

**Empirical Studies in UK Corporate
Governance and Executive
Remuneration**

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Thesis submitted to The University of Nottingham
for the degree of Doctor of Philosophy

December 2008

Dedicated to Mr Walker
I'd rather stay in and read Lipsey

Abstract

THIS THESIS is structured around four empirical chapters examining related issues in corporate governance. The sample of FTSE 350 companies 1995-2005 has unique properties which are exploited to advance our understanding of the executive pay-setting process; the turnover of Chief Executives (CEOs); the market's reaction to shareholder activism and voting behaviour; and the distribution of pay within the boardroom.

Chapter two assesses whether remuneration committees facilitate optimal contracting or whether CEOs are able to capture the pay-setting process and inflate their own remuneration. The findings of prior research, which have been mixed, are shown to be sensitive to the econometric specification employed. A comprehensive assessment of non-executive directors' independence is undertaken. Little evidence is found to support a rents capture model.

Chapter three applies duration analysis within a competing risks framework to model the tenure and mode of exit of CEOs. The likelihood of forced departure is found to decrease sharply from the fifth year of a CEO's tenure. Some evidence is found to suggest that this is because CEOs who survive beyond year four entrench themselves in their position.

Chapter four considers the impact of shareholder activism. Voting dissent appears inconsequential in terms of increasing shareholder returns, reducing CEO pay or increasing the likelihood of CEO dismissal. However, firing the CEO of a poorly performing company improves shareholder returns soon after the CEO's dismissal.

Chapter five examines the structure and distribution of pay amongst board members. As a test of tournament theory, the impact of a rival's succession to CEO on the incumbent directors' compensation and likelihood of exit is examined. A rival's succession has a greater impact on the existing directors' likelihood of exit than it does on compensation.

Acknowledgements

I am very grateful for the wise council of my supervisors; Steve Thompson and Peter Wright. Our many meetings together were crucial in shaping this research and kept me focused on relevant subject matter. Moreover, their patience with my shortcomings and their interest in my personal development has been a great encouragement to me.

From its inception, this research drew upon on the kind provision of data from Manifest Information Services Ltd. Particular thanks are due to Sarah Wilson for her enthusiasm for this research and her husband Tim Clarke for the careful management of the database. Thanks are also due to Guy Callaghan for processing numerous data requests and for useful comments in relation to some of the descriptive statistics presented in this thesis. I am indebted to Alan Brett and Stuart Weavers for teaching me the realities of the corporate governance industry. Many thanks are owed to Daniel Hobbs and his family for their wonderful hospitality throughout the duration of research. Finally, it is appropriate to acknowledge the painstaking work of all those employees at Manifest who have spent countless hours deciphering data from company accounts and chasing company secretaries for missing information.

Without the unconditional love and support of my family, I would not have been in a position to begin this research. I also have been sustained throughout this project by the fellowship I have enjoyed with my church family at Emmanuel Bramcote. I would also like to express my warm gratitude to other members of staff, students and friends who helped to make this research project an enjoyable experience.

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CHAPTER 1

Introduction

'Your company is bankrupt, you keep \$480m. Is that fair?'

Californian representative Henry Waxman to Lehman Brothers Chief Executive Richard Fuld¹.

1.1 Background and Rationale for Research

The popularity of research in corporate governance and executive remuneration is self evident. It satisfies many of the criteria that generates media and public interest, not least a curiosity about the pay packets of some of the country's highest earners². It also provokes those who take umbrage at the very large rewards to voice their discontent³. Likewise, public interest in corporate governance naturally increases with the occurrence of high profile corporate failures, especially when such failures are thought to be caused by something systemic within the existing regulatory framework.

Less self evident is the worth of research in executive remuneration and corporate governance from a dispassionate and objective perspective. Satisfying a popular curiosity is not sufficient grounds to base a research agenda, nor is it the goal of this research. Rather this research seeks to contribute to the body of microeconomic knowledge in the field of governance and remuneration. In addition, this research, being empirical throughout, has direct implications for policy makers and practitioners in the governance and remuneration industries.

¹See Guardian 7th October 2008.

²See the coverage given to the publication of The Times' annual 'Rich List'.

³Consider the widespread discontent regarding the remuneration of bankers in the context of the present financial crisis. For example in the quote above.

It is not fully understood what determines the levels of pay received by top directors. Nor is it understood why, over the last twenty years, executive pay has risen quicker than inflation, average employee wages and equity markets. The resolution of these questions is particularly interesting, given accusations from a wide range of disciplines, that current levels of pay for top managers are too high and continued rises are unjustified. Often, such claims have been made on the grounds of fairness and ethics (Perel, 2003). However, more relevant to an economic research programme, is the accusation that high executive pay reveals inefficiency in the pay-setting process resulting in pay arrangements that do not provide appropriate incentives and do not enhance value (Bebchuk and Fried, 2004).

The economics of executive remuneration contracts are normally understood in the context of a principal-agent relationship whereby the manager experiences different incentives to the owner (Jensen and Meckling, 1976). As some actions of the manager are hidden from the principal (the moral hazard problem), the manager might pursue an agenda at the owner's expense without incurring punishment from the owner (Holmstrom, 1979). Further, the managerial agenda is unlikely to be in the public interest, whereas the optimisation of shareholder value is the basis upon which resources are allocated efficiently within a market economy. The remuneration contract might alleviate these problems by realigning the incentives of the agent with those of the principal (Jensen and Murphy, 1990). For example, a manager may receive a bonus for good performance or be granted share options. These incentive instruments are designed to facilitate congruence between the goals of the manager and their owner. However, if hidden actions extend to the manipulation of the pay-setting process, executives could design a system that provides rewards regardless of performance or pursuing shareholder interests (Bertrand and Mullainathan, 2001). Within this framework, the yardstick for testing the efficiency of remuneration arrangements is the extent to which managers are rewarded for success (Murphy, 1999).

Pay-for-performance may also help to solve the problem of ex-ante information asymmetry (the lemons problem) in the hiring process (Oyer and Schaefer, 2005). Full information regarding the agent's suitability for the job is hidden from the principal (e.g. the manager will try to hide their shortcomings in the job interview) and therefore the principal risks hiring a bad manager that generates a lower return than the good manager. This problem might be compounded if the principal offers a contract equal to the expected return of the two, as this will be insufficient to attract the good manager but sufficient to secure the services of a bad manager. However, the prospect of pay-for-performance is more attractive to good managers and hence good managers will self-select into compa-

nies that offer pay-for-performance.

However, the pay-performance relation might be a misleading indicator of the efficiency of remuneration arrangements (Frey and Osterloh, 2005; Froud, Leaver, McAndrew, and Shammai, 2008). First, as pay-for-performance is risky, pay-for-performance is more costly to satisfy a risk-averse agent (Hall and Murphy, 2002). Second, there are practical issues as to how to implement pay-for-performance. Agents' actions will tend towards the aspect of performance that is being measured, to the detriment of non-rewardable aspects of performance (Prendergast, 1999). For example, concern has been raised that practice of uncapped annual bonuses in the financial services sector contributed to the neglect of sustainable growth over the longer term⁴. Indeed, principal and agent are likely to differ in the period over which they would like performance to be assessed (Dikolli, 2001). A residual claimant of a pension fund would like good stock performance over the period of their working life, whereas the majority of 'long-term' equity incentives vest after only three years. Finally, in attempting to secure the services of a highly valued manager, who perhaps has unique knowledge of the company's business operations, the principal may offer lock-in incentives. The retention of such a manager would likely be welfare enhancing, as efficient resource allocation requires that managers are positioned where their skills will have the highest impact. For example, the principal may offer a long-term contract with specified liquidated damages for early termination. Such a contract might elicit more risky behaviour from the agent. This might be desirable, if the principal (being risk-neutral due to their diversified portfolio of shares) wants the agent to undertake projects that are riskier than naturally selected by a risk averse agent. However, commitment from the principal to the agent is only credible if it is costly for the principal to withdraw their commitment. Therefore, the incentives provided by the threat of dismissal are reduced and, in extreme cases, can generate perverse reward-for-failure incentives which are the polar opposite of pay-for-performance (Trade and Industry Select Committee, 2003).

Therefore, rather than simply investigate the pay-performance relation (which has been examined extensively in the literature (Tosi, Werner, Katz, and Gomez-Mejia, 2000)), it might be more interesting to examine the pay-setting process directly. In response to accusations of capture, UK reform efforts have been directed at increasing independence in the pay-setting process (Combined Code, 2006). Hence, institutional shareholders expect

⁴Another example is the suspicion that executives may favour share buy-backs over dividend repayments as a means of returning cash to shareholders if the executives are remunerated under an incentive scheme that pays out against growth in earnings per share.

the establishment of a remuneration committee that consists of non-executive directors who are independent from the executive management. Of course, the extent to which such directors are truly independent is central to the issue of whether the pay-setting process reflects the interests of shareholders or the executives themselves. This is the topic of chapter 2.

Implicit in the remuneration literature is the assumption that agency problems require resolution through the creation of appropriate financial incentives. However, it is interesting to consider whether the agency problems that arise from hidden actions have been overstated. If the process of hiring and firing CEOs is efficient then complex remuneration arrangements are less necessary. Any CEO who does not exert maximum effort in pursuit of shareholder value would be replaced by the next manager eager to take their place⁵. Thus, the threat of dismissal might diminish the need for costly incentive based remuneration.

However, concerns have been raised that substantial obstacles prevent the efficient removal of CEOs. Firm performance might not adequately represent CEO competence, diligence and effort. Even after the firm performance has been observed and the actions of the CEO have been scrutinised (perhaps at a shareholders meeting) it might not be clear how the actions of the CEO have contributed to firm value. Furthermore, in light of the most egregious abuses of power, CEO's have been allowed to 'resign' rather than face the sack⁶. Similar to the capture of the pay-setting process, if the CEO is able to fill their board with friendly directors they might be able to resist pressure to step down from shareholders following poor performance (Weisbach, 1988; Adams and Ferreira, 2007). Yet this process of entrenchment may take time (Hermalin and Weisbach, 2003) and therefore a framework is required that allows exploration of the varying likelihood of dismissal over the duration of the CEOs tenure. Duration analysis is such a framework and chapter 3 applies this method to gain insights into the processes driving CEO tenure and mode of exit.

An indication of the extent to which firing the CEO is important can be measured by analysing the stock market's reaction to such an event. If management is entrenched, extracting rents from shareholders and resisting pressure to exit, then a successful dismissal should be viewed favourably by the market. Despite some voices to the contrary (Monks and Minow, 2004), extant US research has found little evidence to suggest that

⁵In fact, even if maximum effort is exerted the executive might get fired if somebody of greater talent is available.

⁶See, for instance, Jeffrey Skilling of Enron Corp (Business Week 15 August 2001).

activism by shareholders improve shareholder returns (Karpoff, 2001). However, institutional reforms in the UK have invested considerable effort in increasing the participation of shareholders (Hampel, 1998; Myners, 2001, 2004). As a starting point, shareholders have been encouraged to make considered use of their voting rights at company meetings, rather than rubber stamp management proposals. The extent to which increased levels of voting have influenced returns, governance arrangements or remuneration arrangements is currently unknown and will be explored in chapter 4.

As discussed above, hidden action and hidden information concerns may be one mechanism driving large levels of performance-related CEO remuneration. However, an alternative justification could be the incentives that CEO remuneration provides to those involved in a competition for promotion (Lazear and Rosen, 1981). If subordinates are prepared to sacrifice current pay for the prospect of winning CEO level remuneration, then large differentials between CEO pay and subordinate pay are to be expected. Investigating tournament theory requires subtle tests to distinguish between alternative hypotheses. For instance, to maintain tournament incentives, the prize should be increasing in the number of participants but the ability of the board to recruit from outside the firm complicates the measurement of the number of players. An alternative is to analyse the compensation to the losers of the tournament, together with how their likelihood of exit changes when a rival is promoted to CEO. By exploring these phenomena, a clearer picture should develop as to the extent to which firms use promotion tournaments as a device for motivating directors.

Several data and measurement issues have arisen in prior studies examining related issues of corporate governance and executive remuneration. While company disclosures on remuneration are more complete in recent years, the complexity of remuneration arrangements remains a challenge for researchers. In addition to a basic salary, directors can receive annual bonus payments, deferred bonus entitlements, matching shares on deferred bonuses, recruitment incentives, stock options, long term equity incentives, transaction bonuses or pension benefits. There is considerable heterogeneity in application of the different elements amongst companies. For example, the conditions for vesting on option and long term equity incentives vary and of particular concern is the extent to which they vest with respect to performance.

This research has used data provided by Manifest Information Services Ltd. The dataset has several desirable characteristics which allows both the exploration into new areas of research unavailable to prior researchers as well as more accurate investigation of hy-

potheses undertaken in prior studies. Indeed, to a certain extent, the research project has been structured to maximise the potential of the dataset. For this reason, the thesis comprises four separate empirical investigations, albeit on the related theme of corporate governance. It also appropriate that some summary statistics are presented within this introductory chapter to establish the key features and trends associated with executive remuneration and corporate governance in the UK. A brief description of the sample is provided in section 1.3 and further issues associated with the sample are described in the relevant chapters.

Contributions to the literature have been received from several disciplines including labour economics, finance, strategy, industrial organisation, business ethics and other social sciences. There is a danger that this research could muddle together a mix of these different strands of the literature without making a significant contribution to any of them. This thesis uses agency theory as a lens to analyse large public companies in the UK. Agency theory presupposes that the optimisation of shareholder value is the mark of good governance and desirable pay setting arrangements. While this assumption is contestable, it is not the place of this thesis to debate an agency vs stakeholder paradigm of corporate governance. Nor does this thesis consider the critique that a market based pursuit of shareholder value is myopic; overly focused on the short term at the expense of long term value. Rather, this thesis seeks to determine whether or not governance and remuneration arrangements are assisting the mitigation of agency problems or whether agency problems are unresolved and the institutional arrangements we observe contribute to managerial power, entrenchment and extraction of rents.

This introduction seeks to establish the importance of research in executive remuneration and corporate governance and will set the context for the remainder of the thesis. The following sections in this chapter will provide an overview of remuneration and governance arrangements in the UK. A summary of the research is provided explaining how the exploration of these topics will contribute to the body of knowledge in field of applied microeconomics. Academic research in remuneration and governance also has direct implications for the development of best practice. Therefore, this research may also serve as a useful resource for both policy makers and practitioners in the remuneration and corporate governance industries.

1.2 UK Remuneration and Governance

The central trait that most UK and US public companies share is a divorce between ownership and control (Keasey, Thompson, and Wright, 1997; Hart, 1995), with control concentrated in the CEO or a small number of executive directors and ownership spread amongst a large number of diverse shareholders (Berle and Means, 1932). Anglo-American directors bear a fiduciary duty to the shareholders above other stakeholder groups. This description of an Anglo-American corporation lends itself well to analysis under agency theory (Jensen and Meckling, 1976) which presupposes the overriding objective of the firm is the maximisation of shareholder value (Tirole, 2001) and that the challenge of corporate governance is how best to ensure this objective is not hindered by the guile and self interest of management (Shleifer and Vishny, 1997).

While similarities certainly do exist between UK and US vis-à-vis governance arrangements in other territories⁷ the bundled term ‘Anglo-American’ is somewhat misleading as subtle differences exist between practice in the US and UK. This thesis solely examines large UK public companies. It is appropriate therefore to set the context of this research by briefly outlining the corporate governance and executive remuneration arrangements specific to the UK. Indeed, UK directors are not paid like US directors (Conyon and Murphy, 2000), UK shareholders act differently and enjoy different rights to US shareholders (Black and Coffee, 1994; Short and Keasey, 2005) and the UK government takes a different approach to the regulation of UK companies than the US does to its firms⁸.

The governance and executive remuneration arrangements that feature within public companies in the UK have been framed by a complex mixture of mandatory and voluntary regulatory initiatives. Companies incorporated within the UK are subject to the Companies Act (1985) and its subsequent amendments including, for instance, the Directors’ Remuneration Report Regulations (2002). Non-compliance with the act is a criminal offence and the directors of the company, including the non-executive directors, are liable. Companies that are publicly traded on the official list of the London Stock Exchange (LSE) are also subject to the UK Listing Authority’s⁹ Listing Rules (2008b), Prospectus Rules

⁷Governance models in other countries give more recognition to a wider collection of stakeholder groups. Germany companies, for instance, appoint employee representatives to serve on their boards. See Keasey, Thompson, and Wright (2005) for a review of the literature on non ‘Anglo-American’ corporate governance.

⁸For instance, compare the voluntary UK Combined Code (1999) to the mandatory US Sarbanes-Oxley (2002) act.

⁹The current UK Listing Authority is the Financial Services Authority (FSA).

(2008c) and Disclosure and Transparency Rules (2008a). Appended to the Listing Rules is the Combined Code (1999, 2003, 2006) with which companies who are UK incorporated are obliged to comply or explain their non-compliance¹⁰.

In addition to this regulatory regime, there has been a series of best practice documents issued by lobby groups who provided guidance to institutional shareholders and make recommendations to companies themselves. The two most influential lobby groups are the Association of British Insurers (ABI) and National Association of Pension Funds (NAPF). Companies that ignore or deviate from this institutional guidance risk censure from the business press and disgruntled shareholders. The extent to which, the threat of such censure acts as a discipline upon managerial behavior is, of course, the subject of much debate (Karpoff, 2001; Selvaggi and Upton, 2008). This will be a continuing theme throughout this thesis in particular in chapter 4 where details of how lobby groups endeavour to exercise their influence are reviewed.

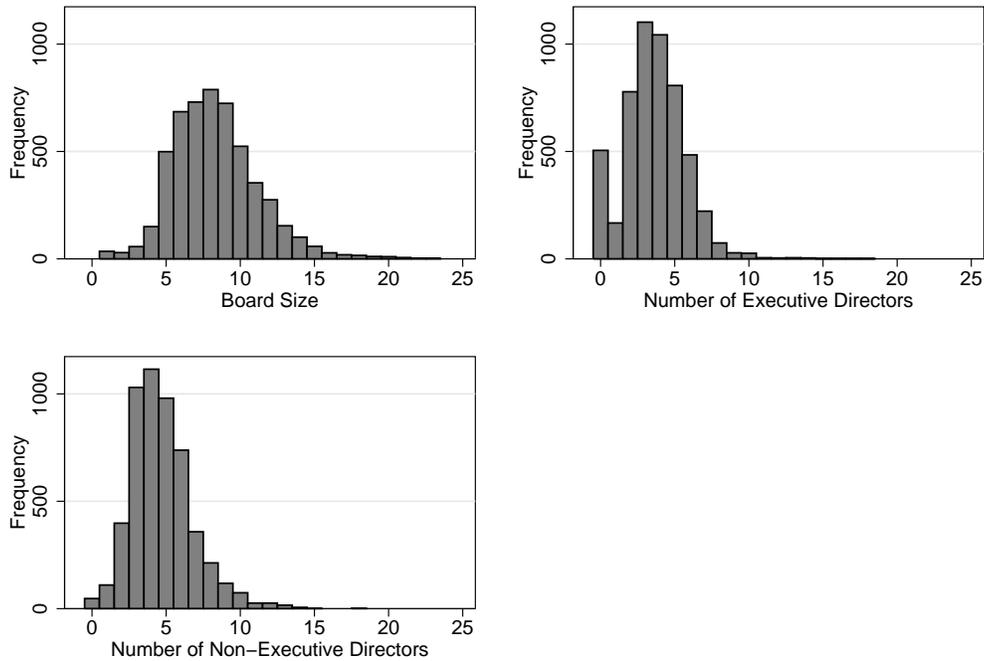
1.2.1 Governance

UK public companies are governed by a single board of directors. This unitary board will typically comprise a team of executive directors responsible for the day to day operation of the company and a number of non-executive directors who act in a supervisory capacity. The distribution of the composition of boards in our sample is shown in 1.1¹¹. The management team is typically headed by a Chief Executive (CEO) and board meetings are led by a Chairman. Executive directors, other than the CEO commonly reflect important divisional or geographical heads and a Finance Director (FD) will also serve on the board. A Company Secretary usually attends the board meetings but is not considered a director unless the role is combined with another executive role as is sometimes the case in smaller companies. One of the non-executive directors will be nominated as the senior independent director (SID). The SID is obliged to make herself available to shareholders who wish to raise issues but whatever reason do not want to channel their concerns through the Chairman.

¹⁰It is possible to incorporate in certain territories outside the UK and still trade on the LSE (see section 1.3).

¹¹The large number of boards with no executive directors is due to the inclusion of investment trust companies which are later excluded from our analysis.

Figure 1.1: Distribution of Directors Within Boards



Frequency represents company-years

1.2.2 Ownership

Directors typically own some of their company's stock although these holdings are normally small in percentage terms, consistent with the principal-agent framework. Executive directors are also encouraged to retain shares from the vesting of options and long term equity incentives. Institutional guidance (ABI (2006)) recommends that executive directors build a meaningful shareholding and this is typically interpreted by companies to equal at least the director's annual salary. However, founding directors still serving on the board often retain a significant shareholding after the Company's Initial Public Offer (IPO).

Figure 1.2 shows the mean and median equity holdings for the companies in our sample. In our sample median board holdings are less than 1% of the company's equity (see figure 1.2). Mean ownership is higher but declined significantly following the end of the technology bubble in 2000. This reflects the fact that technology stocks are commonly managed by the company's founders. It also reflects a move by directors to diversify their positions alongside a general market downturn.

