASHCOMP have a significant and negative impact on TSR, while the results presented in columns (2) and (3) of Table 5.11 reveal no evidence of any significant association between short-term payments and TOBINSQ. This suggests that offering CEOs a higher proportion of their compensation in the form of cash could have benefits for the firm in the short-term, but that could also damage the more important aim of the agency framework; i.e. enhancing firm value in the long-term. The positive association between short-term compensation and accounting profit, and the negative association in the case of TSR, confirms the presence of the horizon problem that is discussed in the literature (see, among others; Dechow and Sloan, 1991; Brickley *et al.*, 1999). This is why the general public's concern has shifted recently to the call for a postponement of a key proportion of compensation so that it is linked with future performance.

**Table 5.10. The effect of CEO compensation on TSR (SYSTEM-GMM model)**

The dependent variable is TSR, measured by the difference between share price at the end of the year and at the start of the year, plus dividend divided by share price year start. Column (1) is assigned for SALARY, measured by the annual total cash salary of CEOs. Column (2) is assigned for BONUS, measured the annual total cash bonus of CEOs. Column (3) is assigned for CASHCOMP, measured by the sum of total cash salary and total cash bonus. Column (4) is assigned for LTCOMP, measured by the sum of the cost of options and the cost of LTIPs. Column (5) is assigned for TOTALCOMP, measured by the sum of total salary, total bonus, cost of options, cost of LTIPs, other. All compensation variables are expressed in the natural logarithm form. Control variables include SIZE, measured by natural logarithm of total assets, LEVERAGE, measured by the ratio of long-term debt to total assets, CAGE, measured by the number of years since firm's incorporation, RISK, measured by the CDF of the variance of firm's stock return and ASSTOVR, measured by the ratio of total sales to total assets.

Independent Variables	(1) GMM-SYS	(2) GMM-SYS	(3) GMM-SYS	(4) GMM-SYS	(5) GMM-SYS
Log TSR (t-1)	0.00751 (0.0329)	0.0845** (0.0379)	-0.0152 (0.0360)	0.0737 (0.0593)	-0.0164 (0.0285)
SALARY (t-1)	-0.0284 (0.0284)				
BONUS (t-1)		-0.0411*** (0.0152)			
CASHCOMP (t-1)			-0.0605** (0.0280)		
LTCOMP				-0.192*** (0.0615)	
LTCOMP (t-1)				0.0664** (0.0258)	
TOTALCOMP (t-1)					-0.0403** (0.0170)
Ln SIZE	0.0614*** (0.0208)	0.0468*** (0.0169)	0.0908*** (0.0248)	0.0587** (0.0261)	0.0917*** (0.0212)
LEVERAGE	-1.839*** (0.571)	-0.693** (0.293)	-2.387*** (0.663)	-0.0967 (0.108)	-2.391*** (0.478)
CAGE	0.000367 (0.000369)	0.000431 (0.000271)	0.000279 (0.000495)	0.000282 (0.000348)	0.000569 (0.000446)
RISK	0.0903** (0.0389)	0.0748* (0.0441)	0.0921** (0.0451)	0.165*** (0.0614)	0.0756* (0.0405)
ASSTOVR	-0.0276* (0.0156)	0.00342 (0.0128)	-0.0311 (0.0194)	-0.0164 (0.0173)	-0.0277* (0.0161)
Constant	3.129 (2.156)	3.342 (2.053)	2.970 (2.704)	1.660*** (0.573)	2.420 (2.432)
Observations	2,667	1,146	2,671	1,347	2,680
Number of id	417	321	417	275	418
Year FE	YES	YES	YES	YES	YES
Industry Dummy	YES	YES	YES	YES	YES
Number of instruments	72	76	72	98	72
Hansen Test P	0.580	0.131	0.198	0.310	0.182
AR(1)	0.000	0.000	0.000	0.000	0.000
AR(2)	0.766	0.962	0.396	0.0738	0.461

All coefficients are based on the SYS-GMM model according to the following model equation:

$$\log(\text{Performance})_{it} = \alpha_0 + \beta_y \log(\text{Performance})_{it-1} + \beta_x \ln(\text{CEO pay})_{it-1} + \gamma_z \text{Control} + \varepsilon_{it}$$

\*, \*\*, \*\*\* refer to statistical significance at the 10%, 5% and 1% levels, respectively. The AR(2) test denotes the Arellano-Bond test to check for second order autocorrelation in the residuals. The Hansen test checks for the joint validity of instruments and the absence of overidentification problem. Year and industry dummies are included in the model.

**Table 5.11. The effect of CEO compensation on TOBINS'Q (SYSTEM-GMM model)**

The dependent variable is TOBINSQ, measured by market value of firm assets plus long term debt divided by book value of total assets. Column (1) is assigned for SALARY, measured by the annual total cash salary of CEOs. Column (2) is assigned for BONUS, measured the annual total cash bonus of CEOs. Column (3) is assigned for CASHCOMP, measured by the sum of total cash salary and total cash bonus. Column (4) is assigned for LTCOMP, measured by the sum of the cost of options and the cost of LTIPs. Column (5) is assigned for TOTALCOMP, measured by the sum of total salary, total bonus, cost of options, cost of LTIPs, other. All compensation variables are expressed in the natural logarithm form. Control variables include SIZE, measured by natural logarithm of total assets, LEVERAGE, measured by the ratio of long-term debt to total assets, CAGE, measured by the number of years since firm's incorporation, RISK, measured by the CDF of the variance of firm's stock return and ASSTOVR, measured by the ratio of total sales to total assets.

Independent Variables	(1) GMM-SYS	(2) GMM-SYS	(3) GMM-SYS	(4) GMM-SYS	(5) GMM-SYS
TOBINS'Q <sub>(t-1)</sub>	0.566*** (0.0898)	0.562*** (0.0813)	0.444*** (0.0723)	0.543*** (0.0304)	0.440*** (0.0741)
SALARY <sub>(t-1)</sub>	0.110 (0.0803)				
BONUS <sub>(t-1)</sub>		0.0628 (0.0558)			
CASHCOMP <sub>(t-1)</sub>			0.0744 (0.0857)		
LTCOMP				0.0589** (0.0236)	
LTCOMP <sub>(t-1)</sub>				0.0309** (0.0154)	
TOTALCOMP <sub>(t-1)</sub>					0.0471 (0.0734)
SIZE	-0.137*** (0.0434)	-0.107** (0.0420)	-0.152*** (0.0450)	-0.108*** (0.0329)	-0.147*** (0.0447)
LEVERAGE	1.775** (0.800)	-0.0722 (0.380)	1.786** (0.800)	-0.460*** (0.176)	1.703** (0.793)
CAGE	-0.00311** (0.00147)	-0.00261* (0.00138)	-0.00336** (0.00148)	-0.000555 (0.000712)	-0.00324** (0.00145)
RISK	-0.0330 (0.0981)	1.923 (1.524)	-0.0852 (0.100)	-0.0333 (0.0708)	-0.0894 (0.101)
ASSTOVR	0.0195 (0.0396)	0.00512 (0.0512)	0.00821 (0.0432)	0.0343 (0.0284)	0.00451 (0.0423)
Constant	6.065 (5.183)	10.56 (10.58)	8.913 (5.919)	1.095** (0.513)	9.054 (6.327)
Observations	2,718	1,140	2,721	1,342	2,732
Number of id	424	320	424	274	425
Year FE	YES	YES	YES	YES	YES
Industry Dummy	YES	YES	YES	YES	YES
Number of instruments	41	44	43	104	43
Hansen Test P	0.383	0.177	0.383	0.135	0.437
AR(1)	0.000	0.003	0.000	0.000	0.000
AR(1)	0.640	0.887	0.538	0.360	0.522

All coefficients are based on the SYS-GMM model according to the following model equation:

$$\log(\text{Performance})_{it} = \alpha_0 + \beta_y \log(\text{Performance})_{it-1} + \beta_x \ln(\text{CEO pay})_{it-1} + \gamma_z \text{Control} + \varepsilon_{it}$$

\*, \*\*, \*\*\* refer to statistical significance at the 10%, 5% and 1% levels, respectively. The AR(2) test denotes the Arellano-Bond test to check for second order autocorrelation in the residuals. The Hansen test checks for the joint validity of instruments and the absence of overidentification problem. Year and industry dummies are included in the model.

The finding that TSR is negatively associated with cash compensation has two theoretical explanations. The first is provided by managerial power theory, which states that in the firms where top managers enjoy the power and freedom to arrange compensation contracts, it is possible that they act for their own sake, increasing the proportion of short-term payments. Therefore, finding this negative association implies that compensation is not linked with firm performance, supporting the rent extracting assumption of the theory. Second, it relate to the short horizon problem; this result suggests that companies which offer higher cash compensation to their CEOs could motivate those managers to maximize their short-term performance which leads to an increase their cash compensation. It also demotivates them to maximize their long-term performance since the majority of their compensation is short-term payments. That optimal contracting approach suggests that managerial remuneration should include both short- and long-term components in order to achieve the best alignment between managers and shareholders. Accordingly, the results from this study suggest that both short and long-term compensation are important for improving performance, but it seems that increasing the long-term payments in favor of short-term ones may offset the effect of the short horizon problem and contribute to maximization firm value.

It is important to draw the attention that in Table 5.10, Column 4, in the model both lagged and current LTCOMP are included. The aim for this approach is to track both contemporaneous and the lagged (i.e. long-term) effect of LTCOMP on TSR. According to the result, it could be said that including the lagged variable alone in the model does not tell the whole story. The contemporaneous LTCOMP is significantly and negatively associated with TSR. This implies that CEOs may control the share price around their grant's date and leak some bad news in order to decrease share price prior this date and benefit from future increase (Yermack 1997). Having said that, there is a possibility that those CEOs may behave in an opportunistic way in order to maximise their wealth in the future rather than shareholder's wealth (Chauvin and Shenoy, 2001; Baker *et al.* 2003). The belief of this notion is in line with managerial power theory and it is supported empirically in the literature. However, this evidence might be weak and needs further event study in order to verify whether managers control the share price around their incentives' grant date and whether this affects TSR in the same year.

TOTALCOMP results presented in table 5.10 and 5.11, column 5, are affected by the negative coefficients of other compensation variables, revealing an inverse relationship between TSR and TOTALCOMP, while it does not have a significant impact on TOBINSQ. This key result indicates that companies that offer higher compensation packages are not expected to perform better than other companies. More importantly, companies that place more weight on equity-based compensation may improve its performance in the long run. Likewise, companies that offer higher cash compensation are expected to gain higher return in the short run, but this could affect negatively firm value in the future.

With respect to the control variables, results show that SIZE is positively associated with accounting-based measures of performance and TSR, while it is inversely related to TOBINSQ. This indicates that large companies are more likely to gain higher profit and stock return. The negative association between firm size and TOBINSQ is attributed to measurements criteria. Since the size is measured by the sum of a firm's total assets, and the Tobin's Q ratio is measured by the market to book value of firm assets, an increase in one variable will possibly lead to a decrease in the other. The results also indicate that TSR is positively associated with firm risk; this is expected and supported by the asset price theories which state that a higher risk is possibly associated with a higher return. Company age also shows a negative association with Tobin's Q, which could be also be related to firm's total assets, which evolves during the live business cycle.

#### **5.4. Summary and Conclusion**

This chapter empirically tested the impact of CEO pay on firm performance. The statistical analysis covered a sample of 777 listed UK companies from 2000-2012. By employing the SYSTEM-GMM estimation, a number of significant findings emerged from this analysis. First, findings indicate that higher CEO salaries are inversely related to short-term performance. This result suggests that paying top officers higher salaries may provide them with a sense of complacency that demotivates them to enhance firm profitability. The agency theory provides a solution to the negative effect of fixed salaries by introducing the pay for performance framework to induce top officers to maximise firm performance. Alternatively, managerial power theory

may explain this result in claiming that top managers may have the discretion to set their own compensation contracts without intervention. Thus, it is expected that in firms where managerial power is high, compensation packages include higher fixed payments that are not linked with performance, or worse yet, higher fixed salaries which are associated with poor performance. Second, the results show that CEO bonuses are positively associated with short-term performance indicators. This indicates that the short-term element of pay might be a good incentive for maximizing performance in the short-term. The positive association between bonus and short-term performance is in line with the agency theory that managerial incentives should be linked with performance to solve for the expected interests' misalignment between managers and shareholders.

However, the findings also show that total shareholder return is negatively affected by increased short-term compensation. This evidence suggests that paying top managers higher annual cash compensation may shift their motives towards improving performance in the short-term. This is why most firms have recently moved towards more long-term compensation to hedge against the short horizon problem of managerial incentives. These findings indicate that the short-term compensation components such as bonus, play a role in enhancing short-term performance, but they should be restricted so as not to damage the more desirable objective of executive compensation i.e. enhancing shareholder return in the long-term.

Third, findings reveal that salary and bonus are reported with opposite signs when tested separately against firm performance. This might be attributed to the different nature of each element; salary is a fixed and certain form of pay that is not linked with firm performance, whereas bonus is a performance-linked form of pay. Results show that short-term performance is negatively associated with higher salaries and positively affected by bonus. This implies that these two elements should not be combined for analysis, because they provide different inferences. This is confirmed by the results of the combined variable (i.e. cash compensation), which shows that performance is inversely related to CEO cash compensation. This may provide an incorrect indication in terms of the effect of short-term compensation on short-term performance.

Fourth, the analysis of long-term compensation, which is measured by the cost of options and LTIPs, employs both lagged and current variables. Findings indicate that lagged long-term compensation of CEOs can positively affect the current year TSR and Tobin's Q. This is consistent with the agency theory that long-term compensation ties CEOs to longer periods of firm performance, thereby achieving the required alignment between the interests of managers and shareholders. However, the current long-term compensation variable provides the opposite inference; the results show a negative relationship between the current long-term compensation and TSR, which implies that providing top officers with a bulk of shares under long-term compensation conditions in the current year can negatively affect the current year's TSR. The only explanation of this result is the opportunistic behaviour of top managers who may control the announcement of bad news around their grant's date. This is to benefit from the decrease in share price prior to grant's date.

Fifth, it seems that, in general, total compensation has a negative impact on both short and long-term performance. Results show that the coefficient of total compensation is significant and negative in the case of EPS and TSR. This indicates that higher compensation does not matter as much as the structure of compensation; meaning that companies should consider carefully how they offer compensation packages to their CEOs.

In summary, the findings here support the agency theory that managerial incentives can contribute to enhance both short- and long-term performance. The only concern that emerges from these results is the magnitude of salary offered and cash payments in general, which could affect both accounting profit and total return if CEOs are overpaid through this form of compensation.

# Chapter 6: CEO pay and Corporate Governance

## 6.1. Introduction

This chapter aims to investigate the determinants of executive pay in the UK, more specifically, corporate governance practices that are applied in UK firms and its effect on CEO pay. The literature demonstrates theoretically and empirically that governance practises have a key role to play in restricting the level of executive pay and transforming the way in which this pay can reflect performance. Some governance indicators may either increase or decrease the level of executive pay, which depends on whether the governance is strongly or weakly applied. Agency theory provides the framework that proposes the optimal contracting process for top management in order to ensure that management is acting in line with the best interests of shareholders (Jensen and Meckling, 1976). Incentive schemes are introduced to achieve the best governance that can be applied to officers in higher positions in order to bind them to firm performance. In contrast, managerial power theory provides an opposing explanation for the sustained increase in executive pay in recent years i.e. that higher pay does not reflect firm performance; instead, it is merely another source of power for top managers (Bebchuk and Fried, 2006).

The need for an empirical analysis that tests the relationship between corporate governance and executive pay is motivated by the lack of consistent findings in prior studies, especially in the UK. The two theories presented above provide conflicting explanations of executive compensation; hence, the question to ask, the answer to which would support one theory over another is ‘What is the effect of corporate governance practices on executive compensation in the UK?’ This is because corporate governance theories indicate that if the governance requirements are firmly applied in firms, executive compensation will be restricted by performance movements, supporting the agency theory claim. Likewise, corporate governance is expected to have a minor effect on executive compensation, because the power of top managers is sufficiently high, which would support managerial power theory.

The empirical literature that tests the relationship of the two theories mentioned above in executive compensation and corporate governance reveals mixed findings that may not give a consistent answer to the question above. Having said this, this chapter is motivated by this conflicting in findings obtained from prior research, especially in the UK. The chapter therefore investigates how corporate governance could affect CEO compensation levels, and more importantly, how this effect is explained according to the theoretical background. Also, most of prior literature combines some compensation components, such as salary and bonus, into one variable. When investigating such effects; it has already been demonstrated that salary and bonus should not be combined because the nature of each form of pay differs. To the best of the author's knowledge, CEO salary as a separate element of pay is not sufficiently tested in the literature with either corporate governance or firm performance. Thus, this chapter provides evidence that fills this gap in executive pay literature in the UK.

The answer to this chapter's question is based on the statistical approaches that test the relationship between CEO pay and corporate governance indicators using the SYSTEM-GMM estimation. The main sample includes 777 UK companies from different industries, excluding financial and insurance companies for the period from 2000-2012. Compensation variables include total salary, total bonus, cash compensation, long-term compensation and total compensation (all compensation variables are described in chapter four). Corporate governance variables include board size, board structure, measured by the percentage of non-executive directors (NEDs), the percentage of shares that are owned by CEOs, the percentage of shares that are owned by institutional blockholders (shareholders with above 5% ownership)<sup>21</sup>, the number of institutional blockholders, the percentage of shares that are owned by individual blockholders<sup>22</sup>, the number of individual blockholders, the length of CEO tenure and a CEO duality dummy (again, all governance variables are described in chapter four). Finally, control variables include ROE, TSR, firm size, firm risk, executive age and executive experience.

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<sup>21</sup> For each company, I gathered the aggregated percentage of shares that were owned by institutional blockholders. Hence, if there is more than one institutional investor who owns more than 5% of company's common share, the variable consists of the sum of all percentages of ownership.

<sup>22</sup> This variable includes the aggregated percentage of ownership of all individual blockholders.

The rest of this chapter is structured as follows. The first section presents descriptive statistics relating to the governance variables that are employed in this chapter. The second section illustrates the empirical results from the SYSTEM-GMM that tests the relationship between corporate governance and CEO pay. This is followed by an analysis of some variables to provide a further robustness check. The final section presents the summary and conclusion.