The Financial Services Authority (FSA) requires under its 'Disclosure and Transparency

Figure 1.2: Board Ownership

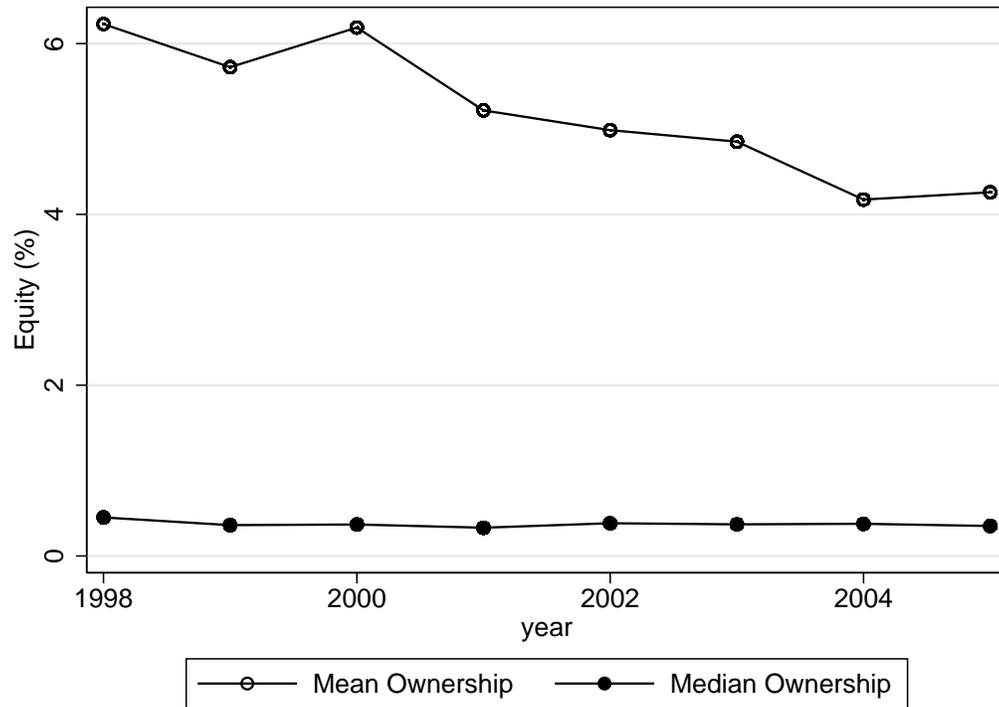
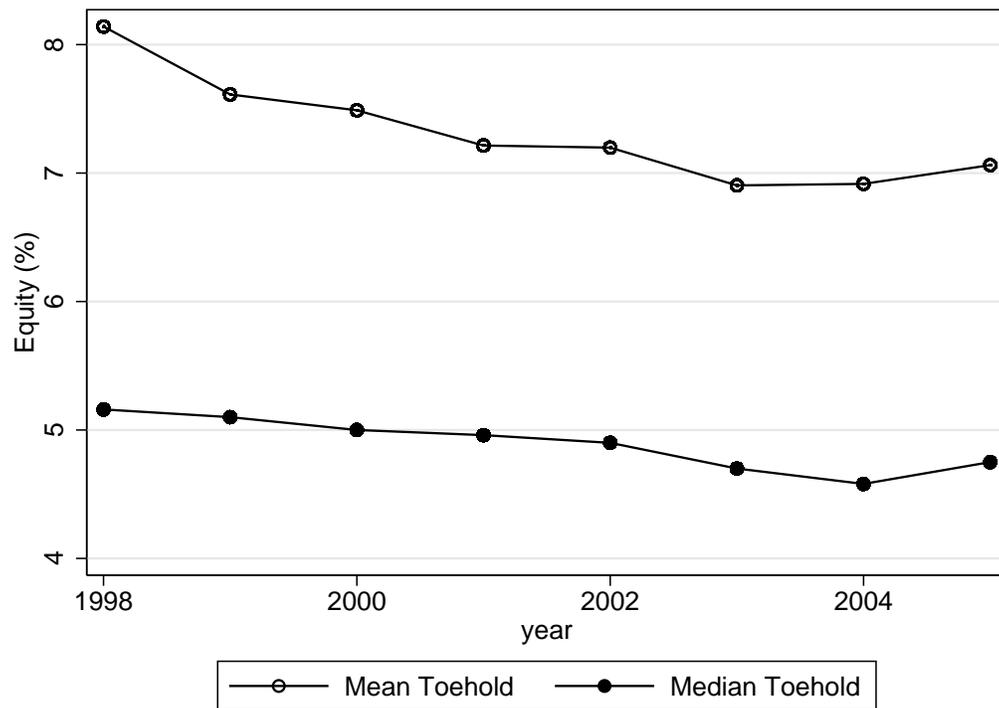


Figure 1.3: Large Outside Ownership



Rules' that major holders of the company's stock are identified. Any toehold stake above 3% of the Company's equity or 3% of the voting rights must be declared in the annual report and accounts (DTR 5)¹². 88% of companies in our sample had at least one disclosed shareholder and figure 1.3 shows the average size of the toehold for those companies. If a director's shareholding (either as individuals or as a concert party) increases to between 30% and 50% of the Company's equity then they are obligated to make an offer for the company under Rule 9 of the City Code (2006). Waivers of Rule 9 are possible if approved by the remaining shareholders and the takeover panel.

The number of toeholds in our sample is difficult to reconcile with the benefits to diversifying as far as possible within a portfolio in order to minimise firm-specific risk. There is a large literature that discusses the possible merits for outside shareholders owning a sizeable position in a single company (Admati, Pfleiderer, and Zechner, 1994; Burkart, Gromb, and Panunzi, 1997). Shleifer and Vishny (1986) present toeholds as a possible solution to the free rider problem in takeovers as articulated by Grossman and Hart (1980). Of particular relevance to this thesis is the concept of the 'active investor' who takes a large position in a poorly governed company and uses its influence to make changes to operations and management in the hope of making a return (Becht, Franks, Mayer, and Rossi, 2008). This literature is discussed further in chapter 4.

1.2.3 Executive Remuneration

The components of a typical FTSE 350 executive director's remuneration package consist of salary, bonuses, benefits and long term equity incentives. Descriptive statistics of these components are given in table 1.1. Within the FTSE 350, the largest 30 companies pay significantly above the average, with the biggest difference resulting from the grants of share options and long term incentives (approximately 4 times the average).

One notable omission from table 1.1 is information on pensions. Currently, Manifest does not record the details of pension schemes in its database, although information can be found within their Meeting Business reports. Executive directors typically have either a defined contribution arrangement based on a percentage of salary (or receive additional salary in lieu of contributions), or belong to the company's defined benefit scheme. Defined benefit schemes typically provide for two-thirds final salary per annum on retire-

¹²Prior to 20th January 2007, the Companies Act (1985) required notification of holdings when they exceed 3% of the ordinary issued share capital i.e. it was possible to hold in excess of 3% of the voting rights and not disclose the holding.

Table 1.1: Remuneration Arrangements

Remuneration Component	Typical Policy	Median Levels (£)		
		FTSE350	FTSE100	FTSE30
Salary	Determined by reference to benchmarks such as size, industry and location.	310,000	433,000	500,000
Annual Bonus	Subject to financial and non-financial objectives. Some or all may be deferred into shares.	258,750	420,000	617,405
	Bonus is capped as percentage of salary. Transaction, sign-on or retention bonuses are rare.	100%	133%	150%
Benefits	Expenses occurred in normal course of business. Exceptional payments include relocation allowances. Compensation for loss of office limited to 12 months' salary and benefits.	19,507	26,129	33,000
Share Options and LTIPs	Granted annually as a percentage of salary based on face value. Vest after three years subject to performance conditions.	379,055	786,240	1,547,776

Nominal prices, policy and composition of Index as at May 2008.
Bonuses are typically uncapped in the investment banking sector.

ment, subject to a certain number years service (normally between 20 and 40).

Executive remuneration is determined by a sub-committee of the board known as the remuneration committee. The Combined Code (2006) recommends that remuneration committees comprise solely of independent non-executive directors. The Chairman may be a member of the committee provided that they do not serve as executive chairman ¹³.

The remuneration committee is licensed to appoint its own external specialist remuneration advisers who give guidance on the appropriate structure, levels and disclosure of executive remuneration. Remuneration advisers have been accused of contributing to the excesses of executive pay, facilitating the capture of rents by powerful and entrenched managers (Bebchuk and Fried, 2004). Remuneration advisers are thought to be particularly vulnerable to capture if they provide additional tax or audit services to the company. The revenue stream that the supply of such services generates could compromise the impartiality of the advice supplied to executives. Since 2003, UK companies subject to the Directors' Remuneration Report Regulations have been required to disclose the name of the Remuneration Committee's advisers and any other services provided by the remuneration advisers. Conyon (2008) provides evidence that, in both the US and the UK, companies that retain specialist remuneration advisers pay their directors more. However,

¹³The extent to which remuneration committees are truly independent from the executives whose pay they determine is the subject of chapter 2.

Table 1.2: FTSE 350 Remuneration Advisers

Adviser	FTSE 350		FTSE100		FTSE30	
New Bridge Street Consultants	112	32%	31	31%	8	27%
Towers Perrin	55	16%	38	38%	11	37%
Kepler Associates	36	10%	17	17%	9	30%
Deloitte & Touche	38	11%	16	16%	9	30%
Watson Wyatt	28	8%	6	6%	3	10%
Hewitt Associates	14	4%	5	5%	2	7%
<i>Internal Advice</i>	193	55%	73	73%	22	73%

One company may employ more than one remuneration adviser.

Internal Advice identifies cases whether the remuneration committee draws upon the services of employees of the company.

Hewitt Associates acquired New Bridge Street Consultants in March 2008.

no evidence is found to suggest that this phenomenon is compounded when advisers supply additional services to the company. Moreover, a stronger pay-performance sensitivity is reported companies who retain consultants. These results are consistent with Cadman, Carter, and Hillegeist (2008) who arrive at the same conclusions using a sample of US firms.

Table 1.2 shows the number of companies to which the five largest remuneration advisers provide services. Internal advice typically includes one of, or a combination of, the company's Human Resources department, the CEO, the Chairman or Company Secretary.

1.2.4 Reform since 1992

A defining feature of the period that is studied here is that it spans a decade of progressive corporate governance reform. A very different governance regime existed in 1995 compared to 2005. Table 1.3 sets out the key differences in disclosure, practice, and expectations facing companies at the start and end of the period. A sizeable literature has emerged documenting the history of the reform process (see Solomon (2007) for a full review). Provided here, is a brief overview in order establish an appreciation of the differing governance environment facing companies at various points in our sample.

In response to some high profile corporate scandals in the 1980s (e.g. Maxwell Communications) and economic recession UK in the early nineties, public scrutiny fell upon the accountability and transparency of board decisions (Solomon, 2007). As a result, the government established the Cadbury Committee (1992) in an attempt to document a consensus of best corporate governance practice. Jones and Pollitt (2004) credit the Cadbury Report with a range of sensible and practical recommendations which were widely

Table 1.3: Governance Environment 1995 and 2005

	Standard Practice 1995	Standard Practice 2005
Best Practice	Cadbury Report (General); Greenbury Report (Remuneration); Institutional Shareholders Committee; Pre-emption guidelines	Hampel & Myners (shareholder activism); Higgs & Tyson (Board); Smith (Audit) Turnbull (Internal Control); Combined Code (General); Remuneration Report Regulations; Voluminous Institutional Guidance (ABI, NAPF, ITC)
Board	At least two NEDs on Board Nomination Committee established No limit on directorships	Separate Chairman and Chief Executive At least half independent NEDs (excluding the Chair) Nomination Committee - majority of independent NEDs Annual performance evaluation Maximum of 1 FTSE 100 directorship
Remuneration	3 Year service contracts Remuneration Committee established Voluntary disclosure of remuneration No vote on remuneration report Parachute clauses	12 months service contract Wholly independent Remuneration Committee Mandatory disclosure of remuneration and advisors Mandatory but non-binding vote on remuneration report Options vest subject to performance and time-pro rated
Audit	Audit Committee established	Wholly independent Audit Committee Financial expertise on the Audit Committee Whistle-blowing procedures
Shareholders	Non-voting shares not rare Institutions cast votes with management Proposals passed on a show of hands Poll turnout approximately 50% Active investment funds rare	Typically one share, one vote Expectation to make informed voting decisions Electronic proxy poll voting Poll turnout approximately 60% Some active investment funds

Parachute clauses provide compensation for directors in the event of dismissal following a change of ownership.

adopted and have been used as the basis of best practice recommendations outside the UK. The Cadbury Report founded the principle of ‘comply or explain’ on which much subsequent reform was based. As such, companies are free not to comply provided they justify their non-compliance to shareholders¹⁴. Shareholders then choose to accept the explanation for non-compliance or to take a range of actions that might include demanding compliance in the form of a shareholder resolution, proposing to dismiss the board or, ultimately, selling their shares.

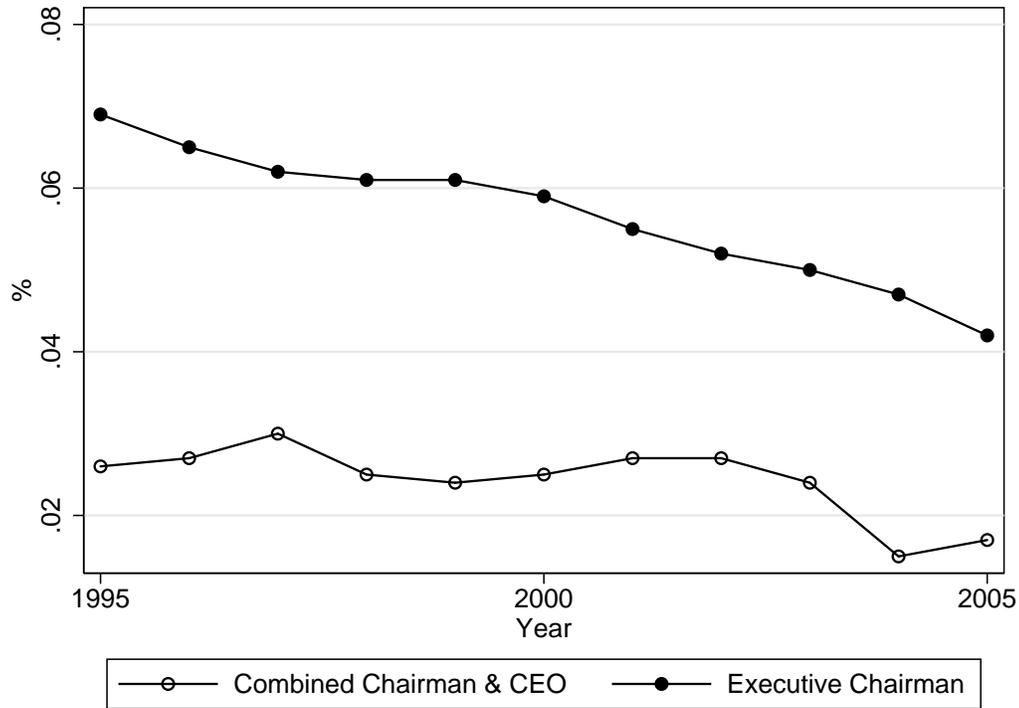
The Greenbury Report (1995) focused explicitly on executive remuneration. Amidst public discontent at the earnings of ‘fat cats’ and academic research suggesting a lack of transparency in the pay-setting process (Main and Johnston, 1992) and a disconnect between executive pay and company performance (Conyon and Leech, 1994; Conyon, Gregg, and Machin, 1995), Greenbury established the remuneration committee as standard practice and encouraged the use of ‘long-term incentive plans’ (LTIPs). LTIPs are grants of shares which vest against explicit performance conditions such as inflation-adjusted earnings per share (EPS) targets or total shareholder return (TSR) ranking against an appropriate benchmark. Share options were also encouraged, provided that they too contained performance conditions.

A series of best practice documents also emerged covering other areas of corporate governance as noted in table 1.3. The majority of the recommendations from the Higgs review (2002), which examined the role of chairmen and non-executive directors, were adopted in the revised version of the Combined Code (2003). Of particular relevance to chapter 2 was the formalisation of the criteria by which non-executive directors were deemed independent.

Backed by the full weight of company law, the Directors’ Remuneration Report Regulations (2002) both clarified disclosure rules and gave a non-binding vote on pay to shareholders. The implications and merits of this act are discussed in chapter 4 as are the Hampel (1998) and Myners (2001, 2004) proposals which were designed to encourage shareholder participation in governance.

¹⁴Practically, this will take place at the AGM, or in consultation with major shareholders throughout the year.

Figure 1.4: Proportion of Chairman with Executive Responsibility

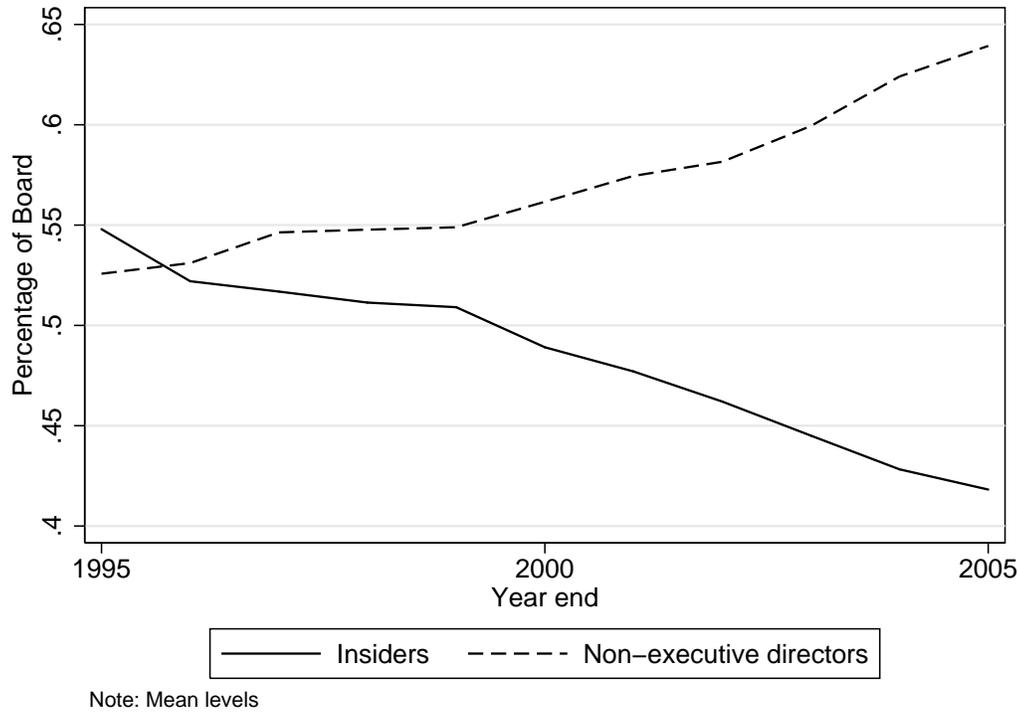


Role of chairmen and non-executive directors

Chairmen have a unique role in the governance of UK companies. The Combined Code (2003) does not classify chairmen as non-executive directors but neither are they necessarily executive directors. Rather, chairmen are thought of as being guardians of shareholder interests and an important contributor to the strategy of organisation, as well as being a facilitator between the executive and non-executive parties. Economic research undertaken from an agency perspective has emphasised the importance of the monitoring function of chairmen and non-executive directors (Jensen, 1993). Indeed, an important aspect of the investigation undertaken in chapter 2 is the effectiveness of such monitoring. Yet, if chairmen facilitate discussions between board members over the Company's strategy, it might be argued that there is nobody more qualified than the CEO (Daily, Johnson, Ellstrand, and Dalton, 1998). Of course, the concerns that this might lead to dominance and managerial rent seeking at the expense of shareholders are well documented (Peel and O'Donnell, 1995). The decision to combine or separate the roles of Chairman and CEO is typical of the tension between information and accountability that characterises much of the debate regarding the composition and effectiveness of boards.

The separation of the roles of Chairman and Chief Executive also has significance in

Figure 1.5: Board Composition



the history of the UK reform process. Figure 1.4 shows the decline in the proportion of chairmen with executive responsibility and the decline in those chairmen also serving as CEO. This is consistent with the re-emphasis on the monitoring role of chairmen during the reforming period, the need for accountability in the boardroom and the explicit call to separate the roles of Chairman and Chief Executive (Higgs, 2003; Combined Code, 2003). A combined Chairman-Chief Executive role is now a controversial arrangement for large UK public companies. Sir Stuart Rose's recent move to try to combine the roles at Marks & Spencer, (even on a temporary basis) provoked the Company's major shareholders to draft a protest resolution at the Company's 2008 Annual General Meeting (AGM).

The same tension between information and accountability is also an important feature of the debate surrounding the independence of non-executive directors. During the reform process, the call for more independent non-executive directors has been reiterated. Figure 1.5 shows an increase in the proportion of non-executive directors and the fall in the number of insiders during our sample. For simplicity, an insider here is considered to be an executive director or a non-executive director not considered independent by the company. Chapter 2 explicitly examines the characteristics of non-executive director independence and the extent to which independence matters is explored in more depth.

1.3 FTSE 350 Companies

The sample used throughout this thesis is the FTSE 350 Index, i.e. the largest 350 companies traded on the LSE by market capitalisation. The sample begins with those companies who were members of the FTSE 350 and had their financial year end on or after 1st January 1995. The sample follows those companies even if they fall out of the index until they are wound up or taken private and also includes all other companies who enter the FTSE 350 until their last financial year in 2005. Institutional expectations of corporate governance of FTSE 350 companies are more stringent than smaller listed companies. For instance, the Combined Code (2006) recommends that the boards of FTSE 350 companies comprise at least 50% non-executive directors whereas companies outside the FTSE 350 are only expected to have at least two non-executive directors.