## **6.2. Descriptive statistics**

The summary of statistics relating to the governance variables are presented in Table 6.1. As can be seen from the table, the average board size in UK companies is nine directors with a low standard deviation, indicating that sample does not widely spread and the average is sufficiently reliable. This is consistent with most of UK studies; Renneboog and Zhao (2011) report that the average board size in the UK is eight. In another key UK-based study, Ozkan (2011) also shows that the average board size is nine. The structure of the board is also important in terms of the percentage of executive and non-executive directors. The table shows that the average percentage of non-executive directors in the board is 56%, which implies that UK firms balance the board membership between executive and non-executive directors. This could be a sign of good governance practices that were applied recently by companies in the UK. The Combined Code 2008 states clearly that “The board should include a balance of executive and non-executive directors”. Renneboog and Zhao (2011: 41) and Ozkan (2011: 269) provide similar figures with respect to the percentage of NEDs in UK companies.

Ownership statistics reveal that the average percentage of CEO shareholdings is roughly 5%. The minimum CEO ownership in the sample is 0.001% and the maximum was 65%, reflecting a high percentage of managerial ownership. The magnitude of CEOs who own more than 5% of the company’s outstanding shares represents only 18% of the whole sample. Furthermore, the average percentage of institutional shareholders who own over 5% of their company’s outstanding shares is 32% and the average number of institutional shareholders in the sample is three.

**Table 6.1. Summary statistics of governance variables**

Variables	Mean	Median	St. deviation	Minimum	Maximum	Observations
<b>Board Size</b>	9	9	3	3	19	5916
<b>Board Structure (% of NEDs)</b>	56.14	57.00	15.02	14.00	88.00	5916
<b>Institutional shareholders ownership %</b>	32.06	29.00	18.90	5.00	92.00	4719
<b>No of institutional shareholders</b>	3	3	2	1	11	4719
<b>Individual blockholder ownership %</b>	24.94	20.50	16.66	5.01	58.40	805
<b>No of individual blockholders</b>	1	1	1	1	5	805
<b>CEO Shareholdings</b>	4.88	0.31	13.16	0.001	65.47	4249
<b>CEO Age</b>	51	51	7	35	72	5916
<b>CEO Tenure</b>	9	8	7	1	52	5916
<b>CEO Experience</b>	8	7	7	0 <sup>23</sup>	53 <sup>24</sup>	5693
<b>The percentage of male directors = 98%</b>						
<b>The percentage of CEO duality = 8%</b>						

Table 6.1 also shows that the average percentage of individual blockholders in the sample is 25%, with a maximum number of five individuals who own 5% or more of the company's outstanding shares. The standard deviation of both institutional and individual shareholdings is small indicating that most data is not far from the average. Table 6.1 also indicates that the average CEO age in the UK is roughly 52 years, and the average tenure is nine years. The data also shows that 98% of the CEOs are male and that 8% of the CEOs simultaneously occupy the positions of chairman and chief executive officer. The latter low percentage implies that UK companies are willing to apply good governance practices, as stated in the Combined Code 2008.

### **6.3. The effect of corporate governance on CEO pay**

This section presents estimation results relating to the effect of corporate governance on the level of CEO pay. The focal debate in corporate governance literature is whether or not it plays a role in restricting the level of executive pay especially if it is not associated with improved performance. Thus, the required effect of corporate governance is to redirect the interests of top managers towards achieving the collective goals of firms. This can be accomplished only if corporate governance

<sup>23</sup> The zero experience basically refers to those CEOs who have directorship experience for less than one year.

<sup>24</sup> CEO experience represent the number of years for a CEO in directorship which could be related to serving as a director in more than one company over time.

practices work as an effective monitor for managers and the way in which they are paid. However, this is not always the case if we consider the power and authority of those top officers, which could harm the system of corporate governance inside any firm if their power is exploited for their personal interests. Hence, compensation packages that consist of higher long-term payment and lower cash payment could reflect the optimal contracting that is advocated by the agency theory. Likewise, compensation packages include higher cash compensation could be a sign of extracting rent by those managers, which lies at the heart of managerial power theory. Accordingly, it is expected that short-term compensation (long-term compensation) is negatively (positively) associated with corporate governance indicators. Accordingly, the hypotheses are recalled as follows:

*H6.1: CEO short-term pay is negatively affected by the percentage of NEDs, institutional ownership, blockholders ownership.*

*H6.2: CEO long-term pay is positively affected by the percentage of NEDs, institutional ownership and blockholders ownership.*

The rejection of the null hypotheses H6.1 and H6.2 will imply that governance benchmarks play their required role to achieve the best alignment between managers and shareholders, supporting the agency theory perspective. Finding the contrast of the above will imply that the required role is passive. This also could reflect managerial power that influences the process of executive compensation, supporting the managerial power view in this context.

Managerial ownership can be seen from two different theoretical perspectives. First, it could be seen as a solution for the agency conflict for those managers who become shareholders through owning company's shares. Thus, it would be expected that these managers need less long-term compensation because their ownership will align their interests with those of shareholders. Alternatively, managerial power theory argues that key managerial ownership leads to more entrenchment, which is more likely to be associated with high power. Moreover, higher managerial ownership may allow those powerful managers to build their own empire, affecting the governance system inside the firm. Accordingly, the hypotheses are recalled as follows:

*H6.3: CEO short-term pay is positively affected by the percentage of CEO ownership.*

*H6.4: CEO long-term pay is negatively affected by the percentage of CEO ownership.*

The rejection of the null hypotheses H6.3 and H6.4 will imply that managerial ownership may provide those managers with sufficient power and freedom to extract rent through increasing their cash compensation and decreasing the level of uncertain long-term compensation.

The model that is used to test the above hypotheses is designed as follows:

$$\ln(\text{CEO pay})_{it} = \alpha_0 + \beta_y \ln(\text{CEO pay})_{it-1} + \beta_x \log(\text{governance})_{it} + \gamma_z \text{Control} + \varepsilon_{it}$$

### **6.3.1. Board size effect**

The results presented in Table 6.2 summarize the relationship between governance indicators and CEO pay. The table shows that BOARDSIZE is inversely related to CEO pay. This is confirmed by the negative coefficients that are reported with all compensation variables, which are also statistically significant, except in the case of CEO bonus. Based on the theories that explain the influence of board size on executive compensation, a large board could reflect one of the monitoring tools that constrain managerial alliances. Large boards may also represent various experiences that could also be associated with improved governance applications. However, empirical findings that are related to board size are still too ambiguous to reach a judgement on whether or not a large board is more effective than a smaller one, or vice versa. For instance, Ozkan (2011) finds that larger boards are associated with higher executive compensation, indicating that a larger board could be less effective in monitoring top management due to communication and coordination problems. Yermack (1996) also finds similar evidence that a large board is inversely related to firm performance, interpreting this to mean that as the board size increases, the incentives that are offered to CEOs may not be efficiently linked with firm performance. In contrast, Knop and Mertens (2010) find that a large board has a

positive impact on performance-linked compensation, supporting the notion that a large board may be a good governance tool that reduces the agency conflict between management and shareholders.

In this research, the finding that board size is inversely related to all CEO compensation components implies that as the board size increases, the chance for CEOs to be offered higher compensation decreases. This may be interpreted to mean that the tasks and responsibilities become distributed between members in the board, and in this way affect the level of CEO compensation. This result is consistent with the findings of Cyert *et al.* (2002) who found a negative association between board size and equity compensation, pointing out that the relationship could be indirect if we consider firm size. In contrast, Core *et al.* (1999) report a positive association between board size and total CEO pay. Their findings support the claim that a large board size may be less effective in managing the process of setting executive compensation.

### **6.3.2. Board structure effect**

It is worth drawing attention to the fact that board size alone may provide little explanation in terms of executive compensation. This is because the structure of this board is more important. The results of board structure analysis in Table 6.2 show a positive and significant association between BOARDSTRUC and all CEO compensation variables. Board structure, measured by the percentage on NEDs is expected to reflect board independence, since those directors are appointed to the board to monitor executive directors. This is one of the corporate governance frameworks that are required by governance regulations in the UK. However, finding that CEO compensation is an increasing function of the percentage of NEDs could be questioned according to the major role that is required by those independent directors.

Theoretically, this positive relationship between CEO compensation and board structure somewhat supports the managerial power theory with two possible explanations. First, CEOs who acquire the most powerful position in the company may influence other executives and non-executive directors in the boardroom (Wade *et al.*, 1990; Core *et al.*, 1999; Ozkan, 2011; Doucouliagos *et al.*, 2012). They build social relationships over time and this might be a source of managerial influence

through either power or social relationships. Alternatively, this finding can be interpreted as a source of mutual interests between executive and non-executive directors. The remuneration committee, which is usually consists of NEDs who simultaneously serve on the board, may be willing to increase CEO pay to influence them voting in turn for an increase in NED pay. This results in creating lobbying activities inside boardroom that serves the interests of both executive and non-executive directors (Renneboog and Zhao, 2011). Taken together, the two explanations support the rent extraction assumption of managerial power theory. This could harm the objectivity that is required from non-executive directors who serve in the board for the purpose of assuring the independence of these critical processes.

However, this does not tell the whole story if we consider the effect of the firm size, which is found to be positively and significantly related to CEO compensation. This implies that large firms tend to offer higher compensation to CEOs, either to attract talented and sophisticated managers or as just a prestigious action. Based on this result, it could be said that a third explanation is possible. This is that large companies, which attract the highest paid directors, may be more willing to apply good governance practices for many reasons, such as building a good reputation, and satisfying shareholders and governance regulators. However, this third explanation may be weakly supported by empirical findings in the UK which support the first two notions that NEDs in the UK are not found to be an effective monitoring device in executive compensation contexts (Franks and Mayer, 2001).

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**Table 6.2. The effect of corporate governance on CEO compensation**

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The dependent variables are illustrated in columns from (1)-(5). Column (1) is assigned for SALARY, measured by the natural logarithm of CEO annual base salary. Column (2) is assigned for BONUS, measured by the natural logarithm of CEO annual cash bonus. Column (3) is assigned for CASHCOMP, measured by the natural logarithm of the sum of CEO salary and bonus. Column (4) is assigned for LTCOMP, measured by the natural logarithm of the sum of the cost of options and the cost of LTIPs. Column (5) is assigned for TOATLCOMP, measured by the natural logarithm of the sum of CEO salary, bonus, cost of options, cost of LTIPs and other emolument such as benefits in kind.

The independent variables are illustrated in table's rows. logBOARDSIZE, measured by the logarithm of total number of directors in the board, logBOARDSTRUC, measured by the logarithm of the percentage of non-executive directors serving in the board, logINSTITUTIONAL%, measured by the logarithm of the percentage of shares that are owned by institutional shareholders (holding over 5% of shares), BLOCKHOLDERS%, measured by the logarithm of the percentage of shares that are owned by individual blockholders (holding over 5% of shares), logCEOSH%, measured by the logarithm of the percentage of shares that are owned by CEOs, INSTITUTIONAL#, measured by the number of institutional blockholders (holding over 5% of shares) and BLOCKHOLDERS#, measured by the number of individual shareholders (holding over 5% of shares), TENURE, measured by the logarithm of the number of years serving in the company and DULAITY, which is a dummy variable of CEOs who also hold the position of chairman.

Control variables include SIZE, measured by natural logarithm of total assets, RISK, measured by the CDF of the variance of firm's stock return, ROE, measured by the log of the ratio of (net income before preferred dividends - Preferred Dividend Requirement) / last year's common equity, TSR, measured by the difference between share price year end-start plus dividend divided by share price year start, log of CEOAGE and log of CEOEXP, measured by the total number of years in directorship.

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Independent Variables	(1)	(2)	(3)	(4)	(5)
	SALARY	BONUS	CASHCOMP	LTCOMP	TOTALCOMP
Lag (PAY)	0.0771** (0.0316)	0.214*** (0.0795)	0.150*** (0.0311)	0.0698** (0.0276)	0.160*** (0.0373)
logBOARDSIZE	-0.288*** (0.0548)	-0.0193 (0.328)	-0.330*** (0.0811)	-0.298*** (0.0910)	-0.259*** (0.0982)
logBOARDSTRUC	0.338*** (0.0714)	0.728*** (0.259)	0.509*** (0.0851)	0.460*** (0.116)	0.617*** (0.132)
logINSTITUTIONAL%	0.0487 (0.0816)	-0.0359 (0.0661)	0.0189 (0.0409)	0.00692 (0.0447)	-0.0290 (0.0595)
BLOCKHOLDERS %	-0.00773 (0.00496)	0.00757 (0.00567)	-0.000245 (0.00169)	0.000898 (0.00379)	-0.000865 (0.00146)
logCEOSH%	0.0393** (0.0176)	-0.0633 (0.0648)	0.0759*** (0.0282)	-0.119*** (0.0439)	0.0929** (0.0398)
INSTITUTIONAL#	-0.0877* (0.0519)	0.0534 (0.269)	-0.0344 (0.0417)	0.357** (0.153)	-0.0668 (0.0631)
BLOCKHOLDERS #	-0.0273 (0.0327)	-0.143 (0.115)	-0.0272 (0.0248)	0.262** (0.121)	-0.0307 (0.0280)
logTENURE	0.163*** (0.0438)	0.347** (0.169)	0.201** (0.0788)	0.245** (0.104)	0.237*** (0.0920)
DUALITY	0.114 (0.248)	0.984 (0.677)	-0.541 (0.418)	-0.278 (0.677)	-0.508 (0.364)
SIZE	0.238*** (0.0164)	0.277*** (0.0606)	0.285*** (0.0555)	0.316*** (0.0564)	0.339*** (0.0257)
RISK	0.0428 (0.0404)	-0.0979 (0.176)	0.0204 (0.424)	-0.0942 (0.148)	0.00202 (0.0597)
logTSR	-0.0240 (0.0249)	0.176 (0.142)	0.194 (0.163)	-0.112 (0.119)	0.0467 (0.0393)
logROE	0.0283** (0.0123)	0.160*** (0.0538)	0.0603*** (0.0216)	0.0526 (0.0407)	0.0920*** (0.0220)
logCEOAGE	-0.573 (0.507)	-0.685 (1.557)	-0.731 (0.949)	1.384 (1.008)	0.109 (1.114)
logCEOEXP	0.119* (0.0621)	0.00875 (0.133)	-0.0775 (0.109)	-0.323** (0.132)	-0.173 (0.132)
Constant	13.49*** (4.065)	3.384 (47.81)	15.41* (7.908)	23.49 (49.72)	8.197 (8.684)
Observations	2,361	1,127	2,364	1,281	2,373
Number of id	393	314	393	265	393
Year FE	YES	YES	YES	YES	YES
Industry Dummy	YES	YES	YES	YES	YES
Number of instruments	48	90	61	104	80
Hansen Test P	0.280	0.396	0.499	0.312	0.275
AR(1)	0.009	0.000	0.000	0.000	0.000
AR(2)	0.335	0.377	0.961	0.498	0.411

All coefficients are based on the SYS-GMM model according to the following model equation:

$$\ln(CEO\ pay)_{it} = \alpha_0 + \beta_y \ln(CEO\ pay)_{it-1} + \beta_x \log(governance)_{it} + \gamma_z Control + \varepsilon_{it}$$

\*, \*\*, \*\*\* refer to statistical significance at the 10%, 5% and 1% levels, respectively. The AR(2) test denotes the Arellano-Bond test to check for second order autocorrelation in the residuals. The Hansen test checks for the joint validity of instruments and the absence of overidentification problem. Year and industry dummies are included in the model.

Finding a positive association between board structure and CEO pay is in line with prior literature; Wade *et al.* (1990)<sup>25</sup>, Core *et al.* (1999)<sup>26</sup> and Ozkan (2007)<sup>27</sup> find that CEO compensation is positively affected by the percentage of non-executive directors. Core *et al.* (1999) attempt to explain that non-executive directors are actually appointed by CEOs; hence, this may build a relationship that is based on the trade-off of favours. According to their study, non-executive directors are not fully independent since those outsiders are employed by the company's CEOs<sup>28</sup>.

To further clarify, finding that BOARDSTRUC could influence the level of LTCOMP in a positive way could be a sign for good governance applications through postponing some payments of CEO pay until a future date. However, if we consider solely this result and ignore the other compensation components' results, we could say that NEDs reflect an effective governance tool that makes the compensation of CEOs more equitable. However, this is biased, since the relationship of this governance variable remains positive with all compensation variables.

The results above confirm the consistent presence of managerial alliances between CEOs and other members in the board. This finding is vital because it demonstrates that top officers seek to extract rent in all forms of compensation using their power and relationships. Even though this result is partially consistent with the hypothesis

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<sup>25</sup> Wade's study also mentions the same concern that external directors that are appointed after the appointment of CEOs may be influenced by the power of these top managers, affecting the process of setting CEO pay.

<sup>26</sup> In Core's study, the coefficient of the estimate indicates that a 1% increase in outside directors is associated with a \$1,353 increase in CEO cash compensation. They believe that this could be evidence of the lack of independence in those external directors.

<sup>27</sup> Ozkan (2011) adds to this argument that the relationship between CEO compensation and the percentage of NEDs could be non-linear. He finds a positive association between CEO pay and the percentage of non-executive directors, but he also provides evidence of a negative association between CEO pay and the ownership of non-executive directors. This implies that the required aim from those "independent" directors may be achieved if they are paid more equitable incentives. Accordingly, Ozkan assumes that the ownership of NEDs could be a key incentive to control the level of executive pay.

<sup>28</sup> The nature of board structure may be critical if we consider the characteristics of NEDs' independence. In other words, those managers should be assessed in terms of their appointment criteria, whether they are busy directors and whether they are fully independent on the firm and other executive directors. For example, Core *et al.* (1999) uses five measures to evaluate the independence of NEDs. These five measures are: outside directors appointed by CEOs, Gray outside directors, Interlocked outside directors, Outside directors over the age of 69 and Busy outside directors. For all of these five variables, Core's study concludes that executive compensation is positively related to the percentage of outside directors, interpreting this to mean that CEOs have the power to influence members of the board in order to extract rent.

H6.2, that CEO long-term pay is positively affected by the percentage of NEDs, it does not necessarily mean that NEDs play their governance role for the same reason that as discussed above.