There are a small number of FTSE 350 companies who are incorporated outside the UK. These companies are not subject to the same governance regime as UK companies. While such companies are under institutional pressure to comply with the Combined Code (and an inspection of these companies' reports and accounts revealed that these companies do generally make disclosures consistent with the Combined Code (2006)) it is useful to identify these in our sample (see table 1.4).

There are also a small number of FTSE 350 companies who are incorporated in the UK but maintain a dual listing on a foreign exchange. A dual listed company (DLC) is different from a 'cross listing' where the shares of a company are simply traded on a foreign exchange (Karolyi, 1998). Indeed, approximately 25% of the FTSE 100 allow their shares to be traded on the New York Stock Exchange through American Depositary Receipts¹⁵. DLCs are best understood as a merger between two companies in two different territories who combine their operations and cash flows, but retain separate identities and shareholder registries (Bedi, Richards, and Tennant, 2003). DLCs may share a single board, pay a single dividend or give shareholders of the two entities equal voting rights. Careful attention must be paid to DLCs to ensure that measures of company size and performance are accurate.

DLCs are potentially interesting as evidence has been presented suggesting that despite holding identical cash flow rights there can exist substantial differences in the prices of the two equities (Rosenthal and Young, 1990). Also they contradict market efficiency

¹⁵See <http://www.nyse.com/about/listed/listed.html>. A number of UK companies (Cable & Wireless, ICI, BG Group) have de-listed from the NYSE as the regulatory burden of maintaining a US listing has increased post Sarbanes-Oxley (2002).

Table 1.4: FTSE 350 Non-UK and Dual Listed Companies

Company	Country	Dual Listing
888 Holdings plc	Gibraltar	
Alea Group Holdings Ltd	Bermuda	
Allied Zurich plc	UK	Switzerland
Aquarius Platinum Ltd	Bermuda	
BATM Advanced Communications Ltd	Israel	
BHP Billiton plc	UK	Australia
Benfield Group Ltd	Bermuda	
Berkeley Technology Ltd	Jersey	
Brambles Industries plc	UK	Australia
Carnival plc	UK	US
Catlin Group Ltd	Bermuda	
Colt Telecom Group SA	Luxembourg	
Dexion Absolute Ltd	Guernsey	
Emblaze Ltd	Israel	
Eurotunnel plc	UK	France*
F&C Commercial Property Trust Ltd	Guernsey	
Insight Foundation Property Trust Ltd	Guernsey	
Investec plc	UK	South Africa
Mapeley Ltd	Guernsey	
Partygaming plc	Gibraltar	
Petrofac Ltd	Jersey	
Randgold Resources Ltd	Jersey	
Reed Elsevier plc	UK	Netherlands
Rio Tinto plc	UK	Australia
Shell Transport & Trading Company plc	UK	Netherlands
SmithKline Beecham plc	UK	US
Unilever plc	UK	Netherlands

* Unlike the other dual listed companies, Eurotunnel plc and Eurotunnel SA shares were not traded separately but combined through a twinning agreement.

(Froot and Dabora, 1999); and when a DLC becomes a single entity the company's market exposure increases in the country where it lists and decreases from the country where it has delisted (Bedi, Richards, and Tennant, 2003). However, for the purposes of this thesis it will suffice to have DLCs identified in our data and hence we can take account of them in our econometric analysis.

1.4 Summary of Research

The remainder of this thesis is structured as four empirical investigations. A review of the related literature is contained within each empirical chapter. Chapter 2 tests two major theories of executive directors' pay-determination using data on FTSE 350 companies. The chapter seeks to determine whether remuneration committees facilitate optimal contracting or whether CEOs are able to capture the pay-setting process and inflate their own remuneration. During the period of our sample, companies reformed the composition of their boards in line with institutional guidance. This resulted in an increase in the proportion of independent non-executive directors available to serve on the remuneration committee. Under a rents capture model, independent non-executive directors might be more resilient to capture by the CEO and thus we would expect less favourable remuneration packages for the CEO, *ceteris paribus*.

Prior studies have arrived at different conclusions regarding the importance of independence in the pay-setting process. Chapter 2 examines the econometric specifications of these studies in order to determine the extent to which prior findings are sensitive to the chosen methodology, before building towards a final preferred estimator. The sample used in this chapter contains several important features which enable thorough examination of the issues. These details were often lacking in prior studies. In particular, we have access to a more comprehensive assessment of non-executive directors' independence than previously available in the literature.

Chapter 3 explores the tenure and mode of exit of Chief Executives from FTSE 350 companies from 1996-2005. Prior studies have applied logit models to predict CEO turnover. However, this chapter uses duration analysis within a competing risks framework to evaluate the threat of dismissal faced by CEOs. This framework explicitly allows for multiple exit states and thus, unlike a logit model, recognises the different risks from all causes (retirement, headhunted, dismissal, etc) until exit to one destination occurs, or the CEO is censored by the end of the sample period. Explanatory variables, such as total shareholder

return and measures of the CEOs entrenchment are found to impact on the different exit states in different ways. Some evidence is found to suggest that CEOs are able to entrench themselves in their position. Evidence is also presented on whether or not the reform of UK corporate governance that occurred over the duration of the sample has made CEO turnover more likely.

Chapter 4 investigates the extent to which shareholders play a pro-active role in the governance of their companies. Under the Jensen and Meckling (1976) model, governance devices will be employed up to the point where their marginal benefit equates with the marginal cost of such measures. However, given typically dispersed shareholders with low individual incentives to monitor managers it might be assumed that active participation in the decision making process is unlikely. Yet over the last 15 years, institutions have been encouraged to play a more active role and companies have been put under pressure to offer more opportunities for shareholder participation¹⁶. The premise of these reforms is that more engagement with shareholders will reduce deviant behaviour by management, improve the governance of companies and result in greater returns for shareholders. In particular, the Hampel (1998) and Myners (2001, 2004) reports have called for greater levels of shareholder voting. Voting is cheap for shareholders and therefore perhaps the first form of activism that might be undertaken. The work in chapter 4 represents the first formal analysis of shareholder votes with panel data. The voting results at shareholder meetings are analysed in order to determine whether they have any bearing on future governance arrangements or shareholder returns.

In addition, in order to provide a comparison between voting and undertaking more direct engagements, chapter 4 conducts an event study concerning the market's reaction to a forced CEO departure¹⁷. Shareholders of an under-performing company might wish to remove the CEO by placing pressure on the board to take action. The average abnormal returns around the time of such an event provide an indication of whether this is a worthwhile activity or not. We also repeat the exercise for the CEOs who retired and for those who were headhunted.

Chapter 5 examines the distribution of pay between executive directors. The distribution of boardroom pay has the potential to provide insights into tournament theory. In particular, we seek to understand the impact of a CEO succession event from the perspective of the existing executive directors. Executive directors who are passed over for promo-

¹⁶See Schedule D of the Combined Code (2006).

¹⁷Thereby, making further use of the different categories of CEO exit identified in chapter 3.

tion may suffer a loss in promotion incentives if they are either too old or unsuited to participate in the next succession competition. A loss in promotion incentives might be associated with an increase in remuneration if the director was previously sacrificing a proportion of their marginal product for the prospect of winning the promotion. If there is no compensation when a defeat occurs, then the director will face a strong incentive to earn their marginal product elsewhere. This introduces the possibility of an interesting paradox whereby the differential between the first and second prizes might be reduced, partially negating the original promotion incentive.

Alternatively, being passed over for promotion may reduce external promotion opportunities, which may moderate these effects. These factors may also have interesting interaction effects with the age of the directors, as younger directors may participate in future promotion competitions. We explore these hypothesis by analysing the impact on executive remuneration and the likelihood of exit when a CEO succession event occurs. Conclusions, policy implications, suggestions for future research and final thoughts are brought together in chapter 6.

Chief Executive Pay and Non-executive Director Independence

'All of the Company's directors are independent, and the Audit, Nominating and Corporate Governance, Finance and Risk, and Compensation and Benefits Committees are composed exclusively of independent directors.'

Lehman Brothers Annual Report 2007.

2.1 Introduction

The debate concerning the nature of the pay-setting process at the highest level in organisations has received renewed interest in recent times. Two principal lines of thought from the US are being advanced: Optimal contracting theory suggests that executive directors' remuneration contracts are determined in a way that optimises shareholders' desire to recruit, retain and motivate executives of the appropriate calibre against the cost of such contracts. In contrast, some have argued that due to managerial rent seeking, remuneration contracts are sub-optimal and inflated in favour of executive directors. This is an unresolved agency problem which stems from the fact that powerful managers might be able to capture the pay-setting process¹.

The research programme in the UK has been undertaken in a different context. UK executive directors earn a fraction of their US counterparts (Conyon and Murphy, 2000).

¹Typical of this debate is Core, Guay, and Thomas (2004)'s defence of optimal contracting following Bebchuk and Fried (2004)'s critique of remuneration practices in the US.

UK executives have not been accused of widespread option backdating (Bebchuk, Grinstein, and Peyer, 2006). The archetypical governance scandals in the US (Enron, Tyco and WorldCom) are relatively fresh in the mind whereas the UK scandals of the 1980s (Maxwell Communications, Polly Peck) belong to a different era and have been followed by a reforming agenda throughout the 1990s. These reforms were designed to drive greater corporate accountability (Cadbury, 1992) improve the pay-performance relation particularly avoiding reward for failure (Greenbury, 1995) improve transparency (Combined Code, 1999, 2003), increase institutional shareholder participation (Myners, 2001, 2004) and strengthen the role of the non-executive director, particularly independent non-executive directors (Higgs, 2003). See Solomon (2007) for a review.

However, UK executive remuneration arrangements have not gone uncriticised. The disparity between executive directors' pay rises year on year against general rises in earnings has been highlighted by Trade Unions, generating media hostility (Thompson, 2005); academics have found the pay-performance relation to be vulnerable when the market turns down (Gregg, Jewell, and Tonks, 2005); a positive impact of mergers to Chief Executive remuneration has been found even when those mergers did not enhance shareholder value (Girma, Thompson, and Wright, 2002); and there is evidence of the 'ratcheting' of pay where executives get at least the going rate and that deviations above that rate will influence subsequent pay (Ezzamel and Watson, 2002). Following the onset of the present financial crisis, uncapped annual bonuses in the financial service sector have been heavily criticised. Therefore, a natural line of inquiry is to investigate whether the pay-setting process has been captured by insiders.

This chapter contributes to the evidence on whether UK CEOs extract rents by capturing the pay-setting process by using data on FTSE 350 companies 1995-2005. This sample has a number of important details including the identification of each board member, their precise service dates and each element of their remuneration package. Prior research has arrived at different conclusions regarding the importance of director independence in relation to CEO remuneration. Our sample will allow a thorough examination of the issues associated with econometric specification and will seek to determine which methodological choices are important in the estimation of CEO remuneration. In addition, this research addresses issues associated with the assessment of non-executive director independence. The chapter will build towards a preferred estimator to provide robust tests of the optimal contracting and rent extraction hypotheses. The following section briefly reviews the literature and sets up the propositions to be investigated. The methods, with a particular

focus on independence assessment, are addressed in section 2.3. A descriptive overview of the data and the results are provided in sections 2.4 and 2.5 respectively. Section 2.6 concludes.

2.2 Literature Review

The board should include a balance of executive and non-executive directors (and in particular independent non-executive directors) such that no individual or small group of individuals can dominate the board's decision taking...The board should establish a remuneration committee of at least three, or in the case of smaller companies two, members, who should all be independent non-executive directors.

Combined Code (2003) A.3 Main Principle and Provision B.2.1.

Principle A.3 of the Combined Code (2003) indicates that, left unchecked, executive directors could potentially redirect company resources to pursue objectives at the expense of shareholders (Jensen and Meckling, 1976). This accusation has recently been restated by Bebchuk and Fried (2004) who focus on executive remuneration, which is one of the more visible areas in which a conflict of interest may occur. Given this conflict, Provision B.2.1 reflects shareholder expectations that the composition of the remuneration committee, the sub-committee of the board that is responsible for setting executive directors' pay, should be sufficiently independent to withstand capture.

However, the presence of a remuneration committee may not necessarily solve the problem. Theoretically, we would model the presence of a remuneration committee by a simple extension of the familiar two-tier principal-agent contract, in which the pay-setting process is delegated to another supervisor. Under such a three-tier model, the supervisor faces the decision of whether to act on behalf of the principal or collude with the agent (Kofman and Lawarree, 1993; Conyon and He, 2004) and the outcome will depend on the incentives that the supervisor faces.

Optimal contracting theory predicts that shareholders anticipate agents' incentives to pursue objectives without reference to shareholder interests and therefore take actions ex-ante to ensure optimal outcomes (Mirrlees, 1976; Holmstrom, 1979; Murphy, 1999; Gugler, 2001). Optimal contracting assumes shareholders retain control over the composition of the board. Consequently, the observed board structure is the optimal arrangement for the Company, as being part of the optimal contract negotiated between principals and agents which also specifies the optimal level of pay (Core, Holthausen, and Larcker, 1999). Note that since the introduction of the Directors' Remuneration Report Regulations (2002), the board has been obligated to propose its remuneration report before shareholders at the company's annual general meeting. Even prior to this act, shareholders voted on the

appointment and re-election of the directors, as well as the executive directors' equity incentive schemes. These votes could be interpreted as direct approval from the principals for the agents' contracts.

Under a three-tier agency model, shareholders also anticipate that remuneration committees face a decision to serve managers or shareholders and will therefore take actions to ensure remuneration committees have sufficient incentives to withstand the attempts by management to capture the pay-setting process and instead act on behalf of shareholders. The structure of the remuneration committee is then predicted to be the product of optimal contracting and consequently remuneration committees will set pay at a value that optimises on behalf of shareholders. Therefore, optimal contracting predicts that only the factors affecting the demand for executive directors of a given quality should be significant in the determination of pay (Core, Holthausen, and Larcker, 1999). Structural variables such as the proportion of independent non-executive directors serving on the board and remuneration committee should be insignificant, providing the estimating equation is correctly specified. This leads to the testable hypothesis:

Proposition 1: *If remuneration contracts are determined optimally, the composition of the supervisor will have no bearing on the level of remuneration of the CEO.*

In the context of the pay setting process, the supervisor may be viewed either as the remuneration committee, or the entire board. Under a rents capture type model, the observed board structure is inefficient due to unresolved agency problems, leading to sub-optimal outcomes (Bebchuk and Fried, 2003). Similarly, if the incentives of the remuneration committee are not sufficient to withstand the rational attempts of executives to capture the pay-setting process the outcome will be that there are inefficient remuneration contracts which are inflated in favour of executive directors and, in particular, the CEO. Bebchuk and Fried (2004) in the context of US companies, pronounce

'Flawed compensation arrangements have been wide-spread, persistent and systemic, and they have stemmed from defects in the underlying governance structure that enable executives to exert considerable influence over their boards. Given executives' power, directors could not have expected to engage in arm's-length bargaining with executives over their compensation (preface, ix).'

The severity of unresolved agency problems may be predicted to vary as the composition of boards and remuneration committees vary between companies and over time. Although

Bonet and Conyon (2005) concede the potential for economic benefits (e.g. information advantages) to arise through the presence of an executive director on a remuneration committee they regard the potential costs of executive presence as dominant. Intuitively, one would expect that a remuneration committee comprising exclusively independent non-executive directors be more resilient to capture than a committee full of insiders. From accepting such a theoretical perspective, the alternative hypothesis follows:

Proposition 2: *Ceteris paribus, fewer independent non-executive directors will lead to sub-optimal contracts².*

A full empirical review of executive remuneration is not attempted here. Comprehensive reviews of the literature are provided by Murphy (1999), Gomez-Mejia and Wiseman (1997), Jensen, Murphy, and Wruck (2004), and Prendergast (1999), while Bruce and Buck (2005) provide a brief review for the UK. Tosi, Werner, Katz, and Gomez-Mejia (2000) perform a meta-analysis with 137 papers on CEO pay and conclude that firm size accounts for more than 40% of the variance in total CEO pay while firm performance accounts for less than 5% of the variance. However, out of the many works that investigate executive remuneration, only a handful have given serious thought to the role of the board and the remuneration committee in pay determination³. These are summarized in table 2.1.

Table 2.1 shows that four of the nine studies suggest some support for the rents capture model. It is clear, however that there is considerable disagreement within the empirical literature as to the importance of the composition of the supervisor in pay determination. Given the lack of consensus, we are particularly mindful of the importance of econometric rigour in our study. Moreover, it is possible that a publications bias exists, whereby it is more difficult to publish support for the null hypothesis of no relationship between independence and executive remuneration.

Table 2.1 also shows the extent to which the studies have adopted different econometric specifications. It remains possible that the diversity in results can be attributed to the different estimating strategies employed. The studies vary across the following dimensions:

1. The econometric specification of the model;
2. The criteria for independence;

²This chapter believes that inefficient contracts are revealed by unexplained higher pay levels for Chief Executives.

³Bonet and Conyon (2005) identify over 300 studies since 1990 on executive remuneration but only find 10 with the main focus being the pay-setting committee.

Table 2.1: Empirical Literature

Study	Sample	Economic specification		Results	Comment
		Dependent Variable(s)	Explanatory Variables(s)		
Bonet & Conyon (2005)	504 UK plcs 1999- 2002	Ln (director emoluments) Random Effects Estimator	a) No. insiders on rem com b) Any insider on rem com	a) 0.163** (-2.54) b) 0.241* (-1.88)	'Tentative and qualified' support for rents capture.
Conyon & He (2004)	455 IPO US Firms 1998-2001	Ln (CEO total remuneration) OLS Regression	a) Optimal contracting variables b) Rents capture variables	ai) -0.03 (-0.24) aia) -0.15* (-1.83) aiaii) 0.01** (3.32) bi) 0.38 (1.51) bii) 0.05 (0.29) biii) -0.01 (-0.07)	Optimal Contracting model preferred.
Anderson & Bizjak (2003)	110 US Firms 1985-1998	Ln (sal + bonus + incentives) Within Estimator	On remuneration committee a) % Insiders b) Combined Ch/CEO	a) 0.131 (0.47) b) -1.164** (3.38)	No insider effect Combined Ch/CEO lowers remuneration.
Core Holthausen & Larcker (1999)	205 US Firms 1982-1984	Total CEO Remuneration OLS Regression	a) Combined Ch/CEO b) Board size c) Board insiders d) Gray directors	a) 152,577** (2.86) b) 30,601** (3.51) c) -5,639** (-3.22) d) 7,356** (3.19)	Power variables determine pay Support for rents capture
Newman & Mozes (1999)	161 US Firms 1991-1993	1. Ln (CEO total pay) 2. Change total pay OLS regression	a) =1 if rem com 'insider influenced' firm b) Insider influence & falling market value	1a) 0.135 (1.35) 2b) -0.0007 (-3.561)**	CEO pay shielded . from poor performance. Some support for rents capture.
Benito & Conyon (1999)	211 UK companies 1985-1994	Ln (emoluments) Within Estimator	a) Adoption of rem com b) Adoption of Nom com c) Separate Ch&CEO	a) 0.0063 (0.23) b) 0.0119 (0.35) c) 0.0471 (1.52)	No evidence of governance variables impacting cash compensation.
Daily, Johnson Ellstrand & Dalton (1998)	194 large US Firms 1992-1994	Ln (total pay) MLE Regression	On rem com... a) % gray directors b) % cross directorships c) % CEO members	a) -0.05 b) 0.05 0.05	Standard errors not reported. Power variables statistically insignificant.
Conyon & Peck (1998)	94 large UK plcs 1991-1994	Ln (HPD salary + bonus) Within Estimator	a) Board outsiders b) Rem Com Outsiders c) Adopted Rem Com d) Combined Chair/CEO	a) -0.499 (-0.74) b) 0.692* (2.91) c) 0.061 (0.77) d) -0.035 (0.67)	Outside directors increase not decrease remuneration.
Conyon (1997)	213 UK plcs 1988-1993	Ln (HPD emoluments) GMM	a) Adopted a rem com b) Separated Chairman/CEO	a) -0.026*(-2.13) b) -0.007 (0.46)	Support for rents capture Adoption of rem com leads to lower pay.

T-statistics in the parentheses (coefficient divided by standard errors if original paper reports standard errors).

** Significant at 5%; * Significant at 10%

Rem Com = Remuneration Committee; Nom Com = Nomination Committee; Ch=Chairman

3. The dependent variable;
4. The variable of interest (board or remuneration committee); and
5. Composition of the sample (in terms of time and firm type).

We seek to examine the relative importance of these various choices. In this study, we use a unique dataset from Manifest Information Services Ltd which offers a number of advantages over and above those used previously. No existing work has attempted to reconcile the conflicting results. Therefore, at the end of the exercise, we should be able to state with greater confidence which methodological choices are important and whether the rents capture model or the model of optimal contracting presents the most accurate model of executive directors' pay determination.

2.3 Method

2.3.1 Economic specification

We seek to explain executive remuneration using a model of the following form:

$$(Remuneration)_{it} = \gamma_i + \alpha_t + \beta(Supervisor)_{it} + \lambda(Controls)_{it} + \mu_{it} \quad (2.3.1)$$

where γ is an unidentified firm specific effect for firm i which does not vary over time, α_t is a time trend, supervisor is a vector of variables associated with the board or remuneration committee (e.g. % insiders), Controls is a vector of controls such as performance and firm size, and β and λ are the corresponding coefficients. Under proposition 1, $\beta=0$.