### **6.3.3. Key Shareholders effect**

Key shareholders are considered a significant factor that could have an effect on executive compensation. Those shareholders who own more than 5% of the company's common shares have the right to vote, or in some circumstances they could attend the annual general meeting of the firm to voice their concerns. Perhaps one of the most influential shareholders in publicly traded companies is the institutional shareholder. In theory, these shareholders are expected to play a governance role if they own a substantial proportion of the company's outstanding shares. This is because these shareholders represent the direct monitoring procedure of top management that could diminish the agency conflict. They are usually pension funds, insurance companies and mutual funds, and hence they have the power to influence the way in which board resolutions can be made and approved (Brickley *et al.*, 1988; Agrawal and Mandelker, 1990). Consequently, it is expected that institutional shareholders could have a key impact on the level of executive compensation. Empirical literature supports this notion by providing evidence that is related to the institutional investors' effect on the level of executive compensation, suggesting that the presence of institutional investors could be a substitute monitoring mechanism that reduces the agency problem between managers and shareholders (Hartzell and Starks, 2003).

Another type of key shareholders are the blockholders who own more than 5% of the company's shares. In this research, the selected blockholder sample consists of individuals who are usually directors in other companies. These blockholders are expected to have a large portfolio of other ownership in other companies; hence they acquire the power of voting and influencing a firm's processes, including the setting of compensation packages, as one of the crucial factors that affect the future of the business. Their influence could take two different scenarios; first, they could play the shareholder's role and monitor managers through voting against higher pay that is not effectively linked with firm performance, reducing in this way the misalignment problem of the agency relationship (Ozkan, 2007; Ozkan, 2011; Renneboog and

Zhao, 2011). Second, since these blockholders are more likely to be executives or non-executive directors in other companies, they could have good relationships with the CEOs who, in turn could also be outsiders in other companies. This network of interrelated relationships is very likely to be embedded by the trade-off of favours that evolve between blockholders and CEOs in the firm over time. As a consequence, they may act in favour of CEOs rather than exercising a monitoring role.

With regards to this study's results, Table 6.2 shows no evidence of the impact of institutional investors on the level of CEO pay. The coefficients of all compensation variables are insignificant, meaning that these investors have a passive role in terms of their effect on executive compensation. This result is in line with other UK findings that support the notion that there is no effect of institutional shareholders in UK companies (Cosh and Hughes, 1997; Renneboog and Zhao, 2011). However, there is evidence of a negative effect of the number of these institutional investors on CEO salary and a positive effect on LTCOMP. This suggests that as the number of those shareholders increases, their governance role may be visible in terms of constraining the level of CEO salary and increasing the level of long-term payments. Similarly, Table 6.2 reveals no significant evidence of the effect of individual blockholder ownership on the level of CEO compensation. Also, there is little evidence that the number of those individual blockholders is positively associated with the level of LTCOMP. Thus, the results so far fail to reject the null hypothesis H6.1, that CEO short-term pay is negatively affected by the percentage of NEDs, institutional ownership, and blockholder ownership. Also, the results fail to reject the null hypothesis H6.2, that CEO long-term pay is positively affected by the percentage of NEDs, institutional ownership, and blockholder ownership.

#### **6.3.4. CEO Ownership effect**

The focal debate of managerial ownership is whether it is seen as a tool for minimizing agency problem (agency theory perspective) or a source of power for CEOs to influence the way of setting compensation contracts (managerial power perspective). If the association between the two variables (i.e. ownership and pay) is negative, then the agency framework is active and the aim of managerial ownership is achieved. But, if the association is positive, it is expected that managerial power is active and could harm the effectiveness of CEO pay. Table 6.2 shows the results that

test the relationship between CEO ownership and their pay. Findings reveal that SALARY, CASHCOMP and TOTALCMP are positively and significantly associated with CEO ownership. This result suggests that those managers who own a substantial amount of a company's common shares are more entrenched in their positions and are likely to be offered higher compensation in the form of cash.

According to this research, evidence indicates that the role of the board of directors and institutional shareholders is passive in UK companies. Hence, finding that higher managerial ownership is associated with higher cash and total compensation supports the argument of managerial power theory. This assumption is in line with the findings of Janakiraman *et al.* (2010) who provide evidence that CEO compensation is negatively affected by managerial ownership, but only if the institutional investors' influence is effective. Similarly, Ozkan (2007: 353) states that "*If institutional shareholders and boards of directors are passive, then one can expect that CEOs with higher stock ownership can help themselves and increase their compensation without any intervention. Thus, one would expect a positive relation between the level of CEO compensation and CEOs' ownership*". This also support the theory that top managers may have the discretion to intervene in the process of their compensation contracts setting. The results of analysing managerial ownership and short-term pay reject the null hypothesis H6.3 and show that CEO short-term pay is positively affected by the percentage of CEO ownership.

The results of LTCOMP show a negative association between this form of pay and CEO ownership. This result could be interpreted from two different perspectives: from the firm's point of view and from the CEO's point of view. First, firms may see managerial ownership as a substitute choice for the need for higher long-term compensation in compensation packages. This is because these managers are already shareholders in the firm and hence it is expected that managerial ownership could eliminate the misalignment of interests in the agency relationship. Accordingly, it is expected that managerial ownership is associated with a low level of long-term compensation, since it is assumed to achieve the same goal as long-term compensation.

Second, managerial power theory claims that a higher proportion of companies common shares being owned by top officers leads to managerial entrenchment,

increasing the power of those managers that is expected to damage the quality of corporate governance in these firms. According to the theory, common shares may not play the proper role in motivating managers to maximise firm value. This is because the common shares are non-restricted by future performance targets in the same way as options and LTIPs. Hence, these managers have the sufficient freedom to sell their own shares at any point in time without restrictions. Based on these two explanations, finding that LTCOMP and CEO ownership are inversely related could be interpreted as meaning that these managers are offered less equitable compensation because they already have shares in the firms. However, this may not imply that this action reflects governance applications; especially with the findings that managerial ownership is associated with higher cash pay. Alternatively, these managers may prefer cash compensation over other forms of pay such as options and LTIPs, hence, they might intervene in the process of setting their compensation, decreasing the level of long-term compensation. Ozkan (2007) finds similar evidence that CEO stock ownership is inversely related to the level of equity-based compensation. The results of managerial ownership and long-term pay reject the null hypothesis H6.4 that CEO long-term pay is negatively affected by the percentage of CEO ownership.

### **6.3.5. Tenure and duality effect**

The number of years that are spent in the same company by directors could be a significant factor that influences both executive pay and corporate governance. In theory, director tenure could be seen from two different perspectives; first, it could reflect director experience that evolves over time, resulting in shaping more sophisticated managers in terms of coping with a variety of corporate barriers. Second, director tenure could also be seen as another source of power for those managers in higher positions in the firm. Hence, tenure might pave the way for directors to build their own empire and manipulate the entire firm. The second assumption is supported by empirical literature of corporate governance (see, among others: Fredrickson *et al.* 1988 and Voulgaris *et al.* 2010).

The results relating to CEO tenure are presented in Table 6.2 and reveal a positive and significant relationship between CEO pay and TENURE. In the case of salary, it is acceptable that CEOs who serve for a long period of time are paid a higher base salary. It is well known that the salary in most cases is gradually increases because it

reflects the years of experience in directorship in the company. However, it is more important to analyse the association between CEO tenure and other compensation components. Finding that TENURE has a positive impact on all compensation components may provide an indication of managerial entrenchment, which lies at the heart of the managerial power perspective. This research supports the rent extraction claim of the theory that top officers, who enjoy the most powerful position in the firm and serve for longer period, have the discretion to set their own pay. The agency theory, by introducing the pay for performance scheme may not support the effect of managerial tenure on their pay. Finding a positive association between tenure and CEO pay is in line with the findings of Ozkan (2011) and Janakiraman *et al.* (2010). With regards to DUALITY, which represents only 8% of the whole sample, there is no significant evidence of a relationship between holding two positions (i.e. CEO and chairman) and CEO compensation. This indicates that those CEOs who are also chairmen of the board are not offered higher pay compared to their peers.

#### **6.3.6. Firm and CEO characteristics effect**

Table 6.2 shows the estimated results of the selected control variables, which are related to either firm characteristics such as the firm size of the and performance measurements, or CEO characteristics that could affect the level of their pay, such as age and experience. Findings reveal that all CEO compensation components are positively and significantly correlated by the size of the firm. This suggests that large companies tend to offer higher compensation to their CEOs as a result of either satisfactory performance or in order to give them prestige. There is an active debate in the literature that executive compensation is only determined by firm size, meaning that those CEOs who serve in large companies may be highly paid purely due to being appointed by these large business (Canyon, 1997; Tosi *et al.*, 2000; Doucouliagos *at al.*, 2012).

Furthermore, results show that CEO cash and total pay are increasing function of ROE. Finding this positive association between CEO pay and short-term performance implies that firms tend to reward top managers following superior performance; therefore the return on equity could provide information about past and current managerial performance. Alternatively, it is argued that management could manipulate accounting figures in order to gain higher bonus rewards (Sun, 2012).

Hence, the positive association could merely just a result of earnings management.

Also, evidence suggests that CEO age and experience do not influence the level of compensation, except the case of long-term compensation; findings indicate that this form of CEO compensation is a decreasing function of CEO experience. The negative and significant coefficient of the relationship between LTCOMP and CEOEXP implies that more sophisticated managers are offered less equitable compensation. This is not surprising since all of these results support managerial power theory i.e. the belief that top officers, who have more experience as a director, can intervene in the process of setting their pay. Having said this, long-term compensation is not the preferred choice for those managers due to its risk and the condition that it is linked with future performance.

#### **6.4. Robustness tests (Board size, board structure and firm size)**

This section provides further analysis that tests board size and board structure in interaction with other variables, such as firm size. This analysis includes two dimensions; first, the variable of board size multiplied by board structure (BOARDSIZE×BOARDSTRUC) is tested against all CEO compensation variables. The aim of generating this variable is to increase the robustness of the argument that is related to both board size and board structure. This is because the effect of board size on its own is seen ambiguous if we consider only the results that are presented above, especially when we also consider board structure. Hence, it is worthwhile to see the effect of both ‘board’ variables on CEO pay. Second, this analysis also tests the effect of board size and board structure against three dummy variables of firm size. These include small companies measured by total assets from £0-£119,999, medium companies with total assets £120,000-£700,000 and large companies with total assets above £700,000. The three dummy variables then multiplied once by board size and another by board structure to see such effect of both governance indicators on CEO pay. This results in generating additional six variables; BOARDSIZE×Small, BOARDSIZE×Medium, BOARDSIZE×Large, BOARDSTRUC×Small, BOARDSTRUC×Medium and BOARDSTRUC×Large (all identified in Table 6.3). The reason for expanding the analysis at this stage is to check if firm size matters in conjunction with these two significant governance indicators.

As discussed above, there is a possibility that large firms tend to offer higher compensation and it may simultaneously apply good governance requirements such as increasing the independence of the board.

The results of the SYS-GMM analysis that tests the above relationships is shown in Table 6.3. The table shows that SALARY, BONUS, CASHCOMP and TOTALCOMP are positively associated with BOARD SIZE×BOARDSTRUC, and negatively related to LTCOMP. These results indicate that large boards with a higher percentage of NEDs are associated with higher cash compensation being paid to CEOs and a lower level of long-term compensation. Accordingly, evidence which suggests that CEOs who serve in companies with a board consisting largely of NEDs are expected to be paid higher total compensation that may not be linked with long-term performance. In theory, the optimal compensation contracts should include a significant proportion of equity-based compensation which is linked with future firm performance. Also, higher cash compensation may create the short horizon problem and managerial demotivation for improving long-term performance. Accordingly, this is further support for the argument that there are in realty managerial alliances inside the board and the role of NEDs is not active as an independent governance indicator in UK companies as it should be. Alternatively, it is known that these NEDs may serve on other boards as either executive or non-executive directors, which suggests that those outsiders may be busy and hence they may not be an effective monitoring mechanism for achieving the desired alignment through the compensation structure for this reason too (Core *et al.*, 1999).

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**Table 6.3. The effect of board size and board structure on CEO compensation (interactive analysis)**

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The dependent variables are illustrated in columns from (1)-(5). Column (1) is assigned for SALARY, measured by the natural logarithm of CEO annual base salary. Column (2) is assigned for BONUS, measured by the natural logarithm of CEO annual cash bonus. Column (3) is assigned for CASHCOMP, measured by the natural logarithm of the sum of CEO salary and bonus. Column (4) is assigned for LTCOMP, measured by the natural logarithm of the sum of the cost of options and the cost of LTIPs. Column (5) is assigned for TOATLCOMP, measured by the natural logarithm of the sum of CEO salary, bonus, cost of options, cost of LTIPs and other emolument such as benefit in kind.

The independent variables are illustrated in table's rows. BOARD SIZE×BOARDSTRUC is measured by multiplying board size by board structure, BOARD SIZE×Small is measured by multiplying board size by small companies dummy, BOARD SIZE×Medium is measured by multiplying board size by medium companies dummy, BOARD SIZE×Large is measured by multiplying board size by large companies dummy, BOARDSTRUC×Small is measured by multiplying board structure by small companies dummy, BOARDSTRUC×Medium is measured by multiplying board structure by medium companies dummy and BOARDSTRUC×Large is measured by multiplying board structure by large companies dummy.

Control variables include SIZE measured by natural logarithm of total assets, RISK measured by the CDF of the variance of firm's stock return, ROE measured by the log of the ratio of (net income before preferred dividends - Preferred Dividend Requirement) / last year's common equity, TSR measured by the difference between share price year end-start plus dividend divided by share price year start, log of CEOAGE and log of CEOEXP measured by the total number of years in directorships.

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Independent Variables	(1)	(2)	(3)	(4)	(5)
	SALARY	BONUS	CASHCOMP	LTCOMP	TOTALCOMP
Lag (PAY)	0.0813** (0.0327)	0.190*** (0.0679)	0.209*** (0.0404)	0.0822** (0.0406)	0.155*** (0.0395)
BOARDSIZE×BOARDSTRUC	0.0841*** (0.0266)	0.368** (0.181)	0.134*** (0.0365)	-0.229** (0.116)	0.208*** (0.0550)
BOARDSIZE×Small	-0.164*** (0.0453)	0.0290 (0.219)	-0.127** (0.0574)	-0.149 (0.101)	-0.167** (0.0779)
BOARDSIZE×Medium	-0.132*** (0.0451)	0.139 (0.223)	-0.102* (0.0582)	-0.232*** (0.0891)	-0.123 (0.0756)
BOARDSIZE×Large	-0.0981** (0.0481)	0.128 (0.269)	-0.0720 (0.0605)	-0.165* (0.0858)	-0.0546 (0.0803)
BOARDSTRUC×Small	0.275*** (0.0478)	0.559*** (0.171)	0.457*** (0.111)	0.626*** (0.204)	0.474*** (0.0862)
BOARDSTRUC×Medium	0.291*** (0.0471)	0.641*** (0.178)	0.456*** (0.108)	0.564*** (0.202)	0.500*** (0.0864)
BOARDSTRUC×Large	0.304*** (0.0469)	0.589*** (0.171)	0.474*** (0.103)	0.625*** (0.198)	0.542*** (0.0860)
SIZE	0.177*** (0.0152)	0.259*** (0.0385)	0.211*** (0.0426)	0.330*** (0.0476)	0.266*** (0.0265)
RISK	0.0297 (0.0313)	0.0778 (0.105)	-0.0406 (0.0666)	-0.117 (0.109)	0.00257 (0.0523)
logTSR	-0.0282 (0.0208)	0.298*** (0.0623)	0.0968** (0.0479)	-0.141 (0.108)	0.0476 (0.0353)
logROE	0.0277*** (0.0104)	0.149*** (0.0399)	0.0626** (0.0292)	0.0276 (0.0383)	0.0741*** (0.0172)
logCEOAGE	-0.0156 (0.107)	0.492 (0.438)	-0.110 (0.285)	-0.0228 (0.568)	-0.330* (0.170)
logCEOEXP	0.0356* (0.0203)	-0.0405 (0.0410)	0.0447 (0.0504)	-0.0538 (0.0432)	-0.0245 (0.0295)
Constant	11.36*** (3.220)	-6.509 (5.820)	36.92 (38.07)	0.0388 (7.677)	8.285** (4.002)
Observations	2,361	1,127	2,364	1,281	2,373
Number of id	393	314	393	265	393
Year FE	YES	YES	YES	YES	YES
Industry Dummy	YES	YES	YES	YES	YES
Number of instruments	53	86	102	108	64
Hansen Test P	0.264	0.530	0.358	0.592	0.488
AR(1)	0.00732	0.000	0.000	0.000	0.000
AR(2)	0.514	0.315	0.753	0.390	0.762

All coefficients are based on the SYS-GMM model according to the following model equation:

$$\ln(CEO\ pay)_{it} = \alpha_0 + \beta_y \ln(CEO\ pay)_{it-1} + \beta_x \log(governance)_{it} + \gamma_2 Control + \varepsilon_{it}$$

\*, \*\*, \*\*\* refer to the statistical significance at the 10%, 5% and 1% levels, respectively. The AR(2) test denotes the Arellano-Bond test to check for second order autocorrelation in the residuals. The Hansen test checks for the joint validity of instruments and the absence of overidentification problem. Year and industry dummies are included in the model.

Findings in Table 6.3 also indicate that the size of the firm does not matter in relation to both board size or board structure. In the case of board size, all coefficients for all compensation variables remain negative with different levels of significance according to the three firm sizes. This implies that evidence related to the effect of board size on CEO pay is not sensitive with the size of the firm. Similarly, the effect of board structure does not change within the three groups of firms. The coefficients of all compensation components remain positive and significant, meaning that the argument presented above with regard to the effect of board structure on CEO pay is valid. It seems that the presence of NEDs on the board does not play its desired role and adhere to governance standards in the UK.

## **6.5. Summary and Conclusion**

An active debate has arisen around the sustained increase in CEO pay in recent years. This is driven by the claim that corporate governance practices should play a visible role in constraining this excessive increase in executive compensation, especially if it is associated with poor performance. The agency framework may transform the process of optimal contracting, based on the introduction of pay for performance for managers in top ranking positions as a way to align their interests with those of shareholders. Managerial incentives could play a major role in shaping the future of firm performance only if they are set to produce the prime objective of maximising shareholder wealth. However, top officers can enjoy the power and the discretion of control over the whole firm, including the process of setting their compensation contracts, and this is the main claim of managerial power theory. Considering the two major theories, corporate governance practices could therefore bring about or prevent the two scenarios that are suggested by these competing theories.

The present chapter aims to evaluate corporate governance applications in the UK using a sample of 777 listed companies from different industries, excluding financial and insurance companies. More specifically, the chapter examines the effect of corporate governance indicators on the level of CEO pay for the period from 2000-2012. These governance tools include board size, board structure, institutional investor, individual blockholders, CEO ownership and tenure. The empirical analysis of this chapter is conducted by using the SYSTEM-GMM estimation because it is

considered to be one of the most efficient estimations that can be employed in executive compensation research.

The findings of this chapter contribute to existing literature by providing updated evidence relating to corporate governance and its influence on executive pay in the UK. Findings indicate that board size on its own may not have a significant impact on the level of CEO pay; this is because it is the structure of the board that is the deciding factor in the board's influence on CEO pay. Evidence that is related to board structure, as measured by the percentage of non-executive directors (NEDs), suggests that these directors have a passive role when they should reflect the independence of the board. Moreover, it seems that there are signs of managerial alliances inside the boardroom; findings reveal a positive relationship between the percentage of NEDs and all CEO compensation components, which supports the existing literature in the UK that finds the presence of NEDs to be a passive and relatively ineffective monitoring tool.

Furthermore, by analysing board size and board structure together to determine their combined effect on CEO pay, evidence supports the notion that large boards with a higher percentage of NEDs offer higher cash and total compensation and less long-term compensation to CEOs. This result is inconsistent with the agency theory framework of managerial incentives, which advocates more incentives that are linked with future performance. The findings relating to managerial alliances supports managerial power theory that top officers exercise their power over the board and influence other directors in a way that affects the process of the setting their compensation contracts. However, there is no evidence that the size of the firm matters in conjunction with both board size and board structure to effect CEO pay, which implies that there is no difference between large, medium and small companies in terms of the effect of board size and board structure on the level of CEO pay.

Evidence of ownership structure suggests that there is no influence from either institutional investors or individual blockholders on the level of CEO pay. However, there is evidence relating to the number of shareholders, as opposed to the percentage of shareholder ownership; results indicate that the number of institutional investors and blockholders is negatively associated with CEO salary and positively associated with long-term compensation. Thus, it is worth drawing attention to governance

indicators which could have a key influence on CEO pay in line with the agency framework which are not usually considered. Findings also reveal that CEO cash and total pay are an increasing function of CEO ownership, while long-term pay is found to be inversely related to CEO ownership. This may support managerial power theory in that managers entrenched in their companies have the discretion to set their own pay.

The reason for directing findings towards managerial power theory is justified in that while the role of NEDs and institutional investors are found to be passive in this study, managerial power is expected to visibly affect the level of pay. This is also supported by the results which show that top ranking officers who own a key proportion of the company's shares are also paid higher cash compensation. Moreover, evidence indicates that managerial ownership could be a substitute for interest alignment between managers and shareholders. Findings also indicate that long-term compensation is a decreasing function of managerial ownership, which could be a sign of managerial power since we find that these managers are offered higher compensation in the form of short-term payment and lower risk payments such as options and LTIPs. Eventually, it seems that managers who have a high percentage of ownership and occupy the most powerful positions in the company are not restricted by governance practices in the UK and enjoy a sufficient freedom to engage in the process of their own compensation setting.

Findings also indicate that managerial tenure reflects another image of entrenchment that allows managers to build their own empire. Evidence reveals that all CEO compensation components are positively associated with managerial tenure. This could be another sign of extracting rent by entrenched managers through their compensation packages, exploiting their power that has grown over time while they were serving in the same firm. Moreover, CEO compensation seems to be better predicted by the size of the firm and ROE. In general, it seems that corporate governance indicators do not have a strong enough impact to influence the level of CEO pay in the UK, reflecting a high level of managerial power influence rather than strict governance practices.

# Chapter 7: CEO Pay and Political Connection

## 7.1. Introduction

Politics undoubtedly plays a significant role in shaping the way in which firms perform e.g. firms are constrained by government regulations that must be followed in order to do business. Accordingly firms will usually try to gain accesses to politicians in order to gain either influence with them or competitive advantage (Faccio, 2009; Cooper *et al.*, 2010) i.e. in terms of favourable tax regulations or access to credit (Aslan and Grinstein, 2012). The literature identifies two main forms of political connectedness; first, a firm's political connection can arise from a direct relationship between a member of the board of directors and a specific politician or an entire party (Fisman, 2001; Goldman *et al.*, 2009). Second, a firm's political connection can be provided through donations to political parties that it is believed will have a key impact on the firm's value (Aslan and Grinstein, 2012; Roberts, 1990; Ansolabehere *et al.*, 2004).

Based on the above concepts of political connection, this chapter aims to investigate the relationship between political connection and the level of CEO pay. This study defines political connection purely in relation to firms' donations to a political party because the data on CEO relationships with politicians is not obtainable. This study follows Aslan and Grinstein (2012) who suggest that CEOs have a direct influence over their firm's political contribution and they investigate the effect of political contribution on CEO pay on a US sample. By assuming that CEOs have this network of political ties, it would be expected that politically connected CEOs might enjoy a premium that distinguishes them over other non-politically-connected CEOs. In this case, this would be a sign that firms are willing to invest in CEOs that provide the business with access to more valuable resources and more favourable conditions.

There are three renowned theories that can explain the aim of CEOs being politically connected; namely Agency theory, Resource Dependence Theory and Managerial Power Theory. The agency framework assumes that top managers should be

motivated through different forms of compensation to maximizing firm value. Thus, attracting politically connected CEOs by offering them higher compensation is another way to lead the firm towards good future performance. Resource dependence theory suggests that firms tend to seek the maximization of their power by searching for accesses to external resources. One form of access to additional resources according to this through the benefits which having a political connection brings. Alternatively, managerial power proponents argue that politically related CEOs have additional power to influence the process of setting their own contract. Moreover, that as the power of CEOs increases, governance quality is assumed to weaken and be damaged by their rent extraction behavior. Furthermore, theories of corporate governance take into account the relationship between political connection and the quality of governance, assuming that firms that are politically connected enjoy a good governance environment. This assumption is related to the notion that firms in general may have a political connection that is not related to an individual connection (e.g. some companies keep providing political donation for a long time as its orientation and its management follows this aim of the company). While our assumption is related to CEOs and their political ties, one would expect that managers are highly powerful and may control the firm if not well governed. As a solution, firms may increase the proportion of postponed compensation for these CEOs in order to hedge against the risk that could come from managerial power.

Following the argument above, this chapter raises two main questions; first, are politically connected CEOs offered higher compensation compared to their peers? Second, do these firms apply strong governance practices to offset the managerial power that might be gained by the politically connected CEOs? The study uses a sample of 777 non-financial UK listed firms for the period from 2000-2012. Three pay categories are employed; (1) short-term compensation (STCOMP), measured by the sum of salary, bonus and other annual payments such as benefits in kind, (2) long-term compensation (LTCOMP), measured by the sum of options and LTIPs, and (3) total compensation (TOTALCOMP), measured by the sum of (1) and (2). Additionally, for the pay structure, two categories are used; the percentage of total pay which is made up by STCOMP, and the percentage which is made up of LTCOMP.

Two main models are used to answer these questions; the first model investigates the effect of political connection on the level of CEO pay. The analysis tests the effect of political contribution (amount and dummy) on the level of CEO pay. It also tests the effect of political network of CEOs, if a political contribution is made to more than one party in the same year. Another test for the effect of a link with the most powerful political parties in the UK on CEO pay is applied. This is conducted through generating three dummy variables of political contributions made to (1) The Conservative Party, (2) The Labour Party and (3) The Liberal Democrats<sup>29</sup>. The aim of this investigation is to identify whether CEOs who support government parties enjoy additional premiums in their pay. The second model tests the impact corporate governance measures by board size and board structure on CEO pay (for politically connected CEOs and all CEOs). This model also tests the effect of political connection on the structure of CEO pay in terms of the percentage of short-term compensation and the percentage of long-term compensation. This is to see whether firms tend to hedge against the risk of appointing those powerful managers by increasing their long-term compensation.

This analysis is motivated by the lack of empirical evidence relating to this relationship in the UK. To the knowledge of the author, this is the first study that tests the relationship between political connection and CEO pay in the UK. Additionally, linking strict governance with the political connection of CEOs as an offset to managerial power has not previously been investigated in the literature on executive pay and governance. Very few studies conduct an empirical analysis of political connectedness in relation to firm performance or abnormal return in the USA (see, for example: Faccio, 2006; Goldman *et al.*, 2009; Cooper *et al.*, 2010) And a modest number of papers investigate the association between political contributions and CEO pay in the USA (see for example: Aslan and Grinstein, 2012 and Bertrand *et al.*, 2008). This chapter is expected to fill this gap in the empirical literature which only concentrates on the effect of political connection on firm performance.

The remainder of this chapter will be organized as follows. The first section presents statistics of firms with politically connected CEOs and firms with non-politically

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<sup>29</sup> The thesis has become dated in this respect due to the recent result of the general election 2015. Unfortunately The Liberal Democrats are no longer the third political power in the UK, with only 8 seats.

connected CEOs in terms of level of pay, pay structure and other firms characteristics such as size, risk and performance. The second section discusses the results of the regression analysis of the effect of political connection on the level of CEO pay. The third section discusses the relationship between governance practices and CEO pay in politically connected firms. The fourth section provides further analysis that tests the effect of political connection on the structure of CEO pay. This is followed by the summary and conclusion.

## **7.2. Descriptive statistics**

Table 7.1 indicates that there is a significant difference in pay between politically connected CEOs and non-politically connected CEOs. The average STCOMP is £1,452,000 for CEOs in politically connected firms, while it is £612,000 for those in non-politically connected firms, representing a large variance in cash pay between the two groups. Similarly, the average LTCOMP for CEOs in politically connected firms is £2,110,000 and £463,000 in non-politically connected firms. Accordingly, CEOs average TOTALCOMP in politically connected firms nearly double (£3,672,000) the total pay of their counterparts (£1,156,000). These figures provide an initial insight that firms attract CEOs who have political ties in order to build accesses to a political body. The standard deviation for all variables is relatively high, which reflects the diversity of the sample firms. The difference between the two groups' pay is significant, this is confirmed by the t-statistic test which shows that the difference between the average of the two groups in all compensation variables is statistically significant ( $P=0.000$ ).

**Table 7.1. Summary statistics of CEO compensation level for politically and non-politically connected firms**

	Politically connected CEOs			Non-Politically connected CEOs		
	STCOMP £000	LTCOMP £000	TOTALCOMP £000	STCOMP £000	LTCOMP £000	TOTALCOMP £000
<b>Mean</b>	1,452	2,110	3,672	612	463	1,156
<b>Median</b>	1,123	1,288	2,606	424	0	623
<b>S. Deviation</b>	1,023	2,314	3,020	590	1,058	1,557
<b>Minimum</b>	52	0	51	2	0	23
<b>Maximum</b>	4,735	22,200	25,900	3,882	7,611	10,300
<b>Observations</b>	194	195	194	5,228	5,721	5,272

STCOMP is measured by the sum of annual salary, annual bonus and other annual payments.

LTCOMP is measured by the sum of options and LTIPs.

TOTALCOMP is measured by the sum of STCOMP and LTCOMP.

t-test for the difference between the average of the two groups in all compensation variables: P-Value =0.000\*\*\*

All values are adjusted for inflation using GDP deflator.

Figure 7.1 shows the difference in pay between the two CEO groups over the sample period. Interestingly, it seems that the average total pay for CEOs who are politically connected is fluctuating and might be reflective of the market reactions, crashes and the electoral cycle. In the case of non-politically connected CEOs, the average total pay appears to be more stable over the sample period. The instability of politically connected CEOs' total pay may be able to be explained by the fact that these top officers are paid more performance-linked compensation, which is constrained by vesting conditions and dependent upon the performance of market indicators such as TSR. As a consequence, firms that hire these powerful CEOs may increase the proportion of risk in CEO compensation in order to save the company from being harmed by managerial power. It might also a way to retain those CEOs with a longer tenure for gaining power and a superior reputation that comes from being linking with politicians.

**Figure 7.1. The variation of the average total CEO pay between politically connected CEOs and non-politically connected CEOs**

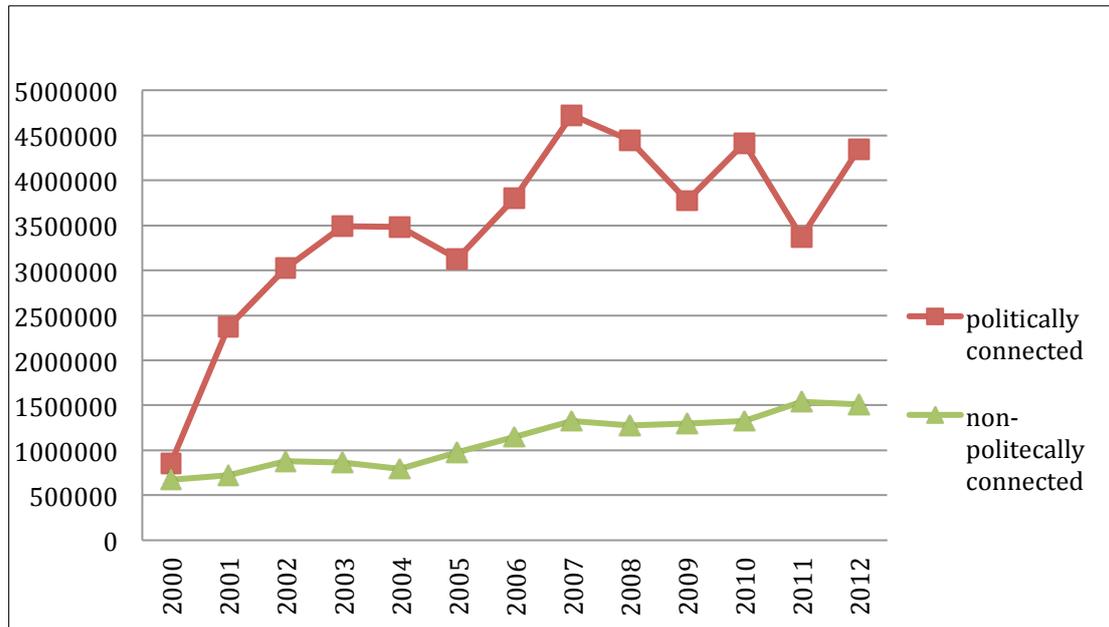


Table 7.2 presents the difference between the structures of pay for both politically connected and non-politically connected CEOs. Notably, CEOs who do not have political ties are offered higher cash compensation packages, where these account for around 77% of total pay. On the other hand, politically connected CEOs seem to be offered balanced compensation packages that are constructed of an average of 55% STCOMP and 43% LTCOMP. By comparing the two CEO groups, it appears that firms increase the proportion of equitable compensation for powerful CEOs due to the uncertainty of the expected return from them being politically connected. Hence firms may design the compensation contracts that are more linked with future performance. This is to ensure that the endowment they pay to keep their political connection is reflected in the returns to the firm. More importantly, the difference between the averages of STCOMP is insignificant between the two groups of (t-test p value = 0.997), whereas it is statistically significant in the case of LTCOMP (t-test p value = 0.000). This demonstrates that firms that hire CEOs with political ties tend to postpone a key proportion of their pay as a weapon against any future risk from being connected with politicians that could harm the business.

	Politically connected CEOs		Non-Politically connected CEOs	
	STCOMP%	LTCOMP%	STCOMP%	LTCOMP%
<b>Mean</b>	55	43	77	23
<b>Median</b>	49	50	94	2
<b>S. Deviation</b>	27	27	26	26
<b>Minimum</b>	4	0	1	0
<b>Maximum</b>	100	91	100	100
<b>Observations</b>	194	194	5,224	5,272

t-test for the difference between average (STCOMP%): P-Value = 0.997  
t-test for the difference between average (LTCOMP%): P-Value =0.000\*\*\*  
All values are adjusted for inflation using GDP deflator

Table 7.3 presents the results relating to the political contributions and the political parties that received them. The average political contribution that is made by companies in the UK is £60,334. In general, firms tend to support more than one political party; this is evident from the average of two political parties being given donations from the same organization during the sample period. Moreover, the maximum number of political parties being supported is ten. There are three possible explanations why firms tend to provide political donation to more than one party either in the same year or during a set period of time. First, firms may seek to build a network of political ties that could improve future performance or increase the power of the firm. Second, firms may diversify in their political donation as a way to decrease uncertainty from being stuck with one party. Third, firms may provide political donations to several parties in order to not be seen to be politically biased especially for those firms with good reputation. The table also demonstrates that politically connected firms represent only 6.5% of the entire sample. This low percentage is attributed to the strict conditions of providing political donations in the UK<sup>30</sup>.

<sup>30</sup> “The Neill Committee recommended that a company wishing to make a donation to a political party should have the prior authority of its shareholders. They further recommended that a donation for these purposes should be defined so that it covered not only monetary donations but other forms of financial benefits, including sponsorship and loans or transactions at a favorable rate” (The funding of political parties in the United Kingdom, 1999).

	<b>Mean</b>	<b>Median</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>N</b>
<b>TPC £</b>	60,334	51,947	45,931	335	120,221	195
<b>NPP</b>	2	1	2	1	10	195
<b>Number of PCFs</b>	51					
<b>Percentage of PCFs</b>	6.5%					
<b>PC £(conservative)</b>	769,696.62					
<b>PC £(Labour)</b>	377,365					
<b>PC £(Liberal Democrat)</b>	122,876					

TPC: Total political contribution.  
NPP: Number of political parties received contribution.  
PCFs: Politically Connected Firms refers to firms with politically connected CEOs  
All values are adjusted for inflation using GDP deflator.

Table 7.3 also shows that the Conservative Party has received around £770 thousand, while the Labour Party has received nearly half this. Figure 7.2 shows the political contributions made to the three main UK parties over the sample period. In general, it seems that Labour received the highest amount of companies' political donations in 2005, the year they won the general election. By 2010, it seems that Conservative Party managed to gain the higher portion of firms' donation and they won the general election that year.