Firm Fixed Effects

Datasets used in the existing literature are either cross sections or short panels. Panels have a number advantages over cross-sections: First they typically contain more observations; second and more importantly, they have potential to model the dynamics of the pay-setting process; and third are able to control for firm fixed effects. Firm fixed effects could include a risk premium associated with a particularly company. (In cross-section, these fixed effects are often ignored which is akin to omitting dummy variables for each company

in the sample Conyon, Peck, and Sadler (2000). Therefore, researchers, in particular, Murphy (1985) have questioned the validity of prior cross sectional pay regressions).

To obtain consistent estimates of β in the presence of the unobserved time-invariant heterogeneity correlated with a regressor, first difference or ‘fixed effect’ (within estimator) estimation techniques may be employed.

For an equation of the form:

$$y_{it} = \alpha_i + \mathbf{X}'_{it}\beta + \mu_{it} \quad (2.3.2)$$

Where α_i is the fixed effect,

$$y_{it} - y_{i(t-1)} = (\mathbf{X}_{it} - \mathbf{X}_{i(t-1)})'\beta + (\mu_{it} - \mu_{i(t-1)}) \quad (2.3.3)$$

first differencing eliminates the fixed effect.

The ‘within’ estimator measures the association between individual-specific deviations of regressors from their time-averaged values and individual-specific deviations of the dependent variable from its time-averaged value (Cameron and Trivedi, 2005). By exploiting the individual variation over time, the fixed effect is eliminated.

$$y_{it} - \bar{y}_i = (\chi_{it} - \bar{\chi}_i)'\beta + (\mu_{it} - \bar{\mu}_i) \quad (2.3.4)$$

Both the within estimator and the first differences estimator rely on variation over time to eliminate the fixed effect. Therefore, a limitation of both estimators is their inability to identify time-invariant regressors. For instance, regressors such as firm sector are not identified since if $\chi_{it} = \chi_i$ then $\bar{\chi}_i = \chi_i$ so $\chi_{it} - \bar{\chi}_i = 0$. Similarly $\chi_{it} - \chi_{i(t-1)} = 0$.

The first difference and within estimate will produce identical estimates if $T = 2$. When $T > 2$, the choice between first differencing and the within estimator depends on assumptions made of μ_{it} (Wooldridge, 2002). If the μ_{it} are serially uncorrelated the within estimator is more efficient, while the first difference estimator is more efficient when μ_{it} follows a random walk. If the within estimator and first differences estimator differ in ways that cannot be attributed to sampling error, then one should be suspicious that the regressors aren’t strictly exogenous, possibly due to measurement error, time-varying omitted variables or simultaneity.

Alternatively, it is sometimes proposed that the individual effects are random variables distributed independently of χ_{it} (Mundlak, 1978). If such a restriction holds, then a ran-

dom effects model can be employed (Bonet and Conyon, 2005). In a random effects model some omitted variables may vary between individuals (but be constant over time) or vary over time (but be constant between individuals). Unlike fixed effects models, random effects allows the identification of the marginal effects of time-invariant independent variables. Unfortunately, the strong assumption of the random effects model that the expectation of α_i given χ_{it} is constant is unlikely to hold in practice (Nickell, 1981). A Hausman test can be used to discern between random and fixed effects models.

Individual Director Fixed Effects

In addition to firm fixed effects, it is possible that there are unobserved fixed effects associated with the individual directors in the sample. Individual fixed effects could include the director's human capital, status or their access to valuable networks. Therefore, equation 2.3.1 can be re-written as:

$$(Remuneration)_{ijt} = \gamma_i + \delta_j + \alpha_t + \beta(Supervisor)_{ijt} + \lambda(Controls)_{ijt} + \mu_{ijt} \quad (2.3.5)$$

where δ_j is a time-invariant unobserved effect specific to director j. The majority of prior panel studies have not identified the individuals and so have not controlled for δ_j . The only previous study that controls for individual effects is Bonet and Conyon (2005) who use a random effects estimator. However, Manifest's data offers a significant advantage over Bonet & Conyon's data in that, Manifest has identified the individual from the inception of its database and one is able to track individual movement between firms. It is therefore possible to control for both firm and individual fixed effects.

Lagged Dependent Variable

Empirical evidence suggests that directors' pay does not adjust immediately (Main, Bruce, and Buck, 1996; Conyon, 1997; Daily, Johnson, Ellstrand, and Dalton, 1998; Conyon, Peck, and Sadler, 2000). To control for this dynamic feature of CEO pay determination we might wish to include lagged pay as a further explanatory variable. However, with a lagged dependent variable on the right hand side of the pay equation, the use of the within estimator will result in inconsistent estimates as the lagged dependent variable will be correlated with the error term (Nickell, 1981; Wooldridge, 2002; Cameron and Trivedi, 2005). The Generalised Method of Moments (GMM) provides a framework for estimat-

ing equations with such endogenous variables. Instrumental variables that are related to the explanatory variable but not the error can be used to isolate the variation that is not correlated with the error. Such instruments are easy to obtain in a panel context because deeper lags of the dependent variable (beyond $t-1$) can be used. Arellano and Bond (1991) provide a first-difference estimator that uses lags of the lagged dependent variable as an instrument for prior period pay. Arellano-Bond requires no second-order serial correlation in the first differenced errors and T must be greater or equal to 3.

Arellano and Bover (1995) and Blundell and Bond (1998) have enhanced the Arellano-Bond estimator to provide additional instruments. Lagged levels might be weak instruments for first differences, particularly for variables close to a random walk (Roodman, 2006). Arellano and Bover (1995) show that, if the original equation in levels is added to the system, additional moment conditions can be used to increase efficiency. For instance, prior period pay can be instrumented with lags of its own first difference. The resulting estimator developed by Blundell and Bond (1998) is known as 'system GMM' (as opposed to the original 'differenced GMM'). The two-step version of the estimator is used, together with Windmeijer (2005) corrected standard errors. This is desirable as improvements in efficiency can be made with the two-step estimator (Arellano and Bond, 1991). Monte Carlo studies have shown that the estimated asymptotic standard errors in finite samples are biased downwards and consequently Arellano and Bond do not recommend inference on the coefficients when the two-step estimator is used (Roodman, 2006). However, Windmeijer (2005) has developed a correction so that inference using these corrected standard errors is appropriate.

Performance Measure

An important specification issue is the performance measure. Researchers generally choose between an accounting (e.g. Earnings Per Share (EPS)) or market based (e.g. Total Shareholder Return (TSR)) performance measure but neither is theoretically dominant. A market based measure might be preferred because it more accurately reflects the objective function of shareholders and is not subject to accounting conventions or other vagaries of accounting measures (Conyon, Peck, and Sadler, 2000). Alternatively, an accounting measure is not as vulnerable to market fluctuations.

In addition, it is theoretically unclear whether it is the level of performance or performance growth which is more appropriate in a remuneration equation. Both formulations have

appeared in the literature (Conyon, Peck, and Sadler, 2000).

Moreover, the literature has included both pre-dated performance measures (Gregg, Machin, and Szymanski, 1993) and contemporaneous performance measures (Newman and Mozes, 1999). Pre-dated performance measures have the advantage of being less ambiguous with respect to the direction of causality but are less powerful in explaining current remuneration levels, particularly given that company accounts report on an annual basis in arrears. They also tend to reduce the sample size considerably as panels are generally unbalanced. There is also an issue of the actual timing of when executives are rewarded. In general, salaries are reviewed towards the start of the financial year while bonus payments are paid at the end of the financial year or subsequent to the year end. Options and shares awards are granted within 42 days of the announcement of results. Therefore, care is needed when made making inferences about the coefficient of the performance variable.

Functional Form

The functional form of the estimating equation is also potentially significant. All the studies in table 2.1, other than Core, Holthausen, and Larcker (1999), express the dependent variable and performance variable in logarithms. When the log form is used, the performance co-efficient will represent pay-performance elasticity; otherwise the performance co-efficient will represent pay-performance sensitivity (Murphy, 1999). The literature generally regards the choice of functional forms of secondary importance and is normally motivated by the economic interpretation sought by the author. However, Daily, Johnson, Ellstrand, and Dalton (1998) cite Tabachnik and Fidell (1996) who suggest that skewed pay distributions can weaken statistical relationships and lead to heteroscedasticity. Murphy (1999) also notes that models in logarithms generally provide a better fit.

2.3.2 Independence

Mis-specification might also result from omitted independent variables or measurement error. Of particular concern is that past work has relied on blunt distinctions of independence such as an insider/outsider classification. For example, a remuneration committee might have been deemed wholly independent notwithstanding the fact that members shared cross directorships with the CEO, enjoyed certain business relationships with the company or served on the board for over nine years. With the application of the Manifest

data to the problem, one should be able to provide the fairest test possible of the rent's capture model.

Table 2.2 shows that there is considerable variation in the literature as to the classification of an insider. In the UK, directors are classified as 'independent' or 'not independent' following the guidance of Combined Code (2003). In the US literature three categories for directors appear: 'insider'; 'affiliated/grey'; and 'outsider'. Insiders are those employed by the firm, retired from the firm or immediate family members. Affiliated directors are those with a material business relationship with the firm. Core, Holthausen, and Larcker (1999) and Newman and Mozes (1999) also consider directors affiliated by a cross directorship not to be outsiders. For comparative purposes, affiliated directors in US studies are considered not independent/insiders in the table below.

The Combined Code (2003) gives a non-exhaustive list of potential factors that might compromise the independence of a non-executive director's character and judgement. Such factors include: familial or material business associations with members of the management and length of service. The Code expects the board to state the independence of each director and to explain situations where they consider a director independent in light of such factors. There is an obvious incentive for boards to declare their directors independent even when such a claim might be considered dubious. Further, as boards enjoy superior information over shareholders, one suspects that boards are capable of establishing and maintaining an illusion of independence. Studies that only take the Company's statement on independence as the measurement of board or remuneration committee independence are therefore likely to be limited. In addition to recording the Company's assessment of non-executive director independence, Manifest conducts its own assessment. Manifest's independence assessment is based around the guidance of the Combined Code (2003) but includes an element of flexibility. While a board might claim that they are in a better position to assess the character and judgement of each director, one suspects that the conflict of interest they face outweighs the superior information they possess over Manifest.

Table 2.3 provides a comparison of the Company's and Manifest's independence assessments. An 'insider' is an executive director or a non-executive deemed not to be independent. Over the whole sample period, more than 50% of companies assert that all their non-executive directors are independent whereas Manifest regards only 25% of companies as having entirely independent directors. This divergence is due to the more rigorous

Table 2.2: Independence Characteristics

Study	Considered an Insider in Study?								
	% Insiders on Board	% Insiders on Rem Com	Executive Director	Former Employee Relationship	Material Business	Family Tie	Major Shareholder	Cross Directorship	Tenure
Bonet & Conyon (2005)	49.40%	4.40%	Yes	No	No	No	No	No	No
Conyon & He (2004)	32.70%	5.64%	Yes	Yes	No	No	No	No	No
Anderson & Bizjak (2003)	Not Reported	40.7% (85-93) 24.1% (94-98)	Yes	Yes	Yes	Yes	No	No	No
Core Holthausen & Larcker (1999)	42.90%	Not Investigated	Yes	Yes	Yes	Yes	No	Yes	No
Newman & Mozes (1999)	Not Reported	16.90%	Yes	Yes	Yes	No	No	Yes	No
Daily, Johnson Ellstrand & Dalton (1998)	Not Reported	Not Reported	Yes	Yes	Yes	Yes	No	Yes	No
Conyon & Peck (1998)	52.70%	11.00%	Yes	Yes	No	No	No	No	No
Company Own Assessments	48.10%	6.70%	Varies	Varies	Varies	Varies	Varies	Varies	Varies
Manifest's Assessments	60.80%	27.20%	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 2.3: Independence by Company vs Independence by Manifest: 1995-2005

Variable	N	Mean	St Dev	Median
Board size	5258	8.33	2.9	8
Number of non-executive directors	5258	4.7	2.1	4
Insiders (Company)	5258	48.10%	19.80%	50%
Insiders (Manifest)	5258	60.80%	19.40%	62.50%

application of the provisions of the Combined Code⁴.

Table 2.2 shows that Manifest's assessment of independence is the most demanding assessment. This reflects the fact that Manifest's independence assessment is based on UK institutional guidance and the Combined Code which provides a more stringent assessment of independence than previously used in the literature. Therefore if prior research has failed to support the rent's capture model of pay determination from a lack of variation between companies, Manifest's assessment of independence provides a more rigorous test.

2.3.3 Dependent Variable

In terms of the dependent variable there are two main issues. The first concerns the unit of analysis, and whether it is possible to identify individuals and, therefore, director changes. The second issue concerns what elements of remuneration are included.

The UK studies in table 2.1 that were unable to identify individuals were forced to measure only the remuneration of highest paid director (HPD). The HPD does not identify an individual, nor even the same position, as the HPD may or may not be the CEO. The result is that these studies can not control for individual fixed effects (see section 2.3.1). An examination of HPDs' emoluments will systematically underestimate the true level of pay as the emoluments disclosed are amounts received during the financial period. If the CEO (who is likely to be the HPD on a pro-rata basis) only serves part of the year, then he will not be recorded as the HPD. Rather, the next highest paid director who has served the whole year (perhaps the Finance Director) will be taken instead. If the entire board changes during the financial year then a very low figure for the HPD will be recorded. Therefore, director movement will artificially depress the dependent variable and the marginal estimates of the regressors will be inconsistent if director appointments and resignations are correlated with the regressors. Only if individuals are identified can

⁴Prior to the establishment of the Combined Code, Manifest's independence assessment was based on institutional guidance and best practice which was not materially different guidelines in the Code.

Table 2.4: Full Remuneration Data - One Company

Individual	Year	Position	Salary (Pro-rata)	Salary (Disclosed)	Golden Handshake	Golden Goodbye
Bob	1997	CEO	200	74		
Bob	1998	CEO	250	250		
Bob	1999	CEO	350	25		600
Henry	1997	FD	150	150		
Henry	1998	FD	200	80	500	
Henry	1999	FD				
Hamid	1997	CEO	300	275	500	
Hamid	1998	CEO				
Hamid	1999	CEO				
Kate	1997	FD				
Kate	1998	FD	250	180	50	
Kate	1999	FD	280	280		

one control for director changes.

In measuring remuneration, prior studies in the UK have been constrained by the disclosure regime prevailing over the period of analysis (Bruce and Buck, 2005). Since the Companies Act (1967), information has been publicly available on the emoluments of the HPD in the company. Emoluments comprise salary plus bonus and a cash valuation of perquisites. The measurement of the value of long term equity incentives has only recently become easily available since adoption of the Greenbury disclosure recommendations (1995). The majority of prior studies in the UK have therefore limited their investigation to the emoluments of the HPD.

The situation is further complicated by the practice of paying directors recruitment incentives and providing compensation for loss of office. These one-off payments are likely to increase the remuneration of the director in the years of his appointment and resignation, the very years in which it is unlikely that the director served a full 12 months.

For illustrative purposes, table 2.4 considers a simple company with two executive positions (CEO and FD), no equity based incentives or pension. Bob joins half way through year 1, hence his disclosed amount is less than his pro-rata salary. In year two, Henry is replaced by Kate and so both these directors serve less than 12 months in this financial year. Henry receives a golden parachute and Kate a golden hello. In year three Bob is replaced by Hamid.

A typical HPD study would reduce the data in table 2.4 to the data shown in table 2.5. Only in year three does the HPD correspond to the CEO of the Company and at no point

Table 2.5: Highest Paid Director Data - One Company

Position	Year	Salary	Emoluments
HPD	1997	150	150
HPD	1998	80	580
HPD	1999	275	725

does the HPD director pick up the highest salary on a pro-rata basis. In contrast, Manifest identifies an individual, his position and records the appointment and resignation dates and hence the richness of the data in table one is retained.

The emoluments of the HPD remained the standard disclosure on directors' pay until the early 1990s when shareholder institutions began to put pressure on public companies to improve the quality of their disclosure with respect to remuneration, consistent with the overall movement towards greater corporate accountability (Bruce and Buck, 2005). The Greenbury Report (1995) formally recommended that companies disclose the remuneration of each director and Conyon (1997) demonstrates that the adoption of these recommendations was quick and widespread. By 1995, it had become accepted practice to disclose the emoluments of each director together with detail on executive share options (ESOs) and long term incentive plans (LTIPs) in the annual report and accounts. The first year of Manifest's data collection occurred in 1995 and therefore from its inception Manifest was able to take advantage of the Greenbury Recommendations and collect data for all directors, and each aspect of pay⁵.

Lewellen and Huntsman (1970) were first to suggest that the examination of the whole board is the most appropriate basis for analysis. However, due to limits on the availability of data most studies have followed Lewellen and Huntsman (1970)'s example and adopted the pay of the CEO as a suitable surrogate for pay of the whole board. Main, Bruce, and Buck (1996) justify their extension from CEO pay to whole board pay in the context of company law and agency theory. In law, directors have equal duties and responsibility and therefore the whole board are 'agents' serving shareholders. The term 'CEO' describes a specific administrative role but it should be noted that the term 'CEO' is not applied universally across companies. For example, the 'Managing Director' of one firm may perform the role of the CEO, but in another firm there may be a CEO and separate Managing Director. For this reason, Manifest records both the job title described by the company and has a dummy variable stating whether or not the individual is the Chief

⁵Studies using data prior to 1995, required an exceptional amount of effort to collect data beyond the emoluments of the HPD. Indeed, Main, Bruce, and Buck (1996) mention, as an aside, the frustrations they experienced in acquiring information on share option grants.

Executive.

The pay-performance literature discusses the shortcomings of early research which failed to include a measure the value of equity based payments (Jensen and Murphy, 1990; Main, Bruce, and Buck, 1996). While options are a much less important component of remuneration in the UK compared with the US (Conyon and Murphy, 2000) and are more mechanically tied to the salary levels (Girma, Thompson, and Wright, 2004) they remain a very real and important pecuniary element in a director's remuneration package. By including equity based incentives in the calculation of total remuneration, one will reveal the impact, if any, of captured boards on the most inclusive measure of pay. Studies that only investigate short term elements are, nevertheless, interesting as there may be reasons to suggest that certain aspects of the remuneration package may be more easily manipulated by a captured remuneration committee than others.

2.3.4 Composition of the Supervisor Variable

The studies cited in table 2.1, focus attention on either the remuneration committee or the board as the third party in the pay-setting process. The Greenbury Report (1995) recommended that boards established a sub committee of the board⁶, comprising solely of non-executive directors to determine executive remuneration. The Combined Code (2003) has reinforced this recommendation suggesting that remuneration committees comprise exclusively independent non-executive directors. The whole board remains the ultimate authority for the functioning of the company and continues to bear the main responsibility for the pay arrangements of the executive directors. However, it is the members of the remuneration committee who undertake the actual task of setting pay, albeit being free to consult other board members providing no director gives specific advice in relation to their own remuneration. Therefore, it is natural for UK studies post Greenbury to focus attention on the composition of the remuneration committee and its ability to withstand capture.

However, it remains theoretically conceivable that the best proxy for a company's resilience to capture might be the composition of the board, not the remuneration committee. For instance, a captured board may satisfy investor expectations to fill the remuneration committee with token outside directors to legitimize biased pay arrangements. Therefore,

⁶Although Conyon and He (2004) have another variable to indicate the presence of a significant shareholder on the remuneration committee.

to provide the best test between optimal contracting and rents capture both the composition of the board and remuneration committee will be examined. One final practical issue is whether to model the composition of the board/committee in terms of percentage independence, the number of independent directors or as a dummy variable between having purely independent committee or a dominated committee. It remains possible that the results might be sensitive to this choice. For instance, one executive on the remuneration committee might enjoy superior information over his part time colleagues on the committee to the extent that he is able to capture the pay setting process. Whether or not another insider joins the committee, might, or might not be relevant.

2.3.5 Sample Composition

After attempting to consolidate the empirical results across the dimensions identified above, divergences may remain due to real differences in the populations from which the samples have been drawn. The samples vary in terms of the time period under observation, the sample sizes, and types of firms under consideration.

The longest time horizon in table 2.1 is Anderson and Bizjak (2003) which spans 13 years whereas five of the studies include only three years of data. The number of firms in the studies ranges from 94 to 504. In addition, it is reasonable to expect to differences in findings between studies that draw upon firms in the early 1980s (Core, Holthausen, and Larcker, 1999) to those who draw upon more recent firms (Bonet and Conyon, 2005).

Firm Type

It is possible that significant differences occur in the behaviour of different types of companies. It is reasonable to expect samples that cover different geographical locations, companies with different sizes, markets, ownership structures, corporate cultures and governance environments to return different results. However all studies in table 2.1, with the exception of Conyon and He (2004), look at large US or UK public companies whose behaviour one would expect to be reasonably similar. Conyon and He (2004) examine US companies that went public between 1998 and 2001. They identify that remuneration committees with venture capitalists and other large shareholders give CEO's lower pay and greater equity incentives but find no support for managerial capture of the board.

2.4 Data

2.4.1 Sample

The dataset used in this study comprises all companies that entered the FTSE 350 Index with any financial year end between 31st December 1995 and 31st December 2005. To avoid survivorship bias, companies that drop out of the index prior to 2006 are included in our coverage until the company is wound up or taken private. The period chosen is significant. As well as providing the most recent investigation in the literature, the data covers a full economic cycle, with market growth until 2001, subsequent decline and recovery. Moreover, the period under analysis is particularly interesting given the steady flow of corporate governance reforms designed to improve the transparency and accountability of boards and produce more efficient remuneration contracts. Investment trusts that contained no executive directors were excluded from the sample, although self-managed investment trusts were retained⁷. Manifest's data was supplemented in the return index and other control variables from Thomson Datastream. Some information was missing data with respect to Datastream's dead stock list. In addition, some corporate entities were recorded differently particularly if mergers or other corporate actions occurred⁸. This also lead to the loss of some entities in Manifests sample and a manual inspection of company names was undertaken to ensure Manifest and Datastream's company id variables matched companies correctly.