**Figure 7.2 Political Contributions made to the three leading parties in the UK: Conservative, Labour and Liberal Democrat.**

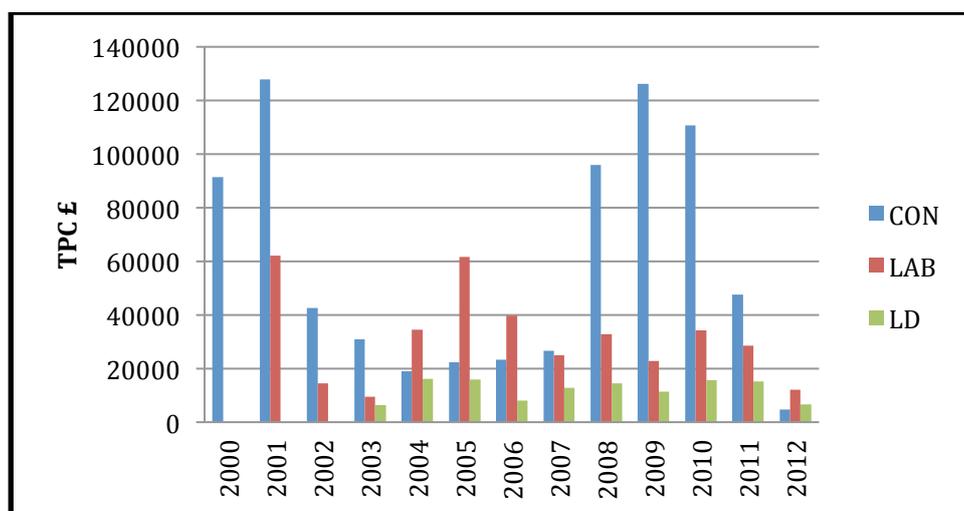


Table 7.4 presents the statistics relating to the firm characteristics of politically connected firms and non-politically connected firms. The table shows that the key distinction between the two groups of firms is their size, with politically connected firms having a mean value of £16 million where non-connected firms have a mean value of only £3 million. This result is statistically significant, meaning that large firms tend to attract managers who have political network in order to obtain informational accesses to government policies, power and lower tax rate (Faccio 2010). With regards to firm performance, the table shows that politically connected firms seem to perform slightly better than non-politically connected firms. However, the t test is reported statistically significant in the case of accounting-based measures (i.e. EPS and ROE), while it is insignificant in the case of market-based measures (i.e. TSR and TOBINSQ). Appendix (6) shows explicitly the difference in short-term performance between politically connected firms and non-politically connected firms.

**Table 7.4. Summary statistics of firm characteristics for politically and non-politically connected firms**

	Politically connected firms				Non-Politically connected firms			
	SIZE* (£000)	ROE	TSR	RISK	SIZE* (£000)	ROE	TSR	RISK
<b>Mean</b>	16,000	2.88	0.03	0.44	3,391	2.70	-0.02	0.48
<b>Median</b>	6,401	2.84	0.10	0.36	264	2.82	0.08	0.43
<b>SD</b>	23,000	0.91	0.38	0.28	16,400	1.05	0.60	0.27
<b>Min</b>	25	-0.33	-2.21	0.02	8	-4.61	-4.61	0.01
<b>Max</b>	315,000	5.87	1.46	0.97	173,000	8.88	2.91	0.99
<b>N</b>	195	173	193	174	5649	4061	5473	4179

\*All values are adjusted for inflation using GDP deflator.

### **7.3. The impact of political connection on the level of CEO pay**

This section examines whether or not politically connected CEOs are paid more than their peers. The testable hypotheses are recalled as follows:

**H7.1: *Ceteris paribus*, politically connected CEOs are paid higher compensation.**

*H7.1a: CEO total pay level is positively related to political contributions, number of political parties supported and political dummy.*

*H7.1b: CEO total pay level is positively related to political contributions that are made for supporting top leading political parties in the UK.*

The model that is used to test the above hypotheses is designed as follows:

$$\ln(\text{CEO pay})_{it} = \alpha_0 + \beta_y \ln(\text{CEO pay})_{it-1} + \beta_x \log(\text{Political})_{it-1} + \gamma_z \text{Control} + \varepsilon_{it}$$

The results presented in Table 7.5 summarize the relationship between political connections and CEO cash compensation. The regression results in columns (1) and (2) show that politically connected CEOs enjoy higher pay compared to their peers. This is confirmed by the significant coefficient of the variable political contribution (amount and dummy-1/0) if the firm offers any contribution to political parties. Similarly, the results presented in Table 7.6, columns (1) and (2) show positive and significant coefficients of political contribution (amount and dummy-1/0) in association with CEO long-term compensation. This implies that politically connected CEOs are well bound through postponing a significant amount of their compensation to the future. The dummy variable of political contribution also demonstrates that those CEOs are offered higher equitable compensation compared to their peer group. Consequently, results in Table 7.7 for total compensation reveal the same positive and significant coefficients in terms of these two variables of political connection.

Three theories, the Agency Theory, Resource Dependence Theory and Managerial Power Theory support the results of the above analysis, however, at this stage it is not clear which theory will offer the best explanation. According to agency theory, firms in the UK seem to motivate politically connected (and perhaps talented) CEOs by paying them premium cash compensation in order to motivate them towards maximizing firm value. On the other hand, Resource Dependence Theory suggests that firms in UK will seek to maximize their power by searching for accesses to external resources. One of the ways to achieve this is by having access to politically connected CEOs and encouraging them to join the firm by offering them an above

market average compensation deal. The Managerial Power Theory suggests that politically connected CEOs are likely to have additional power to influence the process of setting their own contract. Accordingly, firms may attract these powerful CEOs by offering them a significant amount of cash payment, but they also hedge against the uncertainty of being connected with politicians. For example, empirical literature shows that firms are negatively affected in terms of performance if supported politicians suddenly die (Robert, 1990). These unexpected events play a vital role in the way that firms construct the compensation packages of politically connected managers. Moreover, as these CEOs are expected to have high power and influence, firms may increase the level of long-term compensation as a way to offset the managerial power effect. These findings are consistent with the findings of Aslan and Grinstein (2012) who provide evidence related to US firms.

Estimation results in Tables 7.5, 7.6 and 7.7 (columns (3) and (4)) reveal that the number of political parties supported by a firm is positively associated with CEO pay, suggesting that CEOs tend to provide political donations to several parties in the same year as a way to increase their political network. As this network increases, it seems that CEOs gain additional cash and stock rewards for their evolving network. This is confirmed by the dummy variable for the number of political parties, which also correlates with positive and significant coefficients for cash and total compensation variables. In theory, finding that CEO cash pay is an increasing function of the number of political parties being supported indicates that firms are willing to increase cash payment for CEOs. This is because of their acquisition of additional merit that distinguishes them from other CEOs who have a more limited political network. The reason why these firms bear additional agency costs is that this political network could have substantial benefits for the whole business, such as access to and perhaps influence over future government policies. Thus, it is rational that these firms pay higher cash compensation in order to attract these powerful managers and retain them in the company.

**Table 7.5. SYS-GMM regression of CEO short-term compensation and political connections**

The dependent variable is STCOMP, measured by the sum of the CEOs' base salary and bonus and other annual payments. Column (1) is assigned for the lag of TPC, measured by the total amount of political contributions. Column (2) is assigned for POLITICAL, which is a dummy variable that assigns 1 for a political contribution by a firm and 0 otherwise. Column (3) is assigned for the lag of NNP, measured by the number of political parties who receive contributions. Column (4) is assigned for NPP dummy variable, which assigns 1 for firms that provide political contribution for more than one political party and 0 otherwise. Column (5) is assigned for the three UK leading parties; CONSERVATIVE dummy for firms that contributed support to the Conservative Party, LABOUR dummy for firms that contributed support to the Labour Party and LIB DEMOCRAT dummy for firms that contributed support to the Liberal Democrat Party. Control variables include SIZE, measured by natural logarithm of total assets, RISK, measured by the CDF of the variance of the firm's stock return, ROE, measured by the log of the ratio of (net income before preferred dividends - Preferred Dividend Requirement) / last year's common equity, logTSR, measured by the difference between share price year end – start plus dividend, divided by share price year start, log of CEOAGE, logBOARDSIZE, measured by the logarithm of total number of directors in the board and logBOARDSTRUC, measured by the percentage of non-executive directors serving in the board.

VARIABLES	(1) GMM-SYS	(2) GMM-SYS	(3) GMM-SYS	(4) GMM-SYS	(5) GMM-SYS
LnSTCOMP <sub>(t-1)</sub>	0.190*** (0.0398)	0.176*** (0.0363)	0.184*** (0.0385)	0.151*** (0.0337)	0.203*** (0.0341)
TPC <sub>(t-1)</sub>	0.0000014** (0.0000006)				
POLITICAL <sup>d</sup>		0.0764** (0.0365)			
LogNPP <sub>(t-1)</sub>			0.132*** (0.0495)		
NPP <sup>d</sup>				0.170** (0.0724)	
CONSERVATIVE <sup>d</sup>					0.221** (0.0948)
LABOUR <sup>d</sup>					0.195** (0.0974)
LIB DEMOCRAT <sup>d</sup>					0.0157 (0.0671)
SIZE	0.225*** (0.0193)	0.201*** (0.0187)	0.213*** (0.0194)	0.223*** (0.0183)	0.200*** (0.0183)
RISK	0.678* (0.375)	-0.00144 (0.0394)	0.269 (0.379)	-0.0304 (0.0392)	-0.0173 (0.0389)
LogTSR	0.0810** (0.0321)	0.107*** (0.0289)	0.0804** (0.0327)	0.106*** (0.0285)	0.116*** (0.0292)
LogROE	0.0657*** (0.0142)	0.0646*** (0.0144)	0.0632*** (0.0145)	0.0641*** (0.0132)	0.0673*** (0.0129)
LogCEOAGE	-0.0969 (0.111)	-0.0913 (0.116)	-0.114 (0.111)	-0.137 (0.101)	-0.128 (0.101)
LogBOARDSIZE	-0.148*** (0.0576)	-0.100* (0.0551)	-0.109* (0.0596)	-0.121** (0.0580)	-0.0881 (0.0548)
LogBOARDSTRUC	0.276*** (0.0593)	0.300*** (0.0572)	0.283*** (0.0595)	0.344*** (0.0578)	0.329*** (0.0580)
Constant	8.181** (3.998)	8.369* (4.274)	8.767** (3.820)	8.198*** (2.486)	8.227*** (2.901)
Observations	2,418	2,418	2,418	2,418	2,418
Number of id	395	395	395	395	395
Year FE	YES	YES	YES	YES	YES
Industry Dummy	YES	YES	YES	YES	YES
Number of instruments	54	91	60	67	67
Hansen Test P	0.274	0.326	0.166	0.448	0.117
AR(1)	0.000	0.000	0.000	0.000	0.000
AR(2)	0.849	0.814	0.947	0.680	0.970

All coefficients are based on the SYS-GMM model according to the following model equation:

$$\ln CEO\ pay\ level_{it} = \alpha_0 + \beta_y (\ln CEO\ PAY)_{yit-1} + \beta_x political_{xit-1} + \beta_z Control_{zit} + \varepsilon_{it}$$

d: dummy variable

\*, \*\*, \*\*\* refer to the statistical significance at the 10%, 5% and 1% levels, respectively. The AR(2) test denotes the Arellano-Bond test to check for second order autocorrelation in the residuals. The Hansen test checks for the joint validity of instruments and the absence of overidentification problem. Year and industry dummies are included in the model.

**Table 7.6. SYS-GMM regression of CEO long-term compensation and political connections**

The dependent variable is LTCOMP, measured by the sum of the value of the CEOs' options and LTIPs. Column (1) is assigned for the lag of TPC, measured by the total amount of political contributions. Column (2) is assigned for POLITICAL, which is a dummy variable that assigns 1 for a political contribution by a firm and 0 otherwise. Column (3) is assigned for the lag of NNP, measured by the number of political parties who receive contributions. Column (4) is assigned for NPP dummy variable, which assigns 1 for firms that provide a political contribution to more than one political party and 0 otherwise. Column (5) is assigned for the three UK leading parties; CONSERVATIVE dummy for firms that contribute support to the Conservative Party, LABOUR dummy for firms that contributed support to the Labour Party and LIB DEMOCRAT dummy for firms that contributed support to the Liberal Democrat Party. Control variables include SIZE, measured by natural logarithm of total assets, RISK, measured by the CDF of the variance of the firm's stock return, ROE, measured by the log of the ratio of (net income before preferred dividends - Preferred Dividend Requirement) / last year's common equity, logTSR measured by the difference between share price at year end and share price at year start, plus dividend, divided by share price at year start, log of CEOAGE, logBOARDSIZE, measured by the logarithm of total number of directors in the board and logBOARDSTRUC measured by the percentage of non-executive directors serving on the board.

VARIABLES	(1) GMM-SYS	(2) GMM-SYS	(3) GMM-SYS	(4) GMM-SYS	(5) GMM-SYS
LnLTCOMP <sub>(t-1)</sub>	0.0109 (0.0267)	0.0753** (0.0355)	0.0400 (0.0317)	0.0460 (0.0352)	0.0450 (0.0348)
TPC <sub>(t-1)</sub>	0.000003*** (-0.0000007)				
POLITICAL <sup>d</sup>		0.135** (0.0645)			
LogNPP <sub>(t-1)</sub>			0.402*** (0.118)		
NPP <sup>d</sup>				0.172 (0.404)	
CONSERVATIVE <sup>d</sup>					-3.621*** (0.0995)
LABOUR <sup>d</sup>					-0.484*** (0.128)
LIB DEMOCRAT <sup>d</sup>					0.105 (0.171)
SIZE	0.411*** (0.0553)	0.270*** (0.0666)	0.354*** (0.0669)	0.410*** (0.0622)	0.165** (0.0758)
RISK	-0.0895 (0.111)	0.260 (0.173)	-0.144 (0.135)	-0.492 (0.406)	0.128 (0.142)
LogTSR	-0.0917* (0.0509)	-0.0446 (0.0598)	-0.179** (0.0793)	-0.0700 (0.205)	-0.0479 (0.0875)
LogROE	0.00247 (0.0354)	0.0126 (0.0321)	0.0158 (0.0444)	0.0461 (0.0547)	-0.099*** (0.0375)
LogCEOAGE	-0.425 (0.375)	-0.0452 (0.367)	-0.0522 (0.501)	-0.235 (0.541)	0.559 (0.645)
LogBOARDSIZE	-0.396** (0.160)	0.348 (0.294)	-0.420** (0.190)	-0.242 (0.295)	0.188 (0.467)
LogBOARDSTRUC	0.600*** (0.183)	-0.581 (0.414)	0.551** (0.239)	0.625** (0.293)	0.179 (0.483)
Constant	6.488 (46.04)	12.06 (12.66)	31.58 (51.73)	28.22 (71.59)	-173.9 (176.5)
Observations	1,288	1,288	1,288	1,288	1,288
Number of id	265	265	265	265	265
Year FE	YES	YES	YES	YES	YES
Industry Dummy	YES	YES	YES	YES	YES
Number of instruments	97	99	89	82	75
Hansen Test P	0.370	0.757	0.500	0.543	0.248
AR(1)	0.000	0.000	0.000	0.000	0.000
AR(2)	0.927	0.328	0.904	0.838	0.779

All coefficients are based on the SYS-GMM model according to the following model equation:

$$\ln CEO\ pay\ level_{it} = \alpha_0 + \beta_y (\ln CEO\ PAY)_{yit-1} + \beta_x political_{xit-1} + \beta_z Control_{zit} + \varepsilon_{it}$$

d: dummy variable

\*, \*\*, \*\*\* refer to statistical significance at the 10%, 5% and 1% levels, respectively. The AR(2) test denotes the Arellano-Bond test to check for second order autocorrelation in the residuals. The Hansen test checks for the joint validity of instruments and the absence of overidentification problem. Year and industry dummies are included in the model.

**Table 7.7. SYS-GMM regression of CEO total compensation and political connections**

The dependent variable is TOTALCOMP, measured by the sum of the CEOs' cash salary, cash bonus, option value LTIPs value and other payments. Column (1) is assigned for the lag of TPC, measured by the total amount of political contributions. Column (2) is assigned for POLITICAL which is a dummy variable that assigns 1 for a political contribution by a firm and 0 otherwise. Column (3) is assigned for the lag of NNP, measured by the number of political parties who receive contributions. Column (4) is assigned for NPP dummy variable, which assigns 1 for firms that provide a political contribution to more than one political party and 0 otherwise. Column (5) is assigned for the three UK leading parties; CONSERVATIVE dummy for firms that contributed support to the Conservative Party, LABOUR dummy for firms that contributed support to the Labour Party and LIB DEMOCRAT dummy for firms that contributed support to the Liberal Democrat Party. Control variables include SIZE, measured by natural logarithm of total assets, RISK, measured by the CDF of the variance of firm's stock return, ROE, measured by the log of the ratio of (net income before preferred dividends - Preferred Dividend Requirement) / last year's common equity, logTSR, measured by the difference between share price at year end – start plus dividend divided by share price at year start, log of CEOAGE, logBOARDSIZE, measured by the logarithm of total number of directors in the board and logBOARDSTRUC, measured by the percentage of non-executive directors serving in the board.