After losing 99 companies on merging Manifests and Datastream's data⁹, an unbalanced panel of 523 companies was left producing 4123 firm-years of remuneration data. 290 of the 523 companies had information for all financial years 1996-2005. To determine a unique time-period for the purposes of constructing the panel, the year of the end of the reporting period was used. However, if a company changed its reporting year-end it is possible to have two reporting period ends in one calendar year. In these cases, an adjustment was made based on the reporting month to ensure the year variable uniquely identified different time periods.

⁷Other than those boards without executive directors such as investment trusts.

⁸For instance when Glaxo Wellcome and SmithKline Beecham merged in 2000, Manifest assigned a new company id to the new entity GlaxoSmithKline, whereas Datastream placed SmithKline Beecham into its Dead list and renamed Glaxo Wellcome as GlaxoSmithKline (i.e. no new company id).

⁹The vast majority of the missing data was with respect to Datastream's dead stocks.

2.4.2 Descriptive Statistics

Table 2.6, summaries the key variables under analysis. All monetary values are adjusted for inflation and expressed in May 2006 prices. Note that since the panel is unbalanced, the growth figures do not compare exactly the same set of companies in 1996 and 2005. Salary was annualised where an individual did not serve a full 12 months (e.g. due to appointment or resignation during the year). Emoluments are the total cash amounts received by the director (i.e. salary, bonus, benefits, vested deferred bonuses, vested LTIPs or exercised options). Total remuneration is the expected value of remuneration related to the year under review and includes an estimate of the fair value of equity based incentives at grant date.

The accurate measurement of the value of executive equity incentives is an important issue. Studies such as Main, Bruce, and Buck (1996) have applied a sophisticated option evaluation methodology such as Black and Scholes (1973) or a binominal method Cox, Ross, and Rubinstein (1979). These models generate a theoretical price for an option grant based on: the company's share price at grant date, share price volatility, and dividend yield; the exercise period and price; and the risk free rate. Under new international accounting regulations (IFRS-2 Share Based Payments) these methods are used in the pricing of options in company financial statements.

However, both the Black-Scholes and binominal approaches are limited. They assume the underlying asset returns follow the normal distribution (i.e. the underlying asset prices are distributed lognormally) which may or may not be reasonable and historical measures of price volatility must be used to estimate future volatility. Yet even more problematic is the absence of individual risk parameters in these standard valuation methodologies. Murphy (1999) shows how option valuations are sensitive to even small variations in the executive's aversion to risk. Further, Hall and Murphy (2000) describe how the standard methods evaluate the cost of the option to the firm, the value of which may be significantly different from the value to which an undiversified executive would place on his non-tradable option. A potential solution is given in Hall and Murphy (2002) where a certainty equivalence approach is developed to derive for what price an executive would swap their incentives. However, this method requires assumptions about each executive's preference for risk and their non firm-related wealth. We do not have access to such information.

In addition, none of the standard models consider the impact of performance conditions. Performance conditions reduce the probability of vesting and therefore the present ex-

Table 2.6: Descriptive Statistics

Key Variables		1996-2005 (Pooled)	1996	2005	% Growth 1996-2005
N (firm years)		4123	350	342	
Total board board remuneration (£)	Mean	2,850,902	1,981,284	3,892,381	96.46
	St Dev	2,970,435	1,732,762	3,581,674	
	Median	1,972,352	1395651	2733443	95.85
Executive director total remuneration (£)	Mean	575,689	359,167	907,778	152.75
	St Dev	586,496	257,042	760,074	
	Median	420,406	303,868	675,768	122.39
Executive director salary (£)	Mean	274,219	223,504	346,148	54.87
	St Dev	134,895	111,946	148,591	
	Median	246127	204802	318572	55.55
Board Size	Mean	8.80	8.86	9.12	2.93
	St Dev	2.80	2.96	2.56	
	Median	8	9	9	0
No NEDs	Mean	4.70	4.33	5.52	27.48
	St Dev	2.06	2.16	2.01	
	Median	4	4	5	25
% Insiders on board (Company)	Mean	.522	.571	.454	-20.49
	St Dev	.145	.148	.124	
	Median	0.5	0.509	0.444	-12.77
% Insiders on board (Manifest)	Mean	.634	.675	.540	-20
	St Dev	.159	.155	.144	
	Median	0.629	0.667	0.5	-25.04
% Insiders on remuneration committee (Company)	Mean	.064	.103	.029	-71.84
	St Dev	.165	.230	.121	
	Median	0	0	0	
% Insiders on remuneration committee (Manifest)	Mean	.267	.319	.165	-48.28
	St Dev	.284	.296	.233	
	Median	0.25	0.273	0	-100
No NEDs where independence is not known		660	432	2	

1. Data ordered on firm-years. Please refer to table 2.7 for details of CEO remuneration.

pected value of the incentive but to what extent is unclear. Performance conditions vary dramatically such that ideally, the vesting conditions on each grant would be considered separately. Bruce, Udueni, Buck, and Main (2003) demonstrate how producing a truly objective estimate of the impact of performance conditions on present expected value is an almost impossible task, particularly when vesting depends on the performance of company peers. To complicate matters further, Bebchuk, Grinstein, and Peyer (2006) provide evidence for the opportunistic timing of option grants and Bebchuk and Fried (2004) identify the potential for opportunistic timing on exercise. Opportunistic timing would bias the value of any equity incentive calculated using the aforementioned pricing methods. In light of such uncertainty, Conyon and Murphy (2000)'s arbitrary discount of 20% when a performance condition is present, does not seem unreasonable. Our approach follows standard practice in the remuneration consultancy industry (MM & K Ltd, 2007) and calculates equity incentives as one third of their face value¹⁰. This is justified on the grounds that the cost of labour involved in employing a more sophisticated option methodology would be substantial to the point where it would outweigh any gain in accuracy.

Figure 2.1 shows the growth in salary, salary plus bonus and total remuneration respectively at median levels for executive directors (Figure 2.2 for CEOs) in the FTSE 350. The acceleration of UK Executive Directors' remuneration over this period is clearly seen, unlike in the US where the increase in pay is almost entirely explained by the explosion of stock options grants (Murphy, 1999), the mean growth in UK directors' remuneration is attributable to a 55% real increase in salary and a 150% increase in real total remuneration. It should be noted that median total remuneration in real terms did not decline following the market downturn post 2000, indeed its growth appears largely unaffected. These trends are consistent with those found in recent studies (Gregg, Jewell, and Tonks, 2005).

Figure 2.3 illustrates the changes in board composition over the period. While there is little movement in total board size, boards have comprised a significantly greater proportion of non-executive directors after 1999. This reflects the increasing pressure for companies to meet shareholder expectations of governance structure which are guided by the provisions contained within the Combined Code. Specifically, boards were recommended to comprise at least one-third non-executive directors and on revision of the Code in 2003 at least half non-executive directors (excluding the Chairman).

Figure 2.4 shows that the UK companies replaced insiders on the Board with independent

¹⁰The final results were not sensitive to reasonable changes in this value. See appendix for further details.

Figure 2.1: FTSE 350 Executive Remuneration 1996-2005

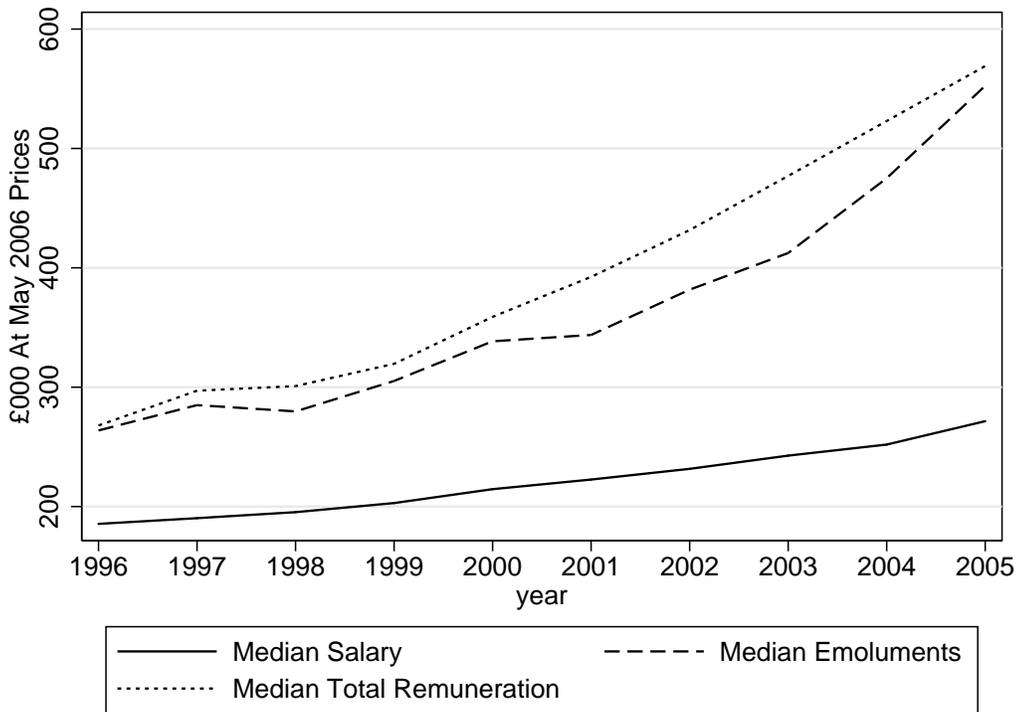


Figure 2.2: FTSE 350 CEO Remuneration 1996-2005

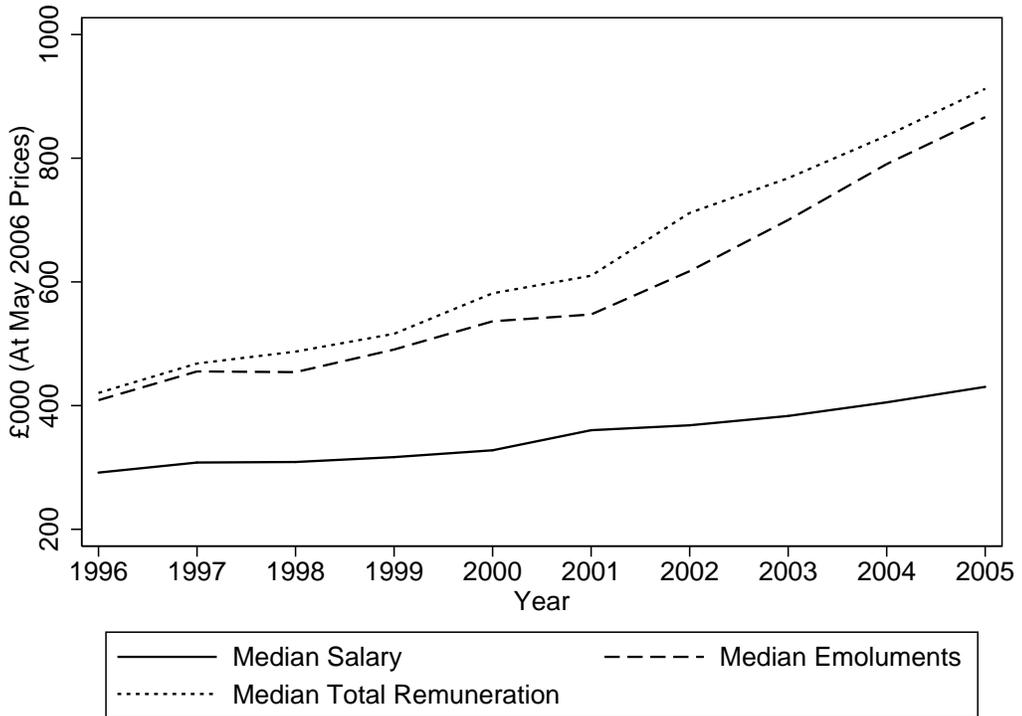
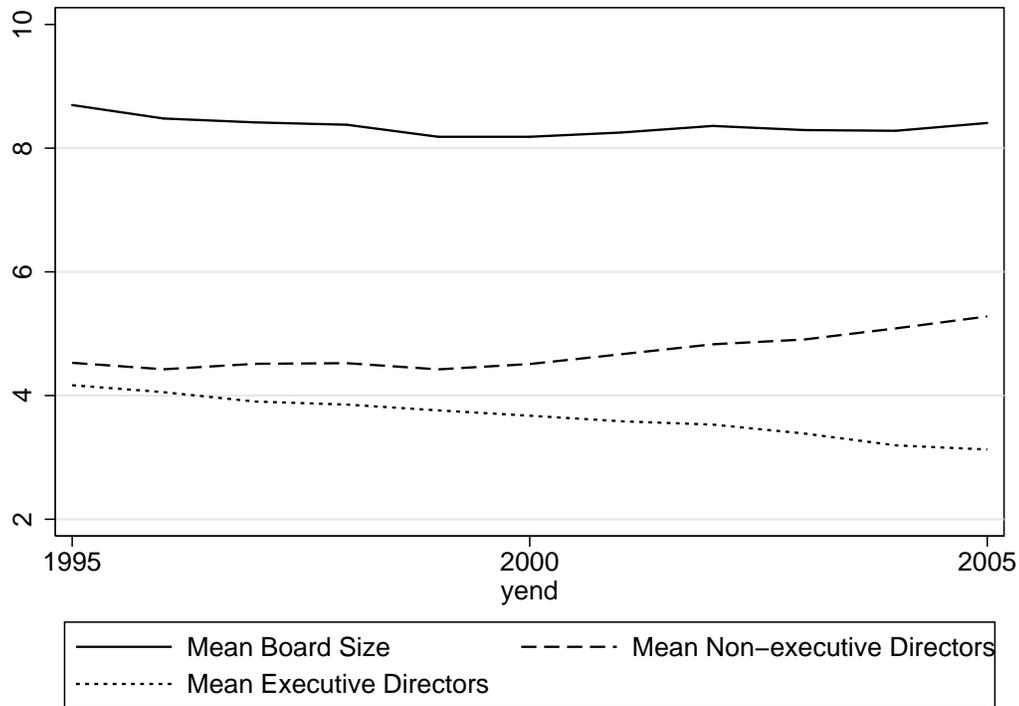


Figure 2.3: Board Composition 1995-2005

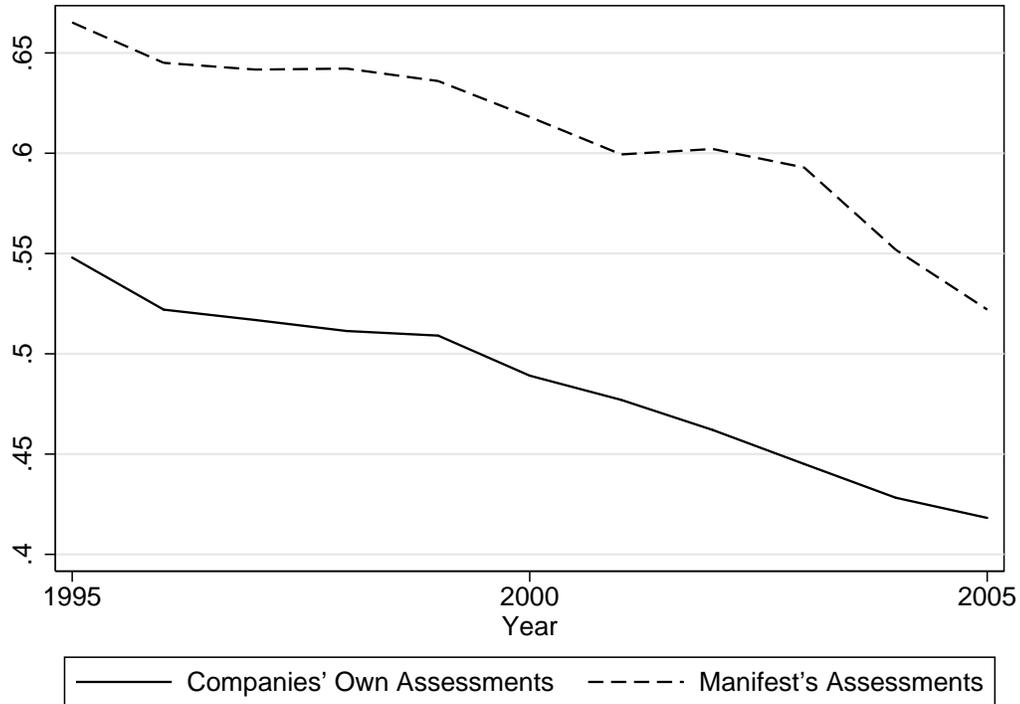


non-executive directors between 1995-2005. This reflects the voluntary adoption of the recommendations of Combined Code and increase adherence to institutional and investor guidelines. The trend is the same for both Manifest's assessments and the companies' own assessments. Considering the persistent above inflation increases in executive remuneration that occurred over the same period, we might expect that an increase independence will have, at best, a limited impact at reducing remuneration. Of course it remains possible that remuneration levels might been even higher had the increase in independence not occurred. Therefore, we will attempt to control for as many factors as possible in our analysis in order to isolate the effect of independence upon remuneration.

The quality of disclosure by companies on the independence of its directors is not even over the period. The percentage of individuals for which independence is unknown was 11.7% in 1996. This steadily reduced over the period to less than 5% by 2000 and less than 1% by 2003. The improving quality of disclosure over the period is itself an indication of the adoption of best practice and the Combined Code.

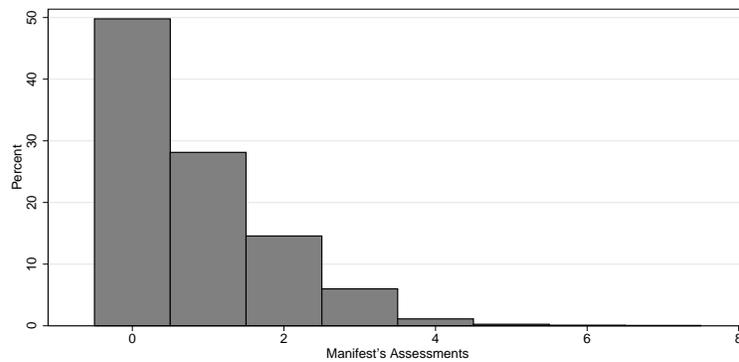
Figures 2.5 and 2.6 illustrate the difference between Manifest's and companies' own assessments of independence in terms of the number of insiders serving on the remuneration committees. Manifest's assessment is stricter, with approximately 50% of companies hav-

Figure 2.4: Fall in the Proportion of Board Insiders 1995-2005



ing at least one insider serving on the remuneration committee, while less than 20% of companies admit to having an insider on the committee. The graphs also show that the majority of remuneration committees have no insiders.

Figure 2.5: Number of Insiders on Remuneration Committee (Manifest)



Section 2.3 argued that datasets that were unable to identify the individual would systematically underestimated CEO remuneration. Table 2.7 shows the extent of this problem by comparing CEO remuneration to the measure of HPD remuneration. Using HPD pay as opposed to CEO pay captures 89% of the individuals and 92% of salary. However, the problem is not so severe when a total remuneration figure is taken. This study will report

Figure 2.6: Number of Insiders on Remuneration Committee (Company)

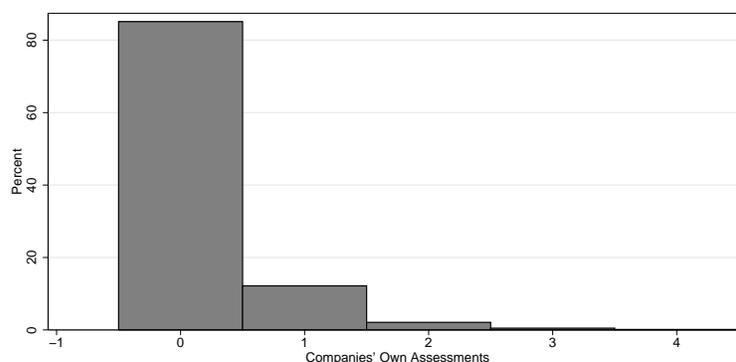


Table 2.7: Impact of Identifying the CEO on Remuneration

		HPD	CEO	HPD as % of CEO
N (Position years)		3979	4463	89.16%
Salary	Mean	354,837	383,179	92.60%
	St. Dev	(204,181)	(217,818)	
	Median	317,869	338,365	93.94%
Total Remuneration	Mean	824,596	852,624	96.71%
	St.Dev	(113,582,6)	(1,143,999)	
	Median	557,689	581,649	95.88%

Data ordered by Position.

results using a measure that accounts for the identification of the individual.

Having the individual identified allows one to track the movement of directors within the sample. 8434 individuals shared 13,979 director positions in the dataset. Of these 13,979 positions, 7,755 commenced at some point during the 10 year period. 76% of CEO appointments were filled by individuals with a directorship at another FTSE 350 company, with the majority being existing board members from the appointing firm. 41% of all executive appointments were filled by individuals with a directorship, again with the majority of these being existing board members.

The UK literature has found unanimously that company size is an important determinant of executive pay. The studies in table 2.1 measure company size as market capitalisation (Bonet and Conyon, 2005; Conyon and He, 2004) sales (Core, Holthausen, and Larcker, 1999), total assets (Anderson and Bizjak, 2003) and number of employees (Conyon, 1997). Table 2.9 summarises these variables.

Figure 2.7 shows the mean movement in company size of the FTSE 350 over the sample period. The divergence of turnover and market capitalisation¹¹ in the late 1990s reflects

¹¹The closing price on ordinary shares multiplied by the number of ordinary shares in issue as at the

Table 2.8: Director Appointments

	CEO Appointments		Executive appointments (inc CEO)		NED appointments	
	Number	Percentage	Number	Percentage	Number	Percentage
External	72	0.1099	333	0.1024	706	0.1567
Internal	427	0.6519	984	0.3026	458	0.1017
Within Dataset	499	0.7618	1317	0.4051	1146	0.2544
Total	655		3251		4504	

External: Where a vacant position was filled by a director from another company in the sample

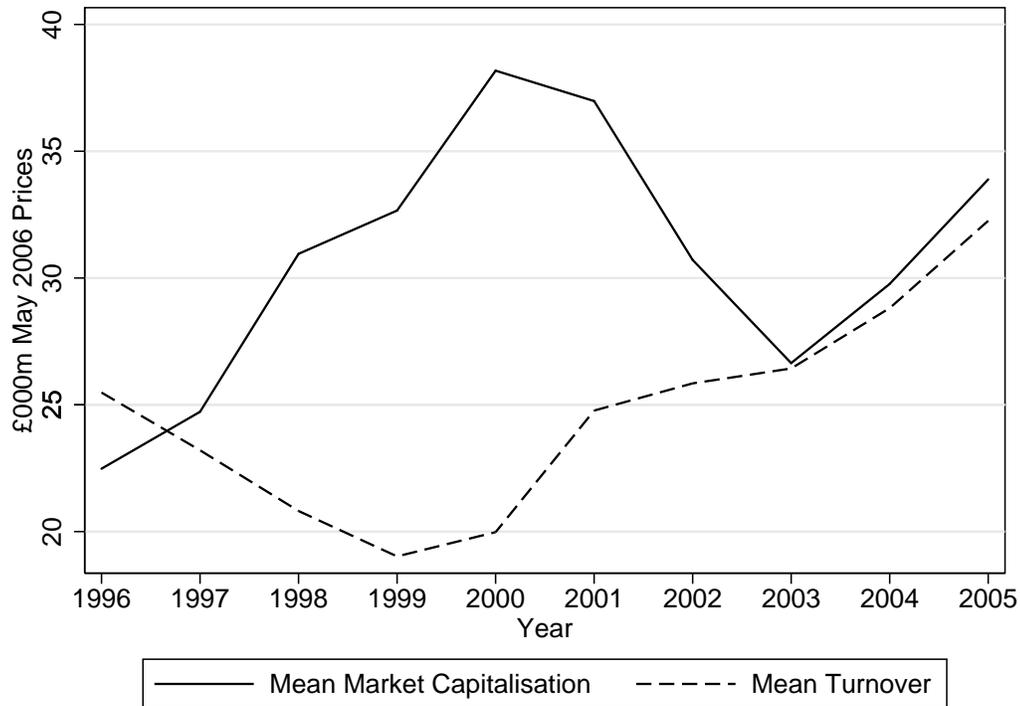
Internal: Where a position was filled by an existing board member.

Total: The total number of appointments; i.e. the sum of 3 and those directors appointed that are not found elsewhere in the sample.

Table 2.9: Size Variables

Size Variables		1996-2005 (Pooled)	1996	2005	% Growth 1996-2005
Market Cap (£ m)	Mean	3,300	2,170	3,906	80
	St Dev	10,400	4,230	1,190	
	Median	670	625	917	46.72
Sales (£)	Mean	2,690	2,570	3,380	31.52
	St Dev	8,280	6,810	1,020	
	Median	592	568	805	41.73
Total Assets (£000)	Mean	13,100	8,075	18,200	125.38
	St Dev	54,000	29,000	78,100	
	Median	1026	859	1251	45.63
Total Employees	Mean	21,460	22,413	22,122	-1.3
	St Dev	40,333	41,727	43,769	
	Median	6360	7338	6810	-7.2

Figure 2.7: FTSE 350 1996-2005



the ‘.com boom’ and the prevalence of high tech stocks in the FTSE 350 during this period. The subsequent collapse in value of these stocks relative to other sectors is also reflected in the convergence of turnover and market capitalisation post 2001.

Performance is measured in terms of either accounting performance or market performance. The performance measure used most frequently in the UK literature is the market return index from Datastream and the change in the log of variable corresponds to Total Shareholder Return (TSR)¹². Earnings per share (EPS) is the underlying figure as reported in the financial statements. Return on assets is another measure of profitability and is defined as net income divided by total assets. Return on equity is defined as net income divided by shareholder equity and is recorded as a percentage.

In order to replicate the specifications of prior studies following variables were also collected. The market to book ratio is obtained from Datastream and is considered as a measure of the future growth opportunities in the firm. It is calculated as net tangible assets divided by the market value. The number of other CEOs represents the number

company’s financial year end.

¹²Following Murphy (1985) and Conyon and Peck (1998), TSR equals the year change in log of annual return index supplied by Datastream (Conyon, Peck, and Sadler, 2000). TSR represents the growth in share value including paid dividends. Growth 1996-2005 aggregates TSR between 1996-2005.

Table 2.10: Performance Variables

Performance Variables		1996-2005 (Pooled)	1996	2005
Market Return	Mean	11,493	9,762	15,965
	St Dev	27,803	19,760	37,932
	Median	1073	2203	1139
Total Shareholder Return	Mean	.055	.192	.156
	St Dev	0.49	0.354	0.278
	Median	0.102	0.195	0.171
Earnings Per Share	Mean	260.1	43.3	34.2
	St Dev	12,473	99	57.7
	Median	17.43	16.57	18.8
Return on Assets	Mean	.105	.113	.153
	St Dev	3.16	2.09	3.38
	Median	0.143	0.152	0.154
Return on Equity	Mean	18.4	24.2	20.7
	St Dev	215.2	55.6	97.4
	Median	15.4	18.2	14

Table 2.11: Control Variables

Control Variables		1996-2005 (Pooled)	1996	2005
Market to Book	Mean	2.46	2.42	1.91
	St Dev	(44.9)	(40.6)	(25.0)
	Median	2.21	2.51	2.40
No. Other CEOs	Mean	.132	.179	.079
	St Dev	(.393)	(.474)	(.278)
	Median	0	0	0
Equity Holdings of the CEO	Mean	.419	-	.242
	St Dev	(3.25)	-	(2.64)
	Median	0	-	0
St Dev of Monthly Returns	Mean	.103	.067	.065
	St Dev	(.074)	(.042)	(.037)
	Median	.085	.058	.057
Blockholder Dummy	Mean	.102	-	.075
	St Dev	(.304)	-	(.264)
	Median	0	-	0
Combined Chairman CEO Dummy	Mean	.026	.024	.021
	St Dev	(.160)	-	(.144)
	Median	0	.152	0

of non-executive directors serving on the remuneration committees who are also CEOs elsewhere within Manifest's sample. Authors have suggested that this variable could positively influence CEO pay via a tacit collusion arrangement (Conyon and He, 2004). The percentage of equity holdings of the CEO could potentially have either a positive or negative effect on total remuneration. A large equity holding could off-set the need for large performance-related incentive packages, or perhaps pay of any kind as the CEO's wealth would vary dramatically with the fortunes of the Company regardless of remuneration. However, a large equity holding is might also facilitate CEO power and hence a positive relationship between equity holdings and executive remuneration is conceivable. In this matter, our findings are consistent with Anderson and Bizjak (2003) who find a negative relationship between CEO equity holdings and CEO pay.

The standard deviation of monthly returns is included as a measure of risk. Riskier businesses might need to pay more to attract the same quality CEO as individuals are normally assumed to be risk averse. Length of service is included to capture experience.

Finally, a number of dummy variables are created. A blockholder dummy, is included to identify firms where there is a outside shareholder owning more than 5% of the Company. Controversial pay arrangements might be brought under greater scrutiny in firms where there is one party that has a significant interest in the company. A combined Chairman/CEO dummy is included to identify those firm-years where the role of Chairman and CEO was exercised by the same individual. Resignation and appointment dummies are included to identify those individuals who served less than a full 12 months. For reasons explained in section 3.3 even after annualising the pay of those individuals who served less than a full 12 months we might expect inflated pay in these periods due to receipt of recruitment incentives and compensation payments.

Time and Sector Dummy variables

Time specific effects are controlled with a full set of yearly time dummies. Manifest base their sector definitions on the FTSE classifications which are split into 33 groups. Sector dummies are unable to be identified in fixed effects methodologies as all time-invariant effects specific to firms are eliminated.

2.5 Results

The results are presented as follows. Firstly, the estimating strategy of the original studies are applied to manifest's data. Then in each subsequent stage, one aspect of the method is altered along the dimensions discussed above, in order to show to which choices the results are sensitive. This will then inform the selection of a preferred estimator.

2.5.1 Replication of Existing Studies on Manifest Data

Table 2.12 summarises the results of replicating six of the studies outlined in table 2.1 using the Manifest data relating to remuneration committee structure¹³. Full output is provided in the appendix. As far as possible, all significant control variables were included as in the original regressions and the original estimation techniques were followed. Therefore any differences between the original results and Manifest's results should only reflect genuine differences in the sample data.

Table 2.12 shows that the replication of the original studies' methods produced broadly similar results when applied to Manifest's data. The only instance where an original result was overturned was with respect to Conyon and He (2004). This is not surprising as there are important differences between our sample and Conyon & He's sample. Conyon & He use young IPO firms from the US whilst Manifest's data covers the FTSE 350 Index¹⁴.

Studies in the literature that have applied different econometric techniques and measuring the variables in different ways have come to different conclusions regarding the significance of independence in the pay setting committee. Applying the strategies to the same dataset does not reconcile the different conclusions. Rather table 2.12 suggests that methodological choices are important in the acceptance or rejection of proposition 1.

2.5.2 Econometric Specification

As detailed in section 2.2, there are a number of issues to consider regarding econometric specification. These include the importance of controlling for firm fixed effects, identifying the individual in the sample and controlling for past realisations of pay in the

¹³Conyon (1997) and Benito and Conyon (1999) were not replicated as their variable was the adoption of a remuneration committee which is almost universal within Manifest's sample.

¹⁴See appendix for further details.

Table 2.12: Replication of Prior Studies

Study	Variable	Original Finding		Manifest Data		Qualitatively Different?
Bonet & Conyon	No. insiders on rem com	.163**	(2.55)	.041**	(2.15)	No
	Rem com insider dummy	.241*	(1.88)	.047**	(2.04)	No
Conyon & He	% insiders on rem com	.380	(1.51)	.626***	(3.52)	Yes
Anderson & Bizjak	% outsiders on rem com	.131	(0.47)	-.102	(-0.90)	No
Core Holthausen & Larcker	% EDs on board	-5,639***	(-3.22)	-15,246***	(-8.76)	No
	No. affiliated NEDs on board	7,356**	(3.19)	56,008**	(1.99)	No
	No. cross directorships	4,358	(0.99)	90,855	(0.69)	No
Newman & Mozes	1st year insider rem com dummy	.061	(0.57)	.022	(0.17)	No
	2nd year insider rem com dummy	.135	(1.35)	-0.34	(-0.06)	No
Conyon & Peck	% outsiders on board	-.319	(-0.42)	.009	(0.11)	No
	% outsiders on rem com	.692***	(2.90)	-.127	(-1.55)	No

determination of current pay¹⁵. After controlling for these factors, there is still scope for divergence in the results owing to the construct of the dependent variable, independence criteria and whether it is the composition of the board or remuneration committee that is being investigated.

Firm Fixed Effects

Murphy (1985) argues for pay regressions to control for firm fixed effects. Certain companies might offer particular remuneration contracts for reasons that are either unknown or unobservable. Correlations between these hidden effects and the composition of the pay-setting committee will bias the results in studies that use a cross section. However, if these firm specific effects are time-invariant, they can be eliminated with panel data by employing a fixed effects methodology. The table below replicates the method of the authors that use an OLS estimator but applies the within estimator to Manifest's data.

Eliminating firm fixed effects leads all three specifications to fail to reject the model of optimal contracting. This suggests that there could be unobserved firm-specific characteristics that influence pay levels which are also correlated with remuneration committee independence. Therefore, the OLS estimates reported in table 2.13 might be overstating the relationship between remuneration committee independence and executive pay as the relationship appears to be sensitive to the elimination of these unobserved firm-fixed effects. However, several more econometric improvements are required before we arrive at a conclusion.

Individual Fixed Effects

In addition to firm fixed effects, it is likely that certain individuals achieve specific pay increments or are paid in particular ways for reasons that are specific to that individual but are unobservable. Such factors could include individual risk preferences or certain human-capital related attributes. By repeatedly observing the individual over a period of time our estimates can control for these individual fixed effects.

Table 2.14 compares estimates controlling for firm and individual fixed effects. Column 'Firm FE' eliminates the firm fixed effect and column 'Individual FE' eliminates the in-

¹⁵The performance variable is not of explicit interest in this investigation. We assume an underlying relationship between log of current market return and the log of remuneration throughout (i.e. a levels specification). In addition, from here on, all inferences will be made using standard errors robust to heteroscedasticity.

Table 2.13: Eliminating Firm Fixed Effects

Study	Variable	OLS		FE		Comment
Canyon & He	% insiders on rem com	.626***	(3.52)	.245	(1.46)	Within estimator overturns result. Now consistent with original study
Core	% EDs on board	-15,246**	(-8.76)	-4003	(-1.58)	Within estimator overturns result.
Holthausen & Larcker	No. affiliated NEDs on board	56,008**	(1.99)	29,704	(0.58)	
	No. cross directorships	90,855	(0.69)	188,934	(0.84)	
Newman & Mozes	1st year insider rem com dummy	.022	(0.17)			Change in coefficients but short of significance at the 10% level.
	2nd year insider rem com dummy	-0.34	(-0.06)			
	All years rem com dummy			.105	(1.59)	

dividual fixed effect. Column 'Firm*Individual FE' in table 2.14 shows the results when a new variable is created uniquely identifying the firm and individual for each year end, and the data ordered around this new variable. Applying the within estimator with the data ordered around this variable eliminates the firm fixed effect and individual effect simultaneously (Cameron and Trivedi, 2005). Full output is provided in the appendix.

Table 2.14 finds no evidence that the independence on the remuneration committee has a statistically significant impact on director pay levels. This result is not sensitive to grouping around individuals or firms or the variable that identifies individual and firm.

Prior Period Pay

Section 2.3 suggests that there was significant evidence that prior period pay is an important determinant of pay in the UK. As the individual was unidentified in prior studies, 'prior period' would have referred to the HPD prior period pay, which may or may not be the same individual. Therefore with Manifest's data, grouping the data on the variable that uniquely identifies firm and individual one might expect the importance of prior period pay to be reinforced.

Table 2.15 compares the results of the regressions using the Arellano-Bond 'differenced' estimator grouped around firms against those of table 2.14. The third column represents the Arellano-Bond estimator with the data grouped around the variable that identifies firm and individual. Full output is provided in the appendix.

As discussed in section 2.3, there are reasons to suspect that the Arellano-Bond 'differenced' estimator might not provide good instruments of lagged levels for prior pay. Therefore table 2.16 compares the results using the 'system' Arellano-Bond estimator, referred to here as Arellano-Bond 2. Where appropriate, the two-step estimator is used, together with the Windmeijer (2005) corrected standard errors. This is desirable as improvements in efficiency can be made with the two-step estimator (Roodman, 2006). Monte Carlo studies have shown that the estimated asymptotic standard errors in finite samples are biased downwards (Windmeijer, 2005) and consequently Arellano and Bond (1991) do not recommend inference on the coefficients when the two-step estimator is used (StataCorp, 2005). However, Windmeijer (2005) has developed an appropriate correction so that inference using these corrected standard errors is possible. Again, full output is provided in the appendix.

Prior period pay is significant in all regressions using Arellano-Bond 2. Only one of the

Table 2.14: Eliminating Firm and Individual Fixed Effects

Study	Variable	Firm FE		Individual FE		Firm*Individual FE	
Bonet & Conyon	No. insiders on rem com	-0.23	(-0.89)	0.10	(0.45)	0.24	(1.09)
	Rem com insider dummy	-.011	(-0.48)	.000	(0.00)	.016	(0.63)
Conyon & He	% insiders on rem com	.245	(1.46)	.201	(1.09)	.210	(1.07)
Anderson & Bizjak	% outsiders on rem com	-.102	(-0.90)	.111	(1.01)	.091	(0.78)
Core	% EDs on board	-4003	(-1.58)	-229,646	(-1.05)	-184,251	(-0.84)
Holthausen & Larcker	No. affiliated NEDs on board	29,704	(0.58)	-4,726	(-0.09)	-14,302	(-0.28)
	No. cross directorships	188,934	(0.84)	242,269	(0.96)	224,781	(0.91)
Newman & Mozes	Insider rem com dummy	.105	(1.59)	.061	(0.80)	.063	(0.78)
Conyon & Peck	% insiders on board	.009	(0.11)	.009	(1.02)	.006	(.069)
	% outsiders on rem com	-.127	(-1.55)	.012	(1.16)	.012	(1.25)

Within estimator

Robust t-stats in parentheses

Dependent variable identifies the individual

Table 2.15: Controlling for Prior Period Pay with Differenced GMM

Study	Variable	FE		Firm ^a AB		Firm*Individual AB	
Bonet & Conyon	No. insiders on rem com	-0.23	(-0.89)	.024	(0.50)	.004	(0.09)
	Rem com insider dummy	-.011	(-0.48)	.026	(0.52)	.013	(0.26)
	pay t-1			.479**	(7.11)	.479**	(7.33)
	pay t-2			.039**	(2.30)	.040**	(2.30)
Conyon & He	% insiders on rem com	.245	(1.46)	.082	(0.33)	.054	(0.20)
	pay t-1			.306**	(3.33)	.237**	(2.05)
	pay t-2			.095**	(2.14)	0.46	(1.18)
Anderson & Bizjak	% outsiders on rem com	-.102	(-0.90)	-.007	(-0.04)	.108	(0.57)
	pay t-1			.311	(3.50)	.299**	(2.49)
	pay t-2			.091	(2.17)	0.69*	(1.79)
Core Holthausen & Larcker	a) % EDs on board	-4003	(-1.58)	1536	(0.59)	6539	(0.33)
	No. affiliated neds on board	29,704	(0.58)	12710	(0.18)	-56595	(-1.07)
	No. cross directorships	188,934	(0.84)	667,560**	(3.22)	267631*	(1.71)
	pay t-1			-.096	(-0.15)	-.257	(1.52)
	pay t-2			-.016	(-0.19)	-.152	(-0.89)
Newman & Mozes	Insider rem com insider dummy	.105	(1.59)	.059	(0.54)	.024	(0.19)
	pay t-1			.237**	(2.50)	.294**	(2.39)
	pay t-2			0.60	(1.43)	.053	(1.30)
Conyon & Peck	% insider on board	.009	(0.11)	-.044	(-0.30)	-.064	(-0.50)
	% outsiders on rem com	-.127	(-1.55)	-.158	(-0.71)	-.106	(-0.38)
	pay t-1			.179**	(2.89)	.010	(0.96)
	pay t-2			.034	(1.02)	-.032	(-0.92)

^aExcept for Bonet and Conyon (2005) where the data is grouped around individuals.

Table 2.16: Controlling for Prior Period Pay with System GMM

Study	Variable	Firm*Individual AB		AB 2	
Bonet & Conyon	No. insiders on rem com	.004	(0.09)	.002	(0.12)
	Rem com insider dummy	.013	(0.26)	.003	(0.12)
	pay t-1	.479**	(7.33)	.391**	(7.59)
	pay t-2	.040**	(2.30)	-.054**	(-2.59)
Conyon & He	% insiders on rem com	.054	(0.20)	.251	(1.32)
	pay t-1	.237**	(2.05)	.289**	(2.67)
	pay t-2	0.46	(1.18)	.042	(0.65)
Anderson & Bizjak	% outsiders on rem com	.108	(0.57)	-.255**	(-2.08)
	pay t-1	.299**	(2.49)	.469**	(6.33)
	pay t-2	0.69*	(1.79)	.122**	(2.22)
Core Holthausen & Larcker	% EDs on board	6539	(0.33)	-762357**	(-4.34)
	No. affiliated neds on board	-56595	(-1.07)	10746	(0.22)
	No. cross directorships	267631*	(1.71)	309,173	(1.11)
	pay t-1	-.257	(1.52)	.301**	(3.19)
	pay t-2	-.152	(-0.89)	.174	(1.62)
Newman & Mozes	Rem com insider dummy	.024	(0.19)	-.045	(-0.51)
	pay t-1	.294**	(2.39)	.486**	(5.50)
	pay t-2	.053	(1.30)	.101*	(1.86)
Conyon & Peck	% insider on board	-.064	(-0.50)	.101	(0.83)
	% outsiders on Rem Com	-.106	(-0.38)	-.092	(-0.73)
	pay t-1	.010	(0.96)	.349**	(2.98)
	pay t-2	-.032	(-0.92)	-.021	(-0.31)

models finds evidence that the proportion of outsiders on the remuneration committee is significant in the determination of CEO pay.

2.5.3 Independence

The regressions above have used the various constructs of independence employed in the original studies. We suggested in section 2.3 that Manifest's data might allow a more detailed examination of director independence. Some independence characteristics might be more important than others. In addition, concerns have been raised regarding the reliability of the company's own independence assessments. Manifest's data will allow us to explore these issues.

Table 2.17 compares the original authors' constructs of independence against the companies' own assessments and Manifest's. Each equation uses the most sophisticated estimator available (system GMM, including prior period pay, with the individual identified and data grouped around the variable that uniquely identifies firm and individual). Full output is provided in the appendix.