VARIABLES	(1) GMM-SYS	(2) GMM-SYS	(3) GMM-SYS	(4) GMM-SYS	(5) GMM-SYS
LnLTCOMP <sub>(t-1)</sub>	0.127*** (0.0439)	0.134*** (0.0407)	0.131*** (0.0474)	0.109** (0.0450)	0.138*** (0.0410)
TPC <sub>(t-1)</sub>	0.000005*** (-0.000001)				
POLITICAL <sup>d</sup>		0.260** (0.109)			
LogNPP <sub>(t-1)</sub>			0.197** (0.0825)		
NPP <sup>d</sup>				0.232** (0.105)	
CONSERVATIVE <sup>d</sup>					0.426** (0.214)
LABOUR <sup>d</sup>					0.314** (0.158)
LIB DEMOCRAT <sup>d</sup>					0.169 (0.123)
SIZE	0.292*** (0.0296)	0.282*** (0.0291)	0.304*** (0.0313)	0.319*** (0.0319)	0.282*** (0.0299)
RISK	-0.301 (0.382)	-0.0126 (0.0562)	0.107 (0.483)	-0.0290 (0.0579)	-0.0223 (0.0563)
LogTSR	0.0534 (0.0361)	0.0588 (0.0368)	0.0450 (0.0435)	0.0668* (0.0372)	0.0395 (0.0382)
LogROE	0.0797*** (0.0192)	0.0833*** (0.0199)	0.0760*** (0.0205)	0.0769*** (0.0191)	0.0854*** (0.0204)
LogCEOAGE	-0.458*** (0.148)	-0.378*** (0.146)	-0.442*** (0.148)	-0.426*** (0.148)	-0.361** (0.164)
LogBOARDSIZE	-0.0679 (0.0795)	-0.0667 (0.0768)	-0.108 (0.0801)	-0.105 (0.0750)	-0.0660 (0.0812)
LogBOARDSTRUC	0.540*** (0.0855)	0.521*** (0.0781)	0.506*** (0.0864)	0.558*** (0.0828)	0.564*** (0.0967)
Constant	7.941** (3.367)	7.219** (3.197)	8.765** (3.692)	7.155** (3.327)	7.832* (4.360)
Observations	2,427	2,427	2,427	2,427	2,427
Number of id	395	395	395	395	395
Year FE	YES	YES	YES	YES	YES
Industry Dummy	YES	YES	YES	YES	YES
Number of instruments	54	59	60	49	87
Hansen Test P	0.448	0.282	0.258	0.418	0.160
AR(1)	0.000	0.000	0.000	0.000	0.000
AR(2)	0.772	0.956	0.970	0.793	0.988

All coefficients are based on the SYS-GMM model according to the following model equation:

$$\ln CEO\ pay\ level_{it} = \alpha_0 + \beta_y (\ln CEO\ PAY)_{yit-1} + \beta_x political_{xit-1} + \beta_z Control_{zit} + \varepsilon_{it}$$

d: dummy variable

\*, \*\*, \*\*\* refer to statistical significance at the 10%, 5% and 1% levels, respectively. The AR(2) test denotes the Arellano-Bond test to check for second order autocorrelation in the residuals. The Hansen test checks for the joint validity of instruments and the absence of overidentification problem. Year and industry dummies are included in the model.

However, this evolving network could be also a negative factor for the company if not strictly controlled. According to managerial power theory, highly powerful managers could harm the quality of corporate governance, affecting the future performance of the firm because they are more likely to pursue personal goals which may not be in line with shareholders interests. The agency framework provides a solution to this problem by suggesting linking pay with performance through various forms of pay including cash bonuses, options and LTIPs. Increasing the equity-based compensation that is linked with long-term performance measures may diminish the effect of managerial power that comes from being connected with politicians and achieve the desired alignment between managers and shareholders. Overall, evidence so far rejects the null hypothesis H7.1a that CEO total pay level is positively related to political contributions, number of political parties supported and political dummy.

Results in Tables 7.5 and 7.7, column (5) further reveal that the connection to large political parties in the UK has a positive influence on CEO cash and total pay. The coefficients of the variables CONSERVATIVE and LABOUR in CEO short-term and total compensation are both positive and statistically significant; implying that the power of the political party to which the CEO is connected does matter and is reflected in higher pay. Also, the results in Table 7.6, column (5), provide evidence that those CEOs who support Conservative and Labour are offered less equity-based compensation. The coefficients of the dummy variables CONSERVATIVE and LABOUR are both negative and statistically significant. This suggests that connecting with key government parties may add value to both CEOs and the entire firm. This is because these political parties control business policies that eventually affect firm future. Hence, finding indirect accesses to or influence over these policies could have significant benefits to the future investment choices of the firm.

Resource dependence theory explains these findings by suggesting that firms need to decrease future uncertainty by searching for individuals who could open accesses to external resources. These individuals, who are distinguished over their peers by having political ties, are aware of this merit and they are highly likely to exploit having their connections with the most powerful political parties. Furthermore, agency theory claims that top managers should be paid in ways that reduce the agency conflict and motivate managers to maximize firm value. Accordingly, it seems

that firms attract politically connected CEOs by offering them higher cash compensation and lower risk compensation in a way that could convince them to serve in the company, since these managers are also identified by agency theory as being more risk averse individuals. Alternatively, managerial power theory explains these results by suggesting that CEOs who have political ties with the Conservatives and the Labour are expected to be very powerful managers and hence they may intervene in the process of their compensation setting, increasing in this way their short-term payment and decreasing the uncertain payment of their compensation that are linked with future performance. These findings reject the null hypothesis H7.1b that CEO total pay is positively related to political contributions that are made for supporting top political parties in the UK. The rejection of the null hypotheses H7.1a and H7.1b leads to a rejection to the null hypothesis H7.1, meaning that politically connected CEOs are paid higher compensation compared to their peers in the UK.

#### **7.4. The impact of corporate governance on the compensation level of politically connected CEOs**

The results presented in Table 7.8 show the effect of corporate governance practices in connection with the political factor on the level of CEO pay. The table shows that the corporate governance proxy in firms with a political connection may play a significant role against any managerial power effect. This is confirmed by the significant and negative coefficient of the variable  $\text{BOARDSIZE} \times \text{POL}$  on CEO short-term pay. Also, the same variable is found to have a significant and positive coefficient with CEO long-term pay. This result indicates that large boards in firms with a politically connected CEO achieve their monitoring roles by constructing compensation contracts that include a key proportion of long-term compensation. Furthermore, the other proxy of governance  $\text{BOARDSTRUC} \times \text{POL}$  provides further evidence that corporate governance in these firms is well applied. The coefficient of this variable is negative but insignificant in the case of short-term compensation, while it is positive and statistically significant in the case of long-term pay. This implies that in firms with politically connected CEOs, the board of director that are composed of a higher number of NEDs have an active influence in terms of postponing a significant amount of CEO compensation to the future.

In the theoretical context, these findings further confirm that firms with political connections through their CEOs are aware that their managers are very powerful. Hence, these managers could harm the system of corporate governance if not bound to future performance. Managerial power theory assumes that a powerful manager could set their own compensation and extract more rent that maximizes their wealth, instead of maximising shareholders wealth. The optimal contracting approach that is introduced by the agency theory may provide a framework that could offset the effect of managerial rent extraction behaviour. Firms are indeed willing to apply this approach by constructing CEO compensation so that it has more long-term emoluments in a way that constrain the freedom of managers. Evidence suggests that firms are willing to apply strict corporate governance practices if they have CEOs with a network of political ties.

These findings are supported by the results in the same table in the case of board structure as a control variable for all sample firms. The coefficients of BOARDSTRUC are positive and statistically significant in the three compensation variables. This indicates that CEO short- and long-term compensation are positively associated with the percentage of NEDs. In theory, those NEDs represent the independence of the board, hence, they are expected to decrease the level of short-term component and increase the level of postponed compensation that are linked with future performance. However, the results suggest that those NEDs may not have an active role in constructing the best compensation contracts that would achieve the alignment of the interests. This may be attributed to the social relationships that evolve between executive and non-executive directors inside the boardroom. Alternatively, those NEDs tend to be busy due to serving in several boards and this may affect their availability to concentrate on one case of compensation contract setting.

**Table 7.8. SYS-GMM regressions of CEO compensation and corporate governance for politically connected firms**

The dependent variables are illustrated in columns (1), (2) and (3). Column (1) is assigned for STCOMP, measured by the natural logarithm of the sum of CEO salary and bonus. Column (2) is assigned for LTCOMP, measured by the natural logarithm of the sum of the cost of options and the cost of LTIPs. Column (3) is assigned for TOATLCOMP, measured by the natural logarithm of the sum of CEO salary, bonus, cost of options, cost of LTIPs and other emolument such as benefits in kind. The independent variables include BOARDSIZE×POL, measured by the log of board size multiplied by the political dummy variable and BOARDSTRUC×POL, measured by the log of board structure multiplied by the political dummy variable. Control variables include SIZE, measured by natural logarithm of total assets, RISK, measured by the CDF of the variance of firm's stock return, ROE, measured by the log of the ratio of (net income before preferred dividends - Preferred Dividend Requirement) / last year's common equity, logTSR, measured by the difference between share price at year end and start plus dividend divided by share price at year start, log CEOAGE, logBOARDSIZE, measured by the logarithm of the total number of directors in the board and logBOARDSTRUC, measured by the percentage of non-executive directors serving on the board.

VARIABLES	(1) STCOMP	(2) LTCOMP	(3) TOTALCOMP
LAG	0.192*** (0.0276)	0.0782*** (0.0278)	0.162*** (0.0231)
BOARDSIZE X POL	-0.0312** (0.0145)	0.0910*** (0.0238)	0.101*** (0.0148)
BOARDSTRUC X POL	-0.00334 (0.0101)	0.0530*** (0.0145)	0.0595*** (0.00912)
LnSIZE	0.251*** (0.0405)	0.390*** (0.0254)	0.283*** (0.0222)
RISK	0.0685 (0.0628)	-0.144* (0.0816)	-0.0200 (0.0420)
LogTSR	0.0876 (0.0718)	0.0483 (0.105)	0.0391 (0.0659)
LogROE	0.0663*** (0.0146)	0.0156 (0.0347)	0.0626*** (0.0161)
LogCEOAGE	-0.0287 (0.0990)	-0.374** (0.183)	-0.254** (0.113)
LogBOARDSIZE	-0.371*** (0.0713)	-0.0703 (0.103)	-0.102* (0.0614)
LogBOARDSTRUC	0.499*** (0.0808)	0.357*** (0.134)	0.559*** (0.0676)
Constant	5.427* (2.838)	1.212 (7.451)	6.763** (3.349)
Observations	2,418	1,288	2,427
Number of id	395	265	395
Year FE	YES	YES	YES
Industry Dummy	YES	YES	YES
Number of instruments	76	103	103
Hansen Test P	0.237	0.505	0.267
AR(1)	0.000	0.000	0.000
AR(2)	0.994	0.478	0.722

All coefficients are based on the SYS-GMM model according to the following model equation:

$$\ln CEO\ pay\ level_{it} = \alpha_0 + \beta_y (\ln CEO\ PAY)_{yit-1} + \beta_x governance \times political_{xit} + \beta_z Control_{zit} + \varepsilon_{it}$$

d: dummy variable

\*, \*\*, \*\*\* refer to statistical significance at the 10%, 5% and 1% levels, respectively. The AR (2) test denotes the Arellano-Bond test to check for second order autocorrelation in the residuals. The Hansen test checks for the joint validity of instruments and the absence of overidentification problem. Year and industry dummies are included in the model.

## 7.5. The impact of corporate governance on the structure of compensation of politically connected CEOs

This section provides further evidence relating to the relationship between the structure of CEO pay and political connections. The testable hypotheses are recalled as follows:

**H7.2: *Ceteris paribus*, politically connected CEOs are expected to be strictly governed.**

*H7.2a: the ratio of short-term compensation is negatively associated with political contribution, number of political parties and political dummy.*

*H7.2b: the ratio of long-term compensation is positively associated with political contribution, number of political parties and political dummy.*

The model that is used to test the above hypotheses is designed as follows:

$$\ln(\text{CEO pay structure})_{it} = \alpha_0 + \beta_y \ln(\text{CEO pay structure})_{it-1} + \beta_x \log(\text{Political})_{it} + \gamma_z \text{Control} + \varepsilon_{it}$$

This analysis is needed to determine if the structure of CEO pay reflects the governance behaviour of firms with politically connected CEOs. Theoretically speaking, CEO compensation contracts that include a higher percentage of long-term compensation implies that these firms bind their CEOs into longer periods of performance, solving for the short horizon problem and providing a sign of good governance. Thus, it is expected that firms with politically connected CEOs will pay higher compensation, but in the form of conditional payments that are linked with future firm performance.

The results displayed in Table 7.9 columns (1), (2) and (3) summarize the relationship between the percentage of CEO's short-term compensation and political connections. The results in the same table, columns (4), (5) and (6) show the relationship between the percentage of CEO's long-term compensation and political connections. The result in column (1) provides evidence of the relationship between the percentage of CEO's short-term pay and the amount of funds donated to political parties; the coefficient of the TPC variable is negative and statistically significant. This implies that the more the donations that are given to the political parties, the lower the cash

payments given to the CEO. Column (2) in the same table indicates that politically connected CEOs are offered lower short-term compensation compared to their peers. This is confirmed by the significant and negative coefficient of the variable political dummy (1/0) if the firm offers any political contribution to political parties in UK. The results in the column (3) here reveal that a connection to more than one party has a negative implication on CEO's short-term pay. The coefficient of the NPP variable is negative and statistically significant, implying that the larger the political network of CEOs, the lower their cash pay. These results are consistent with H7.2a that the ratio of short-term compensation is negatively associated with political contributions, number of political parties supported and political dummy.

The results in the same table, columns (4), (5) and (6) provide evidence that political connection has a positive impact on the percentage of CEO's long-term compensation. The coefficients of the variables TPC, NPP and POLITICAL dummy (1/0) are positive and statistically significant, meaning that politically connected CEOs are offered compensation packages that consist of a higher percentage of long-term compensation components. Moreover, these forms of pay seem to be increased as the political network of the CEO evolves. Overall, findings in Table 7.9 further reinforce that firms which hire politically connected CEOs concentrate on how the compensation packages of these powerful managers is structured. Evidence suggests that these firms hedge against the power of these managers by decreasing short-term pay and increasing the proportion of long-term payments. These results are consistent with H7.2b that the ratio of long-term compensation is positively associated with political contribution, number of political parties supported and political dummy. The rejection of the null hypothesis H7.2a and H7.2b leads to the rejection of the null hypothesis H7.2 that politically connected CEOs are strictly governed.

**Table 7.9. SYS-GMM regression of the structure of CEO pay and political connections**

The dependent variables are %STCOMP, measured by the percentage of cash compensation and %LTCIMP, measured by the percentage of long-term compensation. Column (1) is assigned for the lag of TPC, measured by the total amount of political contributions. Column (2) is assigned for the lag of NNP, measured by the number of political parties who receive political contributions. Column (3) is assigned for POLITICAL, a dummy variable assigned the value of 1 for firms which make political contributions and 0 otherwise. Control variables include SIZE, measured by natural logarithm of total assets, RISK, measured by the CDF of the variance of firm's stock return, ROE, measured by the log of the ratio of (net income before preferred dividends - Preferred Dividend Requirement) / last year's common equity, TSR, measured by the difference between share price year end – start, plus dividend divided by share price year start, log of CEOAGE, logBOARDSIZE, measured by the logarithm of total number of directors in the board and logBOARDSTRUC, measured by the percentage of non-executive directors serving on the board.

VARIABLES	%STCOMP			%LTCIMP		
	(1)	(2)	(3)	(4)	(5)	(6)
	GMM-SYS	GMM-SYS	GMM-SYS	GMM-SYS	GMM-SYS	GMM-SYS
LAG	0.129** (0.0503)	0.128** (0.0502)	0.140*** (0.0492)	0.0729*** (0.0269)	0.0588** (0.0269)	0.0707** (0.0285)
TPC <sub>(t-1)</sub>	-0.000002** (0.0000009)			0.0000006* (0.0000003)		
logNPP <sub>(t-1)</sub>		-0.0990** (0.0488)			0.0687*** (0.0257)	
POLITICAL <sup>d</sup>			-0.142** (0.0708)			0.0526** (0.0262)
SIZE	-0.0653*** (0.0150)	-0.0667*** (0.0152)	-0.0692*** (0.0148)	0.101*** (0.0143)	0.0948*** (0.0141)	0.0873*** (0.0136)
WRISK	0.337 (0.232)	0.344 (0.231)	0.000164 (0.0367)	-0.0697 (0.0437)	-0.0369 (0.0397)	-0.0136 (0.0545)
logTSR	0.0316 (0.0256)	0.0301 (0.0256)	0.0360 (0.0252)	-0.128*** (0.0320)	-0.107*** (0.0369)	-0.178*** (0.0542)
logROE	-0.00223 (0.0135)	-0.00219 (0.0136)	-0.00669 (0.0136)	-0.0271 (0.0188)	-0.0103 (0.0202)	-0.0144 (0.0209)
logCEOAGE	0.363*** (0.0857)	0.358*** (0.0866)	0.353*** (0.0868)	-0.507** (0.211)	-0.345* (0.182)	-0.470*** (0.148)
logBOARDSIZE	-0.0400 (0.0478)	-0.0373 (0.0482)	-0.0204 (0.0460)	-0.106* (0.0611)	-0.0301 (0.0602)	-0.0559 (0.0570)
logBOARDSTRUC	-0.175*** (0.0535)	-0.183*** (0.0537)	-0.168*** (0.0533)	0.0659 (0.0981)	0.318*** (0.112)	-0.0544 (0.0838)
Constant	3.590*** (1.153)	3.760*** (1.177)	3.858*** (1.166)	3.427 (3.246)	-1.473 (3.398)	3.351 (3.310)
Observations	2,415	2,415	2,415	1,288	1,288	1,288
Number of id	395	395	395	265	265	265
Year FE	YES	YES	YES	YES	YES	YES
Industry Dummy	YES	YES	YES	YES	YES	YES
Number of instruments	58	58	61	89	91	81
Hansen Test P	0.281	0.276	0.147	0.116	0.238	0.315
AR(1)	0.000	0.000	0.000	0.000	0.000	0.000
AR(2)	0.754	0.706	0.591	0.244	0.294	0.243

All coefficients are based on the SYS-GMM model according to the following model equation:

$$\ln CEO\ pay\ level_{it} = \alpha_0 + \beta_y \text{lag}(\ln CEO\ PAY)_{yit} + \beta_x \text{political}_{xit} + \beta_z \text{Control}_{zit} + \varepsilon_{it}$$

d: dummy variable

\*, \*\*, \*\*\* refer to statistical significance at the 10%, 5% and 1% levels, respectively. The AR(2) test denotes the Arellano-Bond test to check for second order autocorrelation in the residuals. The Hansen test checks for the joint validity of instruments and the absence of overidentification problem. Year and industry dummies are included in the model.