Table 2.17: Manifest vs Company Independence Assessments

Study	Variable	Original		Company		Manifest	
Bonet & Conyon	No. insiders on rem com	.002	(0.12)	.030**	(2.11)	.008	(1.58)
	Rem com insider dummy pay t-1	.003	(0.12)	.030*	(1.75)	.011	(1.16)
		.391**	(7.59)	.388**	(7.52)	.388**	(7.51)
Conyon & He	% insiders on rem com	.251	(1.32)	.343**	(2.63)	.026	(0.48)
	pay t-1	.289**	(2.67)	.314**	(2.65)	.319**	(2.66)
Anderson & Bizjak	% outsiders on rem com	-.258**	(2.16)	-.258**	(2.16)	-.064	(-0.75)
	pay t-1	.477**	(5.23)	.477**	(5.23)	.476**	(4.84)
Newman & Mozes	Rem com insider dummy	-.045	(-0.51)	.068	(1.38)	.019	(0.76)
	pay t-1	.486**	(5.50)	.464**	(5.69)	.471**	(5.80)
Conyon & Peck	% insider on board	.101	(0.83)	.101	(0.83)	.076	(0.83)
	% outsiders on Rem Com	-.092	(-0.73)	-.092	(-0.73)	-.037	(.079)
	pay t-1	.349**	(2.98)	.349**	(2.98)	.332**	(2.98)

Anderson & Bizjak and Conyon & Peck's assessments are akin to the Company's own assessment. Core et al is not repeated as they break down insiders into different categories like Manifest. Therefore, there is no available measure for company independence and the original is similar to Manifest's assessment.

Table 2.17 provides some evidence for the rejection of proposition 1 in favour of a rents capture model when the company's own assessment is applied. However, contrary to expectations, the effect of taking Manifest's impartial assessment ahead of the less strict company assessments is to find no support for a rents capture type model. It appears that

the directors most susceptible to capture are the same directors that the company has already identified. The extra independence failures that Manifest identifies do not increase executive remuneration. This does not imply that the Company's own assessment of independence dominates Manifest's. However, in terms of the pay setting process, it is the violations of independence that are too flagrant for a company to ignore that have the greatest statistical impact on pay. Manifest's data still has the advantage of being able to identify the detailed reasons for independence failure. For instance, perhaps the most contentious suggestion of the Combined Code is that an independence issue can arise just because a director has served on the board for nine or more years. Companies frequently disagree with Manifest that tenure is an independence issue and the Association of Investment Trust Companies' Code of Corporate Governance (2003) does not recognise tenure as an independence issue. Therefore, with Manifest's data it is possible to experiment with the construct of independence.

Table 2.18: Independence Failures for Length of Service Alone

Is tenure the only issue?	Failed by Manifest	Failed by company	Difference	% Disagreement
YES	2,761 from 2,778	190 from 2,778	2,571 from 2,778	0.9254
NO	4,603 from 21,959	1,646 from 21,959	2,957 from 21,959	0.1347

Table 2.18 compares the company assessments of independence against Manifest's assessment when length of service is the only independence issue. Manifest fail for independence in all but 17 cases whereas the Company only failed in 6.8% of the time. Therefore, if one suspects tenure as a genuine independence issue, one is able to re-calibrate Manifest's assessment to exclude those who have failed independence for tenure alone.

Table 2.19 show that the results move closer towards finding an effect of board independence on pay, but remain short of significance even after considering those who's only issue is length of service as independent. Hence, some characteristics of independence could be more important than others. Therefore it is worth examining further the reasons behind independence failure.

Given that some of the reasons for failure have only small number of failures it is sensible to group some of the categories above. In addition, it is desirable to disentangle outside major shareholders from shareholders with a management association. Contrary to directors related to management, outside major shareholders should be more resilient to capture. Therefore, an increase in these directors would be associated with lower not higher levels of pay under the rents capture model. The four categories in table 2.21 are substituted in for the independence variables used the studies. Only the model akin to

Table 2.19: Manifest vs Manifest less length of service only failures

Study	Variable	Manifest		Less Tenure	
Bonet & Conyon	No. insiders on rem com	.008	(1.58)	.014*	(1.83)
	Rem com insider dummy pay t-1	.011	(1.16)	.006	(0.58)
		.388**	(7.51)	.390**	(7.52)
Conyon & He	% insiders on rem com	.026	(0.48)	.126	(1.25)
	pay t-1	.319**	(2.66)	.256**	(2.07)
Anderson & Bizjak	% outsiders on rem com	-.064	(-0.75)	-.065	(-0.89)
	pay t-1	.476**	(4.84)	.360**	(3.96)
Newman & Mozes	Rem com insider dummy	.019	(0.76)	.012	(0.39)
	pay t-1	.471**	(5.80)	.455**	(5.17)
Conyon & Peck	% insider on board	.076	(0.83)	.116	(1.15)
	% outsiders on Rem Com	-.037	(.079)	-.022	(-0.24)
	pay t-1	.332**	(2.98)	.401**	(3.22)

Bonet and Conyon (2005) finds evidence for the rejection of proposition 1. This model suggests that remuneration committees with more non-executive directors who have a material business relationship with the Company, *ceteris paribus*, increase levels of pay for executive directors. None of the studies link an executive presence (or closely related executive presence) to greater levels of executive (or CEO) remuneration. In addition, the presence of an outside shareholder, or a non-executive director who has failed independence for tenure only, appear to have no significant effect on remuneration.

2.5.4 Other Methodological Issues

There are three remaining dimensions which have been implicitly covered in the analysis above but deserve further attention: first, the difference between analysing CEO remuneration or the remuneration of all executive directors; second, the construct and functional form of the dependent variable (i.e. which parts of the remuneration package are measured and how); and finally, there may be a difference between analysing the composition of the board and the composition of the remuneration committee.

Bonet and Conyon (2005)'s study, together with the results of table 2.19 and table 2.22 find greater evidence for the capture of all executive directors' pay than just the CEO alone. An interpretation for these results could be that it is CEO pay is the focus of scrutiny by shareholders and hence the setting of CEO pay is harder to capture than pay setting process for other directors. However, this is not consistent with the traditional predictions

Table 2.20: Reasons for Independence Failures

	1996-2005	1996	2005
Total NEDs (director years)	31011	2263	3018
Failed by Company	2376	87	313
Failed by Manifest	9316	584	855
i) Executive Director (within last five years)	968	38	107
ii). Family connection to an executive director or Company	229	20	19
iii). Material Business Relationship (within last three years)	1190	109	90
iv) Cross Directorship (ned of firm x is ed of firm y where ed of firm x is a ned of firm y)	71	3	6
v) Professional/Consultancy Services (within last three years)	422	24	54
vi) Received bonuses or other significant remuneration in excess of normal fees for service as non-executive director	661	23	126
vii) Significant Shareholder (holding in excess of 3% issued share capital)	1273	84	146
viii) Tenure (=> nine years)	5104	336	563
ix) Tenure only	3732	243	401
No NEDs where independence is not known	660	432	2

Directors were assessed by Manifest's analysts (of which the author was one) on an annual basis. Some of the directors were assessed retrospectively by the author in order to complete missing records. In each year, a director may fail for any number of reasons.

Table 2.21: Grouping of Independence Failures

	1996-2005	1996	2005
1. Failed for association to management (either i; ii; or iv)	1229	59	129
2. Failed for connection to company's business (either iii; v; or vi)	2197	154	261
3. Independent shareholder (failed for vii; and independent on i, ii or iv)	1071	69	125
4. Tenure only	3732	243	401

Table 2.22: System GMM with Independence Failure Groups

Study	Variable	AB2	
Bonet & Conyon	Association to management	-.013	(0.52)
	Association to business	.038**	(3.47)
	Outside Shareholder	.012	(0.49)
	Tenure only	.002	(0.27)
Conyon & He	Association to management	.023	(0.90)
	Association to business	.089	(0.62)
	Outside Shareholder	-.146	(-0.77)
	Tenure only	-0.18	(-0.27)
Anderson & Bizjak	Association to management	.069	(0.33)
	Association to business	-.001	(0.00)
	Outside Shareholder	.085	(0.59)
	Tenure only	-.082	(-1.09)
Core Holthausen & Larcker	Association to management	26541	(0.37)
	Association to business	32095	(0.63)
	Outside Shareholder	26403	(0.46)
	Tenure only	14205	(0.47)
Newman & Mozes	Association to management	.062	(0.91)
	Association to business	-.044	(-1.32)
	Outside Shareholder	.092	(1.55)
	Tenure only	-.014	(-0.58)
Conyon & Peck	Association to management	-.317	(-1.18)
	Association to business	0.25	(0.26)
	Outside Shareholder	.000	(0.00)
	Tenure only	.012	(0.18)

Table 2.23: Different Elements of the Remuneration Package

Study	Rem Measure	Variable	AB2	
Bonet & Conyon	Ln Director Salary	No. insiders on rem com	-.005	(-0.35)
	Ln Director Emoluments		.021	(1.29)
	Ln Director Total Rem		.018	(1.23)
Conyon & He	Ln CEO Salary	% insiders on rem com	.045	(0.35)
	Ln CEO Emoluments		.256	(1.42)
	Ln CEO Total Rem		.255*	(1.81)
Anderson & Bizjak	Ln CEO Salary	% outsiders on rem com	-.278**	(2.01)
	Ln CEO Emoluments		-.194	(1.38)
	Ln CEO Total Rem		-.258**	(2.16)
Newman & Mozes	Ln CEO Salary	=1 if insider on Rem Com	.086**	(2.26)
	Ln CEO Emoluments		.068	(1.43)
	Ln CEO Total Rem		.068	(1.38)
Conyon & Peck	Ln CEO Salary	% insider on board	.149	(1.54)
	Ln CEO Emoluments		.068	(0.39)
	Ln CEO Total Rem		.005	(0.04)
	Ln CEO Salary	% outsiders on Rem Com	-.151	(1.45)
	Ln CEO Emoluments		.032	(0.22)
	Ln CEO Total Rem		-.002	(0.02)

of rents capture models which argue that it is the CEO who is best positioned to capture pay. An alternative econometric interpretation is simply that examining the pay of all the executive directors in the company, rather than just the CEO, allows more observations from a fixed set of companies. Given how subtle the relationship between independence and pay could be, one might expect more observations to increase the likelihood of finding some evidence for the rejection of optimal contracting.

It is possible that it is easier to capture some aspects of the remuneration package than others. For instance the most recent concerns voiced by shareholder institutions are related to the suspected ratcheting of salary, more than the design of long term incentives (MM & K Ltd, 2007). With this in mind, Table 2.23 repeats the regression models using salary, emoluments, and total remuneration in logs as the dependent variable. Full output is provided in the appendix, including the non-log model.

Evidence is found for the capture of salary in one instance and capture of total remuneration in two instances. However, no evidence is found for the capture of emoluments, which include the gains from exercise of long-term incentive awards (which can be several multiples of salary). This might be expected as the amount and terms of the long-term incentive are set up to ten years prior to exercise i.e. the remuneration committee can have little, if any, influence on exercise of awards post grant date. As the composition of the re-

muneration committee at exercise date could bear little relation to the composition of the committee at grant date (if such a committee even existed), failure to find a relationship between the committee and exercise levels is not surprising.

2.5.5 Preferred Estimator

The results in the previous sections have shown that how important independence appears to be in the pay-setting process is dependent upon the chosen econometric strategy. We now construct a preferred estimating equation.

The methodological choices investigated above can be broadly described by two categories. There are those which are dominant in terms of econometric theory as they produce more accurate estimates. Other choices are subjective but yet remain important in arriving at a conclusion regarding the role of independence in the pay setting process. The dominant aspects include the use of panel data, the identification of individuals, an accurate measurement of pay, controlling for individual and firm effects, controlling for prior period pay and a detailed assessment of non-executive director independence. Any estimator that claims to be preferred should include these aspects as a minimum. The main subjective decision appears to be how the variable measuring independence is constructed. A sensible strategy is to apply the preferred estimator with an independence measure that we expect to give the most robust test of the rents capture hypothesis and another measure that provides the most robust test of the optimal contracting model. The results relating to Chief Executives are shown in table 2.24¹⁶.

When the independence variable is broken down, table 2.24 reports no evidence for rents capture by CEO's. When the boarder measure of independence is used (using companies' own assessments) replacing a wholly independent remuneration committee entirely with insiders is associated with a 16% increase in remuneration for the CEO. However, the estimated coefficient is only statistically significant at the 10% level.

Our control variables largely behave as expected. Past realisations of pay explain a large proportion of current pay. Age is positively correlated with remuneration, but the square of age is negative suggesting that remuneration does not increase with age beyond a particular age¹⁷. Chief Executives close to retirement are unlikely to receive grants of equity

¹⁶The analysis is repeated for all executive in the appendix. Also in the appendix, we experiment with valuations for the equity based incentives in the calculation of total remuneration.

¹⁷The turning point in the predicted values with respect to age is 52. Perhaps this is slightly earlier than might be expected but reflects some very large declines in remuneration for the very old CEOs.

Table 2.24: Preferred Estimator: Chief Executives

CEO Ln Total Rem	Robust Test Rents Capture		Robust Test Optimal Contracting	
<i>Dependent Variable</i>				
<i>t</i> - 1	0.393***	(4.29)	0.388***	(4.05)
<i>t</i> - 2	0.071*	(1.81)	0.067*	(1.68)
<i>Remuneration Committee Variables</i>				
No. Associated to Management	-0.025	(-0.46)		
No. Business Relationship	-0.006	(-0.23)		
No. Major Shareholders	0.035	(0.88)		
No. Long Tenure	-0.002	(-0.13)		
% Insiders (Company)			0.155*	(1.80)
Committee Size	0.008	(0.67)	0.007	(0.59)
Age	0.056*	(1.71)	0.058*	(1.77)
Age ²	-0.001*	(-1.86)	-0.001*	(-1.92)
Ceo Holdings	-0.001	(-0.51)	-0.001	(-0.52)
Board Size	0.020***	(3.24)	0.020***	(3.14)
Sales	0.113***	(4.31)	0.117***	(4.22)
TSR	0.091**	(2.35)	0.088**	(2.28)
EPS	-0.001	(-0.08)	-0.001	(-0.02)
<i>Dummy Variables</i>				
Resigned in Year	0.000	(0.00)	0.002	(0.04)
Appointed in Year	-0.070	(-0.94)	-0.066	(-0.90)
Combined Chairman & CEO	0.036	(0.66)	0.038	(0.68)
Female	0.130	(1.42)	0.135	(1.47)
Blockholder	-0.026	(-0.94)	-0.031	(-1.13)
Constant	3.112***	(3.37)	3.114***	(3.29)
1998	0.195	(1.17)	0.172	(0.93)
1999	0.269	(1.56)	0.250	(1.35)
2000	0.360**	(2.17)	0.343*	(1.91)
2001	0.342*	(1.87)	0.329*	(1.66)
2002	0.433**	(2.34)	0.423**	(2.10)
2003	0.480**	(2.57)	0.470**	(2.33)
2004	0.516**	(2.58)	0.509**	(2.35)
2005	0.530**	(2.38)	0.523**	(2.19)
N	2141		2141	
Groups	681		681	
Instruments	73		73	
F-stat(27, 680)	55.65		57.67	
Hansen J χ^2	57.18		57.31	
<i>Prob</i> > χ^2	(0.257)		(0.253)	
No Second Order	0.220		0.260	
autocorrelation in first differences	(0.828)		(0.795)	

incentives. Consistent with other UK studies, larger companies as measured by board size and logged sales are associated with greater levels of CEO pay. Performance as measured by total shareholder return (TSR) is also positively associated with pay, albeit the accounting measure, earnings per share (EPS), is not. Performing the role of Chairman as well as being the CEO is not associated with higher levels of remuneration for the CEO.

As the calculation of remuneration was annualised for directors serving less than 12 months of a year, it is not surprising that dummy variables identifying CEOs in the first or last year of their tenure are statistically insignificantly different from zero. Our female dummy is also insignificant. This is not surprising as there were only 14 female Chief Executives in our sample. However, it is perhaps, slightly surprising that the coefficient is positive, given the general perception that women suffer from wage discrimination and that this discrimination is thought to be particularly prevalent at the highest level. One explanation might be that, given 98% of our sample is male, only exceptionally talented women are able to break through the glass ceiling and reach the position of CEO. We might expect these women to be paid more than the average CEO, or at least paid enough to counter the wage discrimination effect.

The blockholder dummy equals one when an outside major shareholder holds more than 5% of the company's equity. The coefficient on the blockholder dummy is negative but statistically insignificant. The relationship between shareholder monitoring and executive pay is explored in more detail in chapters 4 and 5. The year dummies describe the well documented unexplained growth in CEO pay over the duration of the sample.

To produce unbiased estimates, the variables used to instrument prior period pay must be uncorrelated with the error (exogenous). This is tested by the Hansen J statistic. Bias might also be caused by second order autocorrelation in the first differences. Both these diagnostic tests are satisfied.

2.6 Conclusion

Prior empirical research has produced mixed findings and hence this study sought to be as rigorous as possible regarding its econometric strategy. The use of panel data, the identification of individuals, an accurate measurement of pay, controlling for individual and firm effects, controlling for past realisations of the dependent variable and a rich assessment of non-executive director independence were all important for a thorough exploration of

the issues surrounding the relationship between remuneration committee independence and CEO pay. The results, taken together, do not favour the rents capture model. Only in the most favourable specification was a relationship between the independence of the pay-setting committee and CEO remuneration levels found. This relationship was only significant at the 10% level, with the control variables contributing far more to the determination of pay levels. Furthermore, in the majority of specifications there was no evidence to reject the null model of optimal contracting.

Yet the findings of our study are not sufficient to state that CEO remuneration contracts are being determined optimally. Our findings are consistent with optimal contracting but other interpretations are possible. For example, one interpretation could be that no matter how independent you make your board the CEO will still capture the pay-setting process and inflate their own remuneration beyond the optimal level for shareholders. Indeed, the very fact that CEO pay continued to rise above general earnings year on year during the same period when the presence of insiders on remuneration committees was reducing steadily, is suggestive of this phenomenon.

While significant, the magnitude of the estimated coefficient on the performance variable (TSR) is relatively small in our preferred specification. This, together with the continued acceleration of CEO pay during a market decline (post 2001) is disappointing if the pay-performance relationship is a good estimate of how well contracts are being designed to solve agency problems. Moreover, the persistence of prior levels of pay to current arrangements may also be a concern for shareholders. If shareholders are seeking an optimal contract with the CEO in each time period, then theoretical reasons why past period pay should be positively correlated with current pay are not entirely clear.

Future work might wish to concentrate on more sophisticated choices of the dependent variable as a measure of the efficiency of remuneration contracts. Although the measure of long term equity incentives used in this study was robust to different specifications it was technically simplistic. We were unable to measure CEO wealth in this study (other than equity holdings) which might influence the extent to which changes in remuneration actually matter to the CEO. Nor did our study include any data on CEO pension arrangements. We were unable to model the complexity and diversity of equity incentive schemes, particularly with respect to performance conditions. Performance conditions are an issue in which executives have been suspected of directly capturing the pay-setting process¹⁸. Therefore, further research into the severity of performance conditions and the

¹⁸For instance by 'earnings smoothing' by which CEOs may choose not to maximise earnings in early

relationship with non-executive director independence is certainly an interesting area for future research. One possibility, is the application of a monte carlo probability simulation in pricing incentives at grant date. Such a model is able to consider the impact of performance conditions on the valuation of incentive grants. The price produced by the monte carlo model, could be compared with a black-scholes model to reveal the impact of performance conditions on incentive pricing. The differential could then be regressed against director independence to assess whether tougher performance conditions are correlated with director independence.

Future work might also be focus on the extent to which remuneration arrangements have changed over the last 15 years. As indicated in this chapter, there have been many significant developments in best practice. New disclosure rules and an increased emphasis on the role of the non-executive director have been designed to make boards less vulnerable to capture than in previous years. At the same time, service contracts have been reduced, providing fewer severance provisions and equity vesting conditions have become more demanding in order to strengthen the link between performance and reward. It is also possible that increased disclosure has enabled a ratcheting of pay, a phenomenon to which captured boards might be more vulnerable. Thus, there are many avenues for future related work to explore and given that the increased disclosure has placed the necessary data in the public domain, further interesting insights into the pay-setting process should be achievable.

periods to make performance growth targets easier to achieve in later periods.

Appendix

2.A Replication of Studies

Section 2.5.1 attempts to reproduce the results from studies in the existing literature that tested whether the independence of the supervisor in the pay-setting process was significant in the determination of pay. The studies were replicated as far as possible in terms of the econometric specification of the estimating equation. This included the regression model (including the standard errors employed), the control variables used, the definition of independence, the unit of analysis and supervisor variable and also the ordering of panel data where applicable. One should note that the apparently unsophisticated approaches of some of the studies can be justified in light of the fact that their main focus lay elsewhere than discerning between the optimal contracting and rents capture models.

Unfortunately, some data items for the control variables used in the original studies were unable to be collected and others were incomplete for the whole sample and merged into Manifest's database. However, in all cases, care was taken to ensure that at least the main significant variables of the original studies were included such that the attempt of replication was a fair one.

Two of the studies in table 2.1, Benito and Conyon (1999) and Conyon (1997) investigate the difference between those companies who have adopted a remuneration committee and those that have not. A replication of these studies is not possible as almost all companies in Manifest's database adopted a remuneration committee prior to 1996. Daily, Johnson, Ellstrand, and Dalton (1998) was not replicated as specific software (LISREL 8.03) was required to replicate their regression technique¹⁹.