The analysis of the control variables in Table 7.9 indicates that the size of the firm is a significant factor which affects the structure of CEO pay. It seems that firm size is negatively (positively) associated with CEO short-term (long-term) compensation. This means that large firms place more weight on the long-term compensation and offer less cash compensation to top management. It is crucial to recognise that there is evidence in the literature supports the fact that large firms are more likely to provide donations to political parties (Watts and Zimmerman, 1978; Belkaoui and Karpik, 1988). Fisher (1994) also reports that 6% from top UK firms provide political contributions and most of this political support goes to the Conservative Party. Admas and Hardwick (1996) also find that the size of the company is a significant predictor of the discretionary donations made by UK companies. Based on this evidence, it is possible to say that large firms attract politically connected CEOs. Meanwhile, these firms also put more emphasis on the quality of corporate governance through structuring executive compensation that achieves the desired goal and offsetting the managerial power that might be gained by the politically connected CEOs.

The age of CEOs is also a key factor that influences the structure of their pay. Table 7.9 shows that the coefficient of the variable CEOAGE is positive (negative) and significant in its effect on the percentage of short-term (long-term) compensation. This implies that as a CEO becomes older, they are paid more of their compensation in the form of short-term components. This might be justified in that these top managers approach retirement age, which affects their capabilities for achieving long-term performance plans. This result is consistent with the findings Ogden and Watson (1996) and McKnight *et al.* (2000).

## **7.6. Summary and Conclusion**

The present chapter aims to investigate the effect of political connections on the level and the structure of CEO pay. Two main assumptions have been empirically tested in this investigation; first, the political connection, which is identified by the political contributions that are made by companies to one or more political institutions, are assumed to be related to top managers since they are responsible for the decisions of providing political support. Based on this assumption, the empirical analysis tests the relationship between political connections and the level of CEO pay. Second, it is

assumed that politically connected firms put more emphasis on the quality of corporate governance practices as a way to hedge against the managerial power of politically connected CEOs. Hence, the chapter tests the effect of governance indicators in these firms on the level of CEO pay. It also investigates whether the political connection has an impact on the structure of CEO pay that might reflect firms' behaviour with these highly powerful managers.

A number of significant findings have emerged from this analysis; first, this chapter provides evidence that politically connected CEOs are paid higher compensation compared to their peers. This is confirmed by the positive association between the level of CEO pay and political contribution (amount and dummy). Evidence also suggests that firms may be willing to pay higher short-term compensation to attract these politically connected CEOs, but they also tie those powerful managers with a significant amount of long-term compensation. This is to reduce the future risk that comes from being politically connected.

Second, findings reveal that the size of a CEOs political network is positively associated with the level of their pay. This implies that a large network of political relations is considered to be an additional merit that is worth a corresponding increase the level of CEO cash pay. However, this network also reflects an external source of power for those top officers, hence, firms also increase the level of long-term compensation that is linked with future performance to offset the managerial power effect. These findings support both the agency theory and the resource dependence theory that firms search for individuals who provide the business with additional benefits through external resources such as political connection. The firm in turn needs to pay these distinguished individuals such attractive compensation packages that they are enticed to join the firm. This is by offering them higher compensation packages that include both higher cash compensation that is more desirable to those politically connected managers, and long-term compensation that saves the company from the power that is gained from them being politically connected.

Third, results show a positive association between the leading political parties in the UK (i.e. the Conservative and Labour parties) and short-term compensation, and a negative association in the case of long-term compensation. This implies that those CEOs who have political connections with these two parties are offered more cash

compensation and less equity compensation. In the context of managerial power theory, these CEOs are highly powerful and they have the discretion to intervene in the process of setting their contracts. Thus, they are willing to be paid in the form of short-term payments rather than bearing risk that is associated with the long-term compensation. It seems that those managers, who have political relationships with the main UK government parties, reflect the extreme image of managerial power due to the huge advantages that comes from being connected with government.

Fourth, findings indicate that these firms put more emphasis on governance practises applied to these politically connected CEOs. Results show that large boards are associated with lower short-term compensation of politically connected CEOs. Whereas, the results indicate that long-term compensation is an increasing function of both the size of the board of directors and the percentage of non-executive directors. These results provide evidence that the two governance proxies play an active role in constructing compensation contracts that satisfy both the firm and top managers.

Fifth, findings further reveal that political connections have a significant influence in shaping the structure of CEO compensation. The empirical analysis that tests the relationship between the structure of CEO pay and political connection reveals two key findings. It is found that (I) the percentage of short-term compensation is a decreasing function of the amount of political contribution, the number of political parties and political dummy; (II) The percentage of long-term compensation is an increasing function of these three political indicators. This is significant in the context of corporate governance theories as it provides further evidence of good governance applications in these politically connected firms. In theory, top management should be paid in a way that could align their interests with shareholders, which is fundamentally dependent upon motivating risk-averse managers to take additional risk in business investments. Hence, paying top officers more equitable compensation may sufficiently achieve this goal of interest alignment. Moreover, paying those managers less cash compensation incentivizes them to put their maximum effort for long-term performance.

To sum up, these findings provide evidence that politically connected CEOs are paid higher compensation compared to their peers. Paying these distinguished managers higher cash compensation reflects the need of the firm to have those managers who

are expected to provide the business with huge benefits in the future. However, paying them higher long-term compensation reflects the weapon that is used by the firm as a way to hedge against the effect of managerial power. This is evident by the findings of corporate governance proxies; which suggest that these firms tend to precisely apply governance practises and ensure that it plays its required role in creating the best compensation contracts for politically connected CEOs.

## **Chapter 8: Conclusion**

### **8.1. Introduction and Summary of Findings**

The primary aim of this thesis is to analyse CEO pay in the UK from several perspectives. The thesis emphasises three main objectives to contribute to the scant literature in this strand. These objectives are as follows: i) to investigate whether CEO pay is associated with improved performance or not; ii) to investigate the implications of corporate governance practices on CEO pay; iii) to examine the effect of political connections on the level of CEO pay after controlling. The research design in this thesis is influenced by three major theories namely, the Agency Theory, the Managerial Power Theory and the Resource Dependence Theory. The empirical analysis of the thesis primarily applies the System GMM estimation to a sample of 777 non-financial UK firms during the period 2000-2012.

The empirical findings on the effect of CEO pay on a firm's performance suggest that paying higher fixed salaries to top officers may encourage complacent behaviour and demotivate them. This conforms to the Agency Theory that encourages pay for performance in order to diminish the effect of fixed salaries on a firm's performance. This is further confirmed by the finding that CEOs' bonuses are positively associated with short-term performance. However, bonuses, as a performance-linked component, contribute to enhancing a firm's profit only in the short run, only partially achieving the aims highlighted by the agency framework.

The contrasting signs associated with the coefficient of salary and bonus respectively implies that these two compensation components should not be aggregated when testing for firm performance. This result goes against the common practice in the literature that usually combines these two components and confirms the approach adopted by this study by testing these two pay components separately. Therefore, one should carefully interpret previous studies to avoid reaching misleading assumptions.

Long-term performance is positively associated with long-term compensation. This result provides evidence that postponing a proportion of CEOs' compensation in the form of options and LTIPs achieves the desired outcome of these compensation schemes. Apparently, providing top officers with more stock-based compensation increases the level of risk and uncertainty in their compensation packages, and this motivates them to maximise their efforts to improve firm performance in the long run. However, the results also reveal that short-term compensation has a negative impact on total shareholder returns, suggesting that offering CEOs higher cash compensation may also create the short horizon problem and demotivate them when it comes to improving shareholders' wealth in the long-term. Overall, the results show that firm performance is negatively affected by CEOs' total compensation. This also supports evidence that combining compensation components may provide misleading results. Consequently, it seems that higher compensation does not matter as much as the structure of the compensation scheme, meaning that companies should carefully consider how compensation packages are structured for their CEOs. To sum up, the findings support the agency theory that managerial incentives contribute to enhancing both short- and long-term performance. The only concern that emerges from these results is the magnitude of offered salary, and cash payments in general, which could affect both accounting profit and total return if CEOs are overpaid through this form of compensation.

In terms of the effect of corporate governance on CEO pay, the results show that large boards have a negative impact on all compensation components. This implies that the board is composed of a high number of executive and non-executive directors. Therefore, responsibilities and tasks are distributed across the board, decreasing the likelihood of CEOs being over-compensated. The result suggests that independent directors do not exercise restraint with regard to the level of CEOs' cash pay. Theoretically, CEO pay packages that are structured with lower cash payments and higher long-term compensation will reflect governance standards that should be applied to those powerful managers. This is to restrict their freedom to serve themselves through extracting rent from their compensation. Finding this positive association provides evidence that there is a high probability of managerial alliances between CEOs and other directors on the board. This is confirmed by the results using the product of multiplying board size by board structure as an explanatory variable.

This procedure reveals that larger boards with a higher number of outside directors are associated with higher CEO pay. Moreover, these findings are not sensitive to firm size, meaning that the results of both board size and board structure are generalised for all firm sizes in the research sample.

There is no evidence depicted in the results of either institutional shareholders or individual blockholders having an effect on CEO pay. The only significant findings are related to the number of shareholders, which is inversely related to CEO salary and positively associated with long-term compensation. However, since the roles of non-executive directors, institutional shareholders and individual blockholders have relatively little effect on UK firms, it seems that the managerial power of CEOs in the UK is relatively high. The analysis of CEO ownership, further supports the managerial power hypothesis, as it appears to be positively associated with cash and total CEO pay and negatively associated with long-term compensation.

UK firms treat managerial ownership as a substitute choice that offsets the need for higher equity compensation, whereby managers become shareholders in the firm. This could be acceptable in the context of the agency theory that managers, who are also shareholders, are expected to act in favour of the collective interests of shareholders. However, the finding that CEOs' cash and total pay are increasing with the magnitude of CEO ownership in the firm, strengthens the evidence that there is managerial entrenchment embedded in the managerial power theory. Results of managerial tenure also support the claim of the latter theory, and findings indicate that CEO tenure has a positive impact on all compensation components.

The results concerning the impact of political connections on CEO pay demonstrate that politically connected managers are paid higher compensation compared to their peers. The positive association between the level of CEO pay and political contributions confirms this result. As the resource dependence theory suggests, the findings infer that firms may be willing to offer higher cash pay to politically connected CEOs. This stems from firms' believing that such CEOs will lead the business to a distinguished position amongst rival firms. The result implies the firms' awareness of the high power that managers possess, thus they hedge against this power by increasing the level of long-term compensation.

Postponing a significant amount of CEO pay might reflect the need of the firm to reduce future risk brought on by being politically connected. The political network analysis indicates that supporting several political parties is positively related to CEO pay. In other words, as the network of a CEO increases, his or her cash and stock compensation will increase. Furthermore, results show a positive association between the contribution to leading political parties in the UK (i.e. Conservative and Labour) and short-term compensation, and a negative association in the case of long-term compensation. It seems that those managers who have political relationships with leading parties have greater managerial power due to the huge advantages that come from being connected with current or potential UK government figures.

Assuming that politically connected CEOs are paid more compensation, but are also tied to long-term compensation, guides the study to test the effect of governance practices on the level of politically connected CEOs' pay. The findings suggest that governance indicators have an active role in controlling compensation packages of CEOs. This is confirmed by the finding that politically connected CEOs working for firms with large boards are associated with lower short-term compensation. The results also indicate that long-term compensation is becoming an increasing function of both board size and the percentage of non-executive directors. Furthermore, the study analyses the structure of CEO pay in association with political connection variables. Findings in this regard indicate that the percentage of short-term compensation is a decreasing function of the amount of political contribution, the number of political parties and the political dummy. In addition, the percentage of long-term compensation is found to be an increasing function of the three political indicators. This is significant in the context of corporate governance theories as it provides further evidence of good governance applications in these politically connected firms.

## **8.2. Policy Implications**

Corporate governance policies have witnessed noticeable reforms in the UK during the last few decades, especially in the way in which top management is paid. This is seen clearly in the movement of the compensation structure towards more long-term pay that ties CEOs with future performance. However, this research sample shows

that the majority of UK firms still offer compensation packages that consist of a higher proportion of short-term payments. According to the results of this study, a number of policy implications emerge and should be considered in terms of the structure of CEO pay and governance practices in the UK.

First, the results demonstrate that increased salaries and short-term pay in general have a negative impact on total shareholders' return. This suggests that firms should decrease the level of annual cash payments and increase the level of stock-based compensation. Hence, UK firms may consider the criteria of bonus plans that are usually linked with short-term performance. Offering CEOs a higher bonus may harm the prime objective of managerial incentives, namely maximising shareholders' wealth. Recent surveys in the UK show that underperforming managers still receive bonuses, which is undoubtedly unwelcomed by investors and the general public.

Second, the results show that corporate governance practices in the UK play only a minor role in transforming CEO compensation contracts. Hence, firms should put an emphasis on the role given to non-executive directors and ensure that they act in favour of the firm rather than themselves or their peers. Furthermore, the findings demonstrate that CEO ownership is associated with higher pay, reflecting a source of power and entrenchment for top officers. Thus, the findings suggest supervising the level of managerial ownership so as not to exceed a specific limit as a way to restrict managerial power that is generated from this source. Even though both options and LTIPs are introduced to allow managers to build up their ownership in the company, it seems that excessive managerial ownership contributes to enhanced managerial wealth rather than shareholders' wealth.

### **8.3. Limitations and future research**

The results of this study are based on data from UK companies and may be generalised to other countries. However, a number of potential limitations are identified and might encourage future research. The first limitation relates to the data and sample selection; the sample is limited to CEOs who represent the highest paid director in most firms. Other executive directors in the firm may provide such contributions to firm performance. It would be interesting if further research was extended to cover the compensation of other executive directors. Another limitation is

the omission of variables such as ownership concentration, the growth of the firm, investment opportunity and other non-financial measures for granting bonuses. The inclusion of these variables may provide more insight to the literature on executive pay. Furthermore, the valuation of LTIPs is based on the face value of shares at the grant date, and the most appropriate method for this valuation would involve data related to performance conditions of these grants over at least three years, which is unavailable from the data sources used in this study.

This study also provides evidence related to governance proxies in the UK and one of these is the presence of non-executive directors in the board. Again, the unavailability of data about these outsiders, such as on whether they are serving in other boards and how their network could be reflected in their role in the firm, imposed limitations on the findings. It is recommended that future research studies analyse the characteristics of these NEDs, along with their fees, shareholdings and networks with other firms. Also, companies tend to pay fees for external compensation consultants which is one of the main factors that could influence CEO pay and ultimately firm performance. It is suggested that future research tests the effect of compensation consultants on both executive compensation and firm performance. This topic is addressed in UK literature, but it still needs further analytical study, such as investigating whether the best known consultants in the UK are associated with efficient compensation contracts and improved performance.

Another limitation that is identified in this study is related to the political connections of CEOs. It is possible that other persons with the company framework also have political connections. Thus, further research is needed in this area, analysing firms in terms of their precise political connections and how these could be reflected in governance behaviors and performance.

Overall, this research is based on positivism philosophy that employs deductive approaches such as using quantitative methods (i.e. GMM estimation that is applied to all data analyses). It would be interesting if further research was to use qualitative approaches applied with statistical methods e.g. interviewing top managers to gain information about their perceptions, job satisfaction and well-being. These factors could then be interpreted in connection with their pay conditions. Moreover, interviewing large shareholders could also provide insight into how these

shareholders perceive the process of compensation contracts and whether or not they believe they maximise their wealth.

## Appendices

### Appendix (1): LTIPs Evaluation method

$$\text{LTIPs Value} = \text{Price} \times \text{Shares} \times \text{Vesting level} \times [1 / (r + p + f)^T]$$

Where:

Price = the granted share price under LTIPs

Shares = the number of shares granted

Target = the target payout, expressed as proportion of shares granted

r = the risk-free interest rate

p = long-term average equity premium

f = forfeiture risk

z = length of performance period

**Appendix (2): Research variables acronyms and its use by prior research**

**Table 4.1.the employment of selected variables by prior studies**

	<b>Variable</b>	<b>Used by</b>
<b>Compensation Variables</b>	Salary (SALARY)	Murphy (1985), Core <i>et al</i> (1999), Goh and Gupta (2010), Lin <i>et al</i> (2011), Banker <i>et al</i> (2013), Ozkan (2011)
	Cash Bonus (BONUS)	
	Cash compensation (CASHCOMP)	
	Long-term compensation (LTCOMP)	Murphy (1985), Conyon and He (2012), Banker <i>et al</i> (2013), Buck <i>et al</i> (2003), Ozkan (2011)
	Total compensation (TOTALCOMP)	Murphy (1985), Mehran (1995), Bebchuk and Grinstein (2005), Ozkan (2011)
<b>Performance Variables</b>	ROE	Lambert and Larcker (1987), Lin <i>et al.</i> (2011), Banker <i>et al.</i> (2013), Capezio <i>et al.</i> (2011)
	EPS	Lin <i>et al.</i> (2011), Gergg <i>et al.</i> (2012)
	TSR	Lambert and Larcker (1987), Mehran (1995), Main <i>et al.</i> (1996), Core <i>et al.</i> (1999), Buck <i>et al</i> (2003), Bebchuk & Grinstein (2005), Cheng and Lndjejikian (2009), Goh and Gupta (2010), Lin <i>et al.</i> (2011), Conyon and He (2012), Banker <i>et al.</i> (2013), Ozkan (2011), Gergg <i>et al.</i> (2012)
	Tobin's Q (TOBINSQ)	Yermack (1996), Mehran (1999), Short and Keasey (1999), Lin <i>et al.</i> (2011),
<b>Governance Variables</b>	CEO ownership (CEOSH%)	Boyd (1994), Janakiraman <i>et al.</i> (2010), Mehran (1995), Core <i>et al</i> (1999)
	Institutional investors' ownership (INSTITUTIONAL%)	Janakiraman <i>et al.</i> (2010), Lin <i>et al</i> (2011), Ozkan (2011)
	The number of Institutional investors (INSTITUTIONAL#)	Ozkan (2011)
	Individual blockholders (BLOCKHOLDERS%)	Ozkan (2011)
	The number of Individual blockholders	Ozkan (2011)

	(BLOCKHOLDERS#)	
	Board size (BOARDSIZE)	Core <i>et al</i> (1999) Conyon and He (2012) Gergg <i>et al</i> (2012)
	Board independence (BOARDSTRUC)	Core <i>et al</i> (1999), Capezio <i>et al.</i> (2011), Conyon and He (2012)
	Tenure (TENURE)	
	Duality (Duality)	
Political connection variables	Political connection variables <ul style="list-style-type: none"> <li>• Total political contribution (TPC)</li> <li>• The number of political parties (NPP)</li> <li>• Political dummy (POLITICAL<sup>d</sup>)</li> <li>• The number of political parties dummy (NPP<sup>d</sup>)</li> </ul>	Roberts (1990), Jayachandran (2006), Ansolabehere <i>et al.</i> (2004), Cooper <i>et al.</i> (2010), Aslan and Grinstein (2012)

### Appendix (3)

#### Appendix (3a): sample's industrial classification and frequency

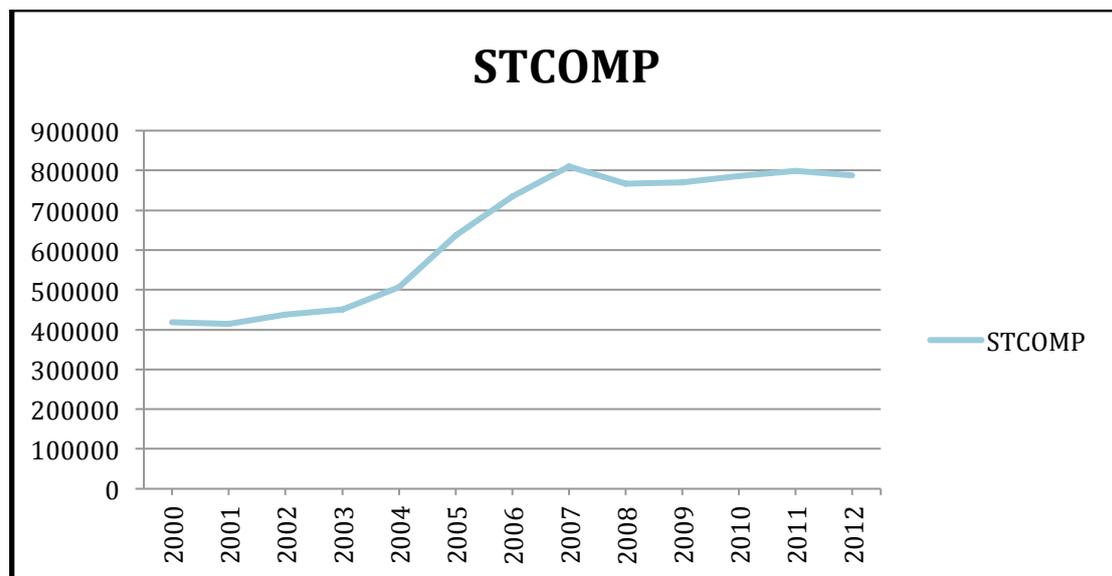
INDUSTRY	Frequency	Percent
Chemicals, rubber, plastics, non-metal	411	8.47
Construction	179	3.69
Education, Health	23	0.47
Food, beverages, tobacco	166	3.42
Gas, Water, Electricity	84	1.73
Hotels & restaurants	137	2.82
Machinery, equipment, furniture, recycle	497	10.25
Metals & metal products	198	4.08
Other services	1,697	34.98
Post and telecommunications	149	3.07
Primary Sector (agriculture, mining, et)	223	4.6
Public administration and defence	70	1.44
Publishing, printing	159	3.28
Textiles, wearing apparel, leather	57	1.18
Transport	199	4.1
Wholesale & retail trade	564	11.63
Wood, cork, paper	38	0.78
<b>Total</b>	<b>4,851</b>	<b>100</b>

### Appendix (3b): The yearly number of firm sample

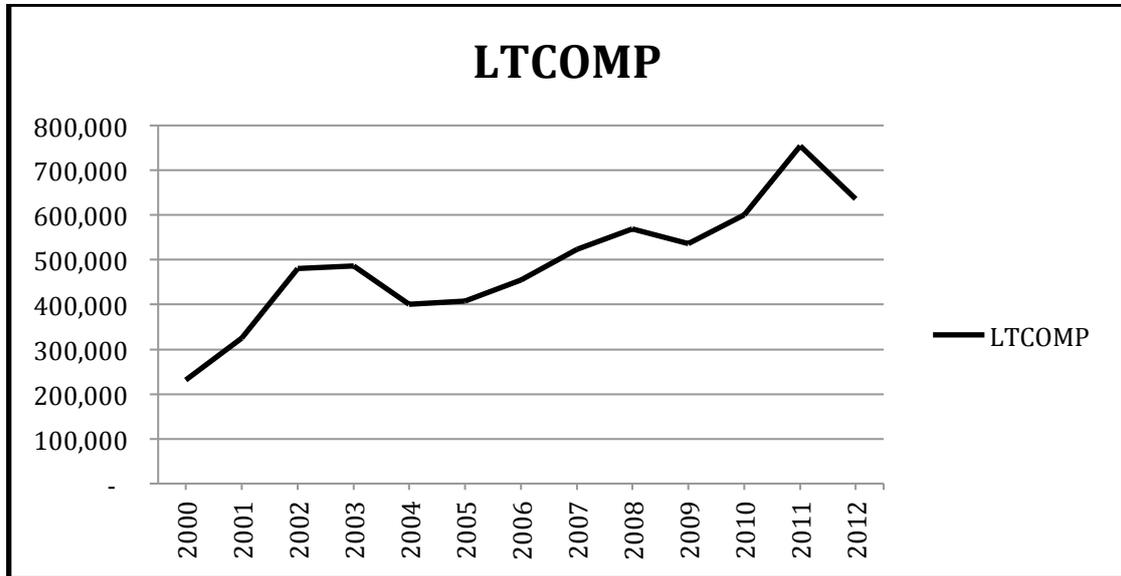
Year	Number of Firms
2000	265
2001	295
2002	310
2003	325
2004	396
2005	461
2006	526
2007	587
2008	589
2009	586
2010	653
2011	622
2012	301
Total	5916

### Appendix (4)

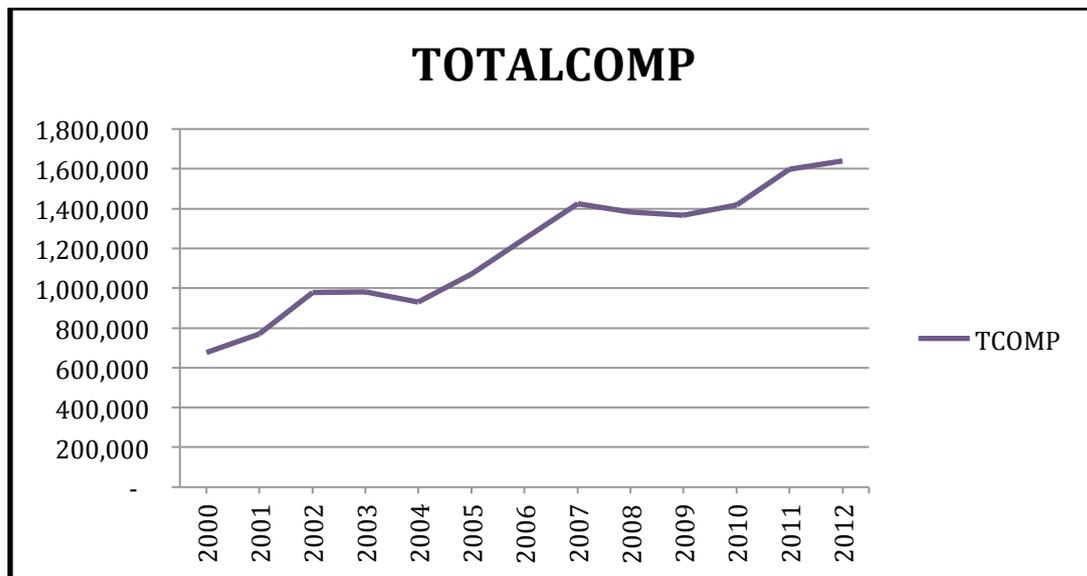
#### Appendix (4a): Average short-term compensation for CEOs 2000-2012



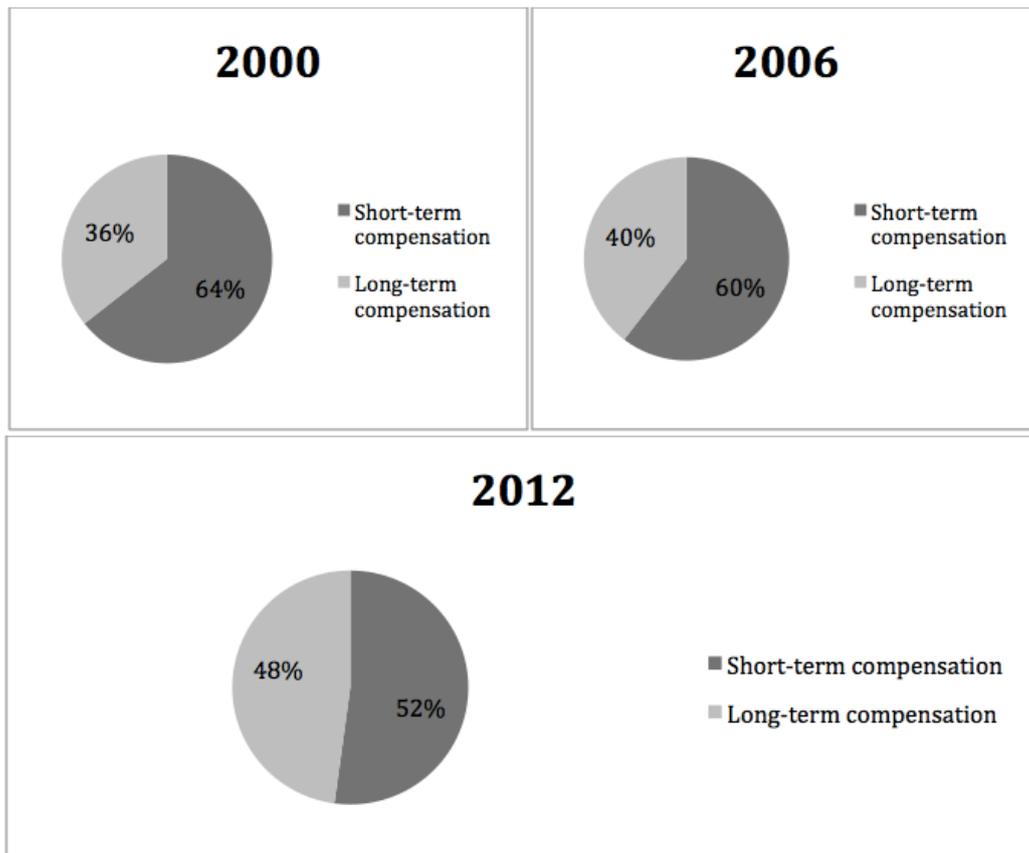
**Appendix (4b): Average long-term compensation for CEOs 2000-2012**



**Appendix (4c): Average long-term compensation for CEOs 2000-2012**



**Appendix (4d): The structure of short-term and long-term CEO's compensation in the UK in 2000, 2006 and 2012**



## Appendix (5)

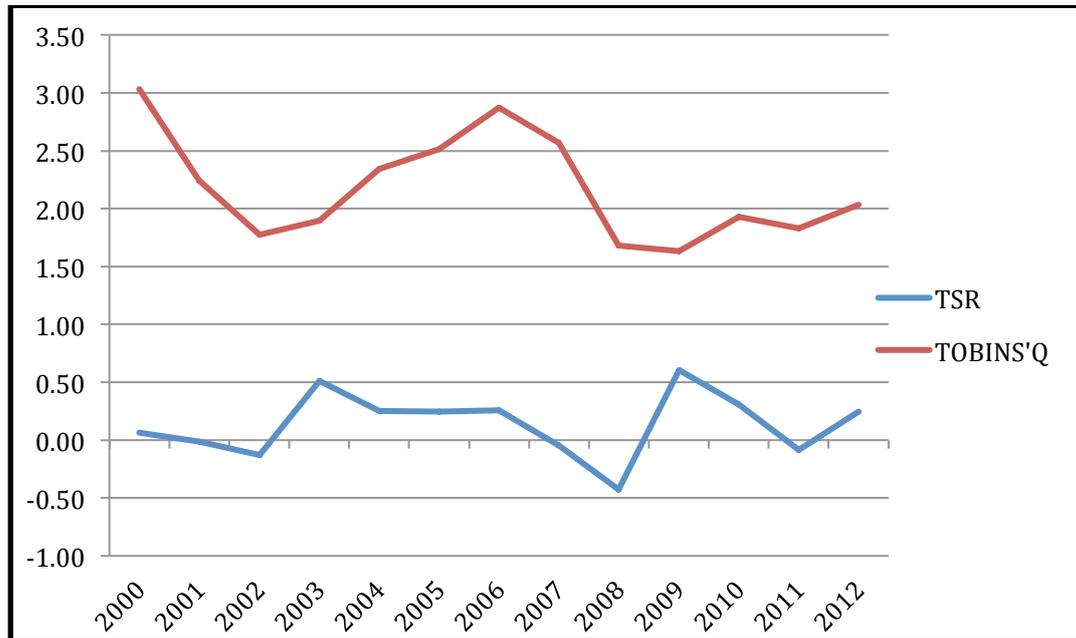
### Appendix (5a): The average firm performance 2000-2012

Year	EPS	TSR	ROE	TOBINSQ
2000	22.89	0.07	9.74	3.03
2001	21.30	-0.01	4.82	2.24
2002	20.68	-0.13	3.90	1.78
2003	22.26	0.51	3.51	1.90
2004	22.28	0.25	7.85	2.34
2005	23.23	0.25	10.50	2.52
2006	25.65	0.26	11.80	2.87
2007	27.38	-0.05	11.79	2.57
2008	26.27	-0.43	4.97	1.68
2009	20.80	0.61	-0.53	1.63
2010	22.63	0.31	9.24	1.93
2011	23.65	-0.08	8.72	1.83
2012	23.95	0.25	9.56	2.03

### Appendix (5b): The average EPS and ROE 2000-2012

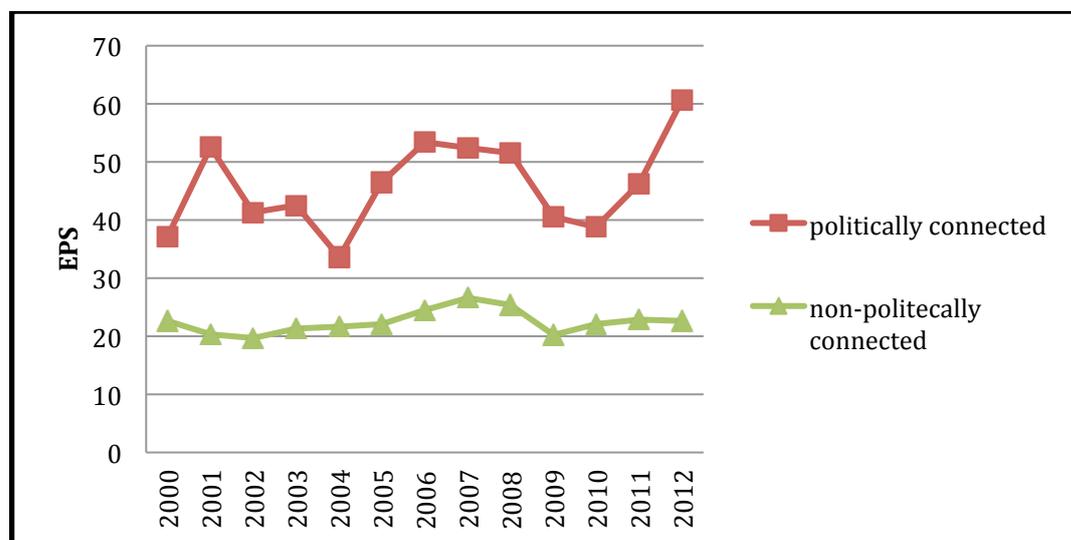


**Appendix (5c): The average TSR and TOBINS'Q 2000-2012**

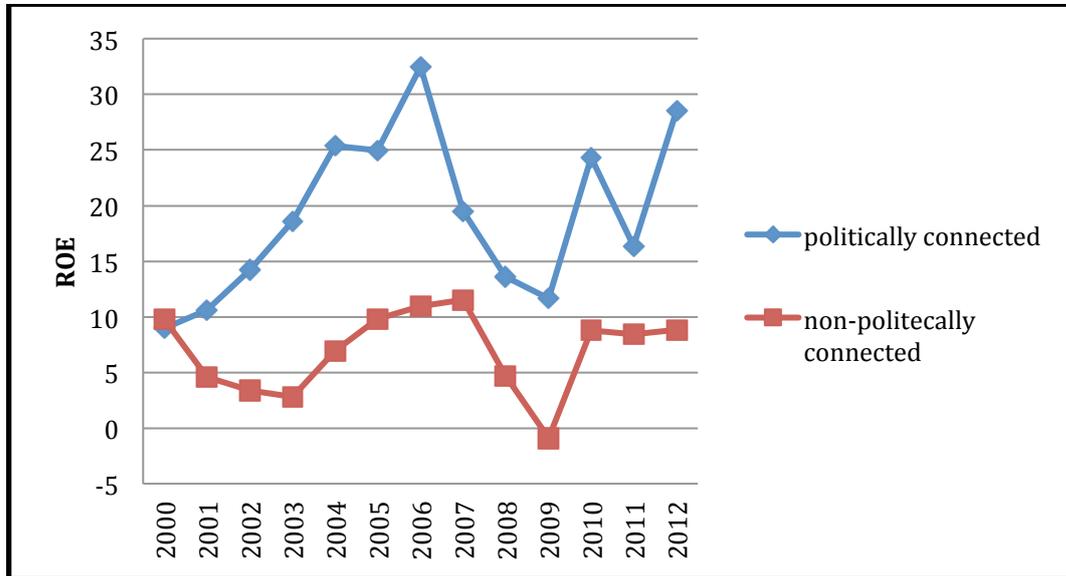


**Appendix (6)**

**Appendix (6a): The average EPS in politically connected and non-politically connected firms**



**Appendix (6b): The average ROE in politically connected and non-politically connected firms**



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