Applying Conyon & He's (2004) method to Manifest's data overturns one of the original results. The coefficient on the proportion of insiders on the remuneration committee is

¹⁹Daily, Johnson, Ellstrand, and Dalton (1998) apply maximum likelihood to estimate structural equation models.

Table 2.25: Bonet and Conyon (2005) p148, table 7.4

	Original Data				Manifest Data			
No. of insiders on rem com	0.163**	(0.064)			.041**	(0.019)		
Any insider on rem com			0.241*	(0.128)			.047**	(.023)
CEO	0.527**	(0.056)	0.526**	(0.057)	.516**	(.016)	.516**	(.016)
Board Size	0.007	(0.010)	0.004	(0.010)	.024**	(.002)	.024**	(.002)
Rem Com Size	-0.030	(0.022)	-0.023	(0.021)	.010*	(.005)	.010*	(.005)
Ln market cap	0.234**	(0.025)	0.232**	(0.025)	.179**	(.005)	.179**	(.005)
No. of groups			623				4731	
Observations			1536				20399	

Executive director compensation defined as 'salary, bonus and other type of compensation but excluding the value of exercised stock options'.

Random effects estimator with asymptotic standard errors.

Year and industry dummies included.

*** Significant at 1%. ** Significant at 5%. * Significant at 10%.

Table 2.26: Conyon and He (2004) p29; table 2

	Original Data		Manifest Data	
Insiders on Rem Com	0.38	(1.51)	.626**	(3.52)
Sig shareholders	-0.15	(-1.83)	-.112**	(-2.58)
CEO directors	0.05	(0.29)	.203	(1.23)
CEO age	-0.00	(-0.16)	.005**	(2.32)
CEO Tenure	-0.01	(-1.54)	-.004*	(-1.93)
CEO Founder?	-0.41	(-4.63)		
Rem Com?	-0.17	(-1.20)		
Combined Ch/CEO?	0.01	(0.10)	.056	(1.27)
Board size	0.08**	(3.88)	.017**	(3.05)
Insiders on the board	-0.46	(-1.76)	-.806**	(-7.96)
Firm age	0.00	(0.43)		
Firm size	0.15**	(6.98)	.316**	(26.47)
Firm growth potential	-0.15**	(-3.22)	-.0001	(-0.36)
Firm volatility	0.11*	(2.20)	.337	(1.32)
Firm performance	0.04*	(2.11)	.002*	(1.97)
Observations		1563		2188
Adjusted R-squared		0.2637		0.6269

CEO compensation defined as 'salary, bonus, benefits and the expected value of equity based grants'.

OLS estimator with robust t-stats.

Year and industry dummies included.

N is less than in the replication of Bonet & Conyon (2005) as Conyon & He (2004) only investigate CEO, not the pay of each executive director.

It was not possible to identify CEO Founders or firm age in the in the data. However, unlike Conyon & He's sample of venture capitalists there are a very small number of Company founders in the FTSE 350 who serve as CEO's. Also, the remuneration committee dummy is not included as all companies in Manifest's sample had established a compensation committee.

Table 2.27: Anderson and Bizjak (2003) p1333; table 2

	Original Data		Manifest Data	
Fraction of outsiders on rem com	0.131	(0.47)	-.102	(-0.90)
CEO on remuneration committee	-0.562	(1.55)	.121	(1.36)
CEO Turnover	-0.079	(0.51)	-.086**	(-2.21)
CEO equity holdings	-6.289**	(-2.93)	-.602**	(-1.99)
CEO tenure	0.002	(0.19)	.001	(0.33)
CEO Founder	0.497**	(2.20)		
Ln total assets	0.486**	(7.83)	.1247**	(4.31)
Risk	3.918	(1.14)	-.116	(-0.43)
Investment opportunity set	-0.036	(1.44)	.001	(0.79)
Return on assets	7.675	(1.65)	-.004	(-1.11)
Market return(t-1)	0.233	(0.51)	.034	(1.34)
Firm Groups	110		304	
N	1003		2187	
R squared	58.16		44.15	
F-stat	17.07		69.38	

CEO compensation defined as 'salary, bonus, benefits and the expected value of equity based grants'.
Firm Fixed effects estimator estimator with robust standard errors.

positive and significant. Unlike Conyon & He's (2004) results, this is suggestive of a rents capture type model. However, the coefficient should be interpreted carefully as the regression also controls for the percentage of insiders on the board. In addition, like Conyon & He (2004) support is also found for agency theory as the presence of significant shareholders on the remuneration committee also appears to be important. Moreover, it is not unreasonable to suspect some market differences between a sample of US IPO firms and the FTSE 350 Index.

Table 2.28: Core, Holthausen, and Larcker (1999) p386; table 2

	Original Data		Manifest Data	
Sales in millions US\$ and GBP respectively (t-1)	12.598**	(6.07)	52.7**	(14.94)
Investment Opportunities (market to book ratio)	101,391**	(2.43)	-283	(-0.77)
Return on Assets(t-1) (% earnings/assets)	4,108	(0.98)	5671.939	(0.92)
Stock Return (t-1)	1,454**	(2.34)	54,680**	(5.43)
S.d of ROA	-41,857**	(-3.75)	-682,010*	(-1.69)
S.d of RET	-967	(-0.83)		
Combined Chair/CEO	152,577**	(2.86)	126,852*	(1.74)
Board size	30,601**	(3.51)	49,907**	(5.39)
Inside directors	-5,639**	(-3.22)	-15,246**	(-8.76)
Directors appointed by CEO	4,137**	(4.14)		
Gray outside directors	7,356**	(3.19)	56,008**	(1.99)
Interlocked outside directors	4,358	(0.99)	90,855	(0.69)
Outside directors over age 69	4,136**	(2.42)		
Busy outside directors	2,016	(1.80)		
CEO % ownership	-8,027	(-2.21)	214,092	(0.42)
Non-CEO insider owns 5%	-142,389**	(-2.18)	-130,865	(-1.32)
Percentage stock ownership	-21,183	(-0.81)		
Outside blockholder owns 5%	-86,100**	(-1.98)	-139,597*	(-1.87)
Adjusted r-squared	37.2%		38.48%	
F stat	9.85		26.06	

Core et al (1999) is the only study not to take logs of the dependent variable.

CEO compensation defined as 'salary, bonus, benefits and the expected value of equity based grants'.
OLS estimator with t-statistic in parentheses (not adjusted)

Table 2.29: Newman and Mozes (1999) p47, table 3

	Original Data				Manifest Data			
	1991		1992		1997		2005	
Major Shareholder Dummy	-.002	(-0.58)	-.005	(1.73)	.091	(0.55)	-.037	(-0.33)
Ln Sales	.372**	(6.56)	.286**	(4.92)	.209**	(10.21)	.291**	(15.32)
CEO Tenure	.005	(0.56)	.020**	(2.16)	-.003	(-0.57)	.006	(1.07)
Stock Returns	.003**	(2.12)	.006**	(3.88)	.235	(0.85)	.264	(0.98)
Return on Equity	.005**	(2.79)	.001	(0.33)	.003	(0.45)	.003	(1.11)
Insider	.135	(1.35)	.061	(0.57)	.022	(0.17)	-.034	(-0.06)
Observations	161		161		258		321	
F-Stat	9.79		7.96		22.35		49.11	
Adjusted R-squared	25.3%		23.5%		29.35%		42.91	

Newman & Mozes regress on two years of cross sectional data.

CEO compensation defined as 'salary, bonus, benefits and the expected value of equity based grants'.
OLS estimator with t-statistic in parentheses (not adjusted)

Table 2.30: Conyon and Peck (1998) p153, table 3

	Original Data		Manifest Data	
Fraction outsiders on board	-0.319	(0.43)	.009	(0.11)
Fraction outsiders on rem com	0.692**	(2.91)	-.126	(-1.55)
Shareholder Return	.122**	(1.26)	.152**	(9.13)
Total Employment	-.031	(0.34)	.041**	(2.41)
Combined Chair/CEO	.017	(0.31)	.080*	(1.88)
Nominating committee	-.084	(1.61)		
Blockholder dummy (=1 if >.049)	.001	(0.25)	-.036	(-1.47)
Inside directors	-.017	(-0.58)	.003	(0.37)
Outside directors	-.016	(-0.55)	0.28**	(3.42)
Observations	342		2491	
Groups (firms)	93		307	

HPD Emoluments includes salary, bonus and benefits but not the expected value of equity based grants. Year dummies included.

OLS estimator with robust t-statistic in parentheses.

2.B Econometric Specification

The following section aims to identify the importance of econometric specification in arriving at a conclusion as to the evidence for capture of non-executive directors in the context of executive pay determination. Three issues are explored. Firstly, the importance of time invariant heterogeneity between groups in the panel is examined. Secondly, the issue of what constitutes a group in the panel is explored and finally one attempts to control for past realisations of the dependent variable on the right hand side of the equation.

2.B.1 Fixed Effects

The following section compares the results of the studies that used an OLS estimator against the within estimator, which, unlike the OLS estimator, controls for fixed effects.

Table 2.31: Fixed effects: Conyon and He (2004)

	OLS Estimator		Within Estimator	
Inside Directors	.626**	(3.52)	.245	(1.46)
Significant shareholders	-.112**	(-2.58)	-.027	(-0.67)
CEO directors	.203	(1.23)	-.043	(-0.29)
CEO age	.005**	(2.32)	.001	(0.26)
CEO Tenure	-.004*	(-1.93)	.001	(0.13)
Combined Ch/CEO?	.056	(1.27)	.006	(0.13)
Board size	.017**	(3.05)	.018**	(2.96)
Insiders on the board	-.806**	(-7.96)	-.385**	(-3.36)
Firm size	.316**	(26.47)	.262**	(17.59)
Firm growth opportunity	-.0001	(-0.36)	-.0001	(-0.31)
Firm volatility	.337	(1.32)	-.028	(-0.12)
Firm performance	.002**	(1.97)	.001	(1.48)
Observations	2188		2188	
Groups			307	
Adjusted R-squared	0.6269		0.5583	

CEO compensation defined as 'salary, bonus, benefits and the expected value of equity based grants'.

Robust t-stats.

Year and sector dummies included. Sector dummies eliminated as fixed effects

After applying the within estimator one is unable to reject the hypothesis that the coefficient on the insider variable is significantly different from zero. Thus, the application of the within estimator is important in this instance.

Table 2.32: Fixed effects: Core, Holthausen, and Larcker (1999)

	OLS Estimator		Within Estimator	
Sales in millions US\$ and GBP respectively (t-1)	52.7**	(14.94)	48.8**	(3.94)
Investment Opportunities (market to book ratio)	-.283	(-0.77)	-.203	(0.48)
Return on Assets(t-1) (% earnings/assets)	5,672	(0.92)	3,429	(1.38)
Stock Return (t-1)	54,680**	(5.43)	144,234**	(2.55)
S.d of ROA	-682,010*	(-1.69)	527,198	(-1.60)
Combined Chair/CEO	126,852*	(1.74)	-4,064	(-0.06)
board size	49,907**	(5.39)	15,088	(0.98)
Inside directors	-15,246**	(-8.76)	-4003	(-1.58)
Gray outside directors	56,008**	(1.99)	29,704	(0.58)
Interlocked outside directors	90,855	(0.69)	188,934	(0.84)
CEO % ownership	214,092	(0.42)	-374,604	(-1.30)
Non-CEO insider owns 5%	-130,865	(-1.32)	110,453	(1.34)
Outside blockholder owns 5%	-139,597*	(-1.87)	-130,054**	(-2.40)
Adjusted r-squared	38.48%		23.74	
F	26.06		18.11	

Remuneration includes salary, bonus, benefits and the expected value of equity based grants.

Robust t-statistic in parentheses

The application of the within estimator overturns the inference on the board composition variables.

Table 2.33: Fixed effects: Newman and Mozes (1999)

	OLS Estimator				Within Estimator	
	1997		2005		1996-2005	
Major Shareholder Dummy	.091	(0.55)	-.037	(-0.33)	-.062**	(-2.18)
Ln Sales	.209**	(10.21)	.291**	(15.32)	.181**	(6.24)
CEO Tenure	-.003	(-0.57)	.006	(1.07)	-.0003	(-0.01)
Stock Returns	.235	(0.85)	.264	(0.98)	.083	(1.38)
Return on Equity	.003	(0.45)	.003	(1.11)	.000	(1.57)
Insider	.022	(0.17)	-.034	(-0.06)	.105	(1.59)
Observations	258		321		2311	
Groups					303	
F-Stat	22.35		49.11		101.72	
Adjusted R-squared	29.35%		42.91%		46.89%	

CEO compensation defined as 'salary, bonus, benefits and the expected value of equity based grants'. T-statistic in parentheses (not adjusted)

Table 2.34: Individual Identified: Bonet and Conyon (2005)

	Firms		Individuals		Firm and Individual	
No. of insiders on Rem Com	-.023 (-0.89)		.010 (0.45)		.024 (1.09)	
Any insider on Rem Com	-.011 (-0.48)		.000 (0.00)		0.16 (0.63)	
CEO			.263** (14.85)	.264** (14.84)	.279** (15.93)	.279** (15.92)
Board Size	-.014 (-3.96)	-.014** (-3.95)	.006** (2.41)	.007** (2.39)	.007** (2.45)	.007** (2.43)
Size of Rem Com	.016** (2.76)	.016** (2.74)	-.004 (-0.80)	-.004 (-0.72)	-.005 (-1.12)	-.005 (-1.05)
Ln (market cap)	.147** (14.83)	.146** (14.77)	.096** (13.36)	.097** (13.36)	.089** (11.77)	.089** (11.77)
Groups	523		4,731		5,094	
Observations	4109		20,399		20,718	

Year dummies included.

2.B.2 Individual Identified

The following output compares the results of grouping by position (i.e. individual and firm are uniquely identified), against grouping by firm and individual. All regressions use Manifest's data with the individual identified (i.e. allowing for salary adjustments in the years of appointment and resignation). Grouping the data different certain variables forces one to drop some time-invariant variables. For instance, with Bonet & Conyon, grouping around individuals, allows the identification of the marginal effect of the CEO dummy as the same individual can vary between being CEO and not being CEO throughout the sample. However, grouping around position forces one to drop the CEO dummy as this characteristic will be time invariant for each group throughout the sample.

Table 2.35: Individual Identified: Conyon and He (2004)

	Firms		Individuals		Firm and Individual	
Inside Directors	.245	(1.46)	.201	(1.09)	.210	(1.07)
Significant shareholders	-.027	(-0.67)	-.020	(-0.50)	-.027	(-0.67)
CEO directors	-.043	(-0.29)				
CEO age	.001	(0.26)	.027	(0.32)	.011	(.104)
Combined Ch/CEO?	.006	(0.13)	-.081	(-0.73)	-.110	(-0.92)
board size	.018**	(2.96)	.018**	(2.42)	.015**	(2.02)
Insiders on the board	-.385**	(-3.36)	-.202	(-1.46)	-.202	(-1.49)
Firm size	.262**	(17.59)	.191**	(7.64)	.202**	(7.87)
Firm growth opportunity	-.0001	(-0.31)	-.0001	(-1.08)	.0001	(-1.03)
Firm volatility	-.028	(-0.12)	-.204	(-0.82)	-.247	(-0.99)
Firm performance	.001	(1.48)				
Observations	2188		2,654		2,686	
Groups	307		611		625	
Adjusted R-squared	.5583		.4390		.5009	

Year dummies included.

Table 2.36: Individual Identified: Anderson and Bizjak (2003)

	Firms		Individuals		Firm and Individual	
Fraction outside directors on Rem Com	-.102	(-0.90)	.111	(1.01)	.091	(0.78)
CEO on Rem Com	.121	(1.36)	-.226*	(-1.67)	-.237*	(-1.69)
CEO Turnover	-.086**	(-2.21)	-.122**	(-2.89)	-.077*	(-1.92)
CEO equity holdings	-.602**	(-1.99)	-.003	(-1.31)	-.003	(-1.39)
CEO tenure	.001	(0.33)				
Ln (total assets)	.1247**	(4.31)	.072**	(2.35)	.068**	(2.02)
Risk	-.116	(-0.43)	-.218	(-0.91)	-.246	(-1.10)
Investment opportunity set	.001	(0.79)	.000	(0.01)	.000	(0.04)
Return on assets	-.004	(-1.11)	-.003	(-0.70)	-.002	(-0.53)
Market return	.034	(1.34)	.108**	(4.34)	.157**	(5.61)
Groups	304		609		623	
N	2187		2618		2650	
R squared	44.15		.3111		.2675	
F-statistic	69.38		40.04		40.54	

Table 2.37: Individual Identified: Core, Holthausen, and Larcker (1999)

	Firms		Individuals		Firm and Individual	
Sales in millions (t-1)	48.8**	(3.94)	57.1**	(5.30)	57.7**	(5.37)
Market to book ratio	-203	(0.48)	-1,906	(-1.03)	-1,921	(-1.05)
Return on Assets(t-1)	3,429	(1.38)	23,663	(1.01)	24,038	(1.04)
Stock Return (t-1)	144,234**	(2.55)	92,676**	(2.64)	148,936	(4.54)
S.d of ROA	-527,198	(-1.60)	-51,595	(-0.20)	-127,607	(-0.50)
Combined Chair/CEO	-4,064	(-0.06)				
Board size	15,088	(0.98)	34,857*	(1.89)	30,684*	(1.70)
Inside directors	-4003	(-1.58)	-229,646	(-1.05)	-184,251	(-0.84)
Gray outside directors	29,704	(0.58)	-4,726	(-0.09)	-14,302	(-0.28)
Interlocked outside directors	188,934	(0.84)	242,269	(0.96)	224,781	(0.91)
CEO % ownership	-374,604	(-1.30)				
Non-CEO insider owns 5%	110,453	(1.34)				
Outside blockholder owns 5%	-130,054**	(-2.40)				
Adjusted r-squared	23.74		23.21		21.06	
F	18.11		14.32		15.19	

Table 2.38: Individual Identified: Newman and Mozes (1999)

	Firms		Individuals		Firm and Individual	
Major Shareholder Dummy	-.062**	(-2.18)				
Ln Sales	.181**	(6.24)	.141**	(4.07)	.145**	(4.05)
CEO Tenure	-.0003	(-0.01)				
Stock Returns	.083	(1.38)	.148**	(2.57)	.169**	(2.86)
Return on Equity	.000	(1.57)	.000	(1.08)	.000	(1.13)
Insider	.105	(1.59)	.061	(0.80)	.063	(0.78)
Observations	2311		2470		2503	
Groups	303		596		609	
F	101.72		49.42		42.19	

Table 2.39: Individual Identified: Conyon and Peck (1998)

	Firms		Individuals		Firm and Individual	
Proportion of outsiders on board	.009	(0.11)	.084	(0.81)	.067	(0.69)
Proportion of outsiders on rem com	-.126	(-1.55)	.035	(0.31)	-.003	(-0.03)
Shareholder Return	.152**	(9.13)	.099**	(5.20)	.121**	(5.41)
Total Employment	.041**	(2.41)	.085**	(3.25)	.079**	(2.90)
Combined Chair/CEO	.080*	(1.88)				
Off-board holding (=1 if >.049)	-.036	(-1.47)	-.027	(-1.13)	-0.18	(-0.76)
Inside directors	.003	(0.37)	.009	(1.02)	.006	(0.69)
Outside directors	0.28**	(3.42)	.012	(1.16)	.012	(1.25)
Observations	2491		2630		2662	
Groups	307		612		627	

Year dummies included.

Table 2.40: Prior Period Pay: Bonet and Conyon (2005)

	xtabond individuals		xtabond individuals*firms		xtabond2 individuals*firms	
Y(t-1)	.479**	.479**	.496**	.497**	.391**	.391**
	(7.11)	(7.11)	(7.32)	(7.33)	(7.59)	(7.59)
Y(t-2)	.039**	.039**	.039**	.040**	-.054**	-.054**
	(2.30)	(2.30)	(2.29)	(2.30)	(-2.59)	(-2.59)
No. of insiders on Rem Com	.024		.004		.002	
	(0.51)		(0.09)		(0.12)	
Any insider on Rem Com		.026		.013		.003
		(0.52)		(0.26)		(0.12)
CEO	.177	.177**	.138**	.139**	.325**	.325**
	(5.29)	(5.29)	(4.66)	(4.66)	(10.51)	(10.51)
Board Size	.002	.002	.002	.003	.012**	.012**
	(0.49)	(0.49)	(0.59)	(0.59)	(3.52)	(3.52)
Size of Rem Com	-.002	-.002	-.002	-.003	.001	.001
	(-0.21)	(-0.21)	(-0.39)	(-0.42)	(0.30)	(0.30)
Ln (market cap)	.061	.061	.067	.067	.143	.143
	(4.60)	(4.60)	(4.82)	(4.80)	(9.83)	(9.73)
Groups	2519		2557		3417	
Observations	8154		8003		11646	

Year dummies included.

2.B.3 Prior Period Pay

The following output shows the results of including prior period pay on the right hand side of the equation. The first column applies the Arellano-Bond ‘differenced’ estimator grouped around firms and second column grouped around the variable that uniquely identifies firm and individual. The third column applies the extended Arellano-Bond estimator designed to compute a levels equation and hence uses a system GMM framework. The two-step version of the estimator with Windmeijer (2005) corrected standard errors was used.

Table 2.41: Prior Period Pay: Conyon and He (2004)

	xtabond firm		xtabond individuals*firms		xtabond2 individuals*firms	
Y(t-1)	.306**	(3.33)	.237**	(2.05)	.289**	(2.67)
Y(t-2)	.095**	(2.14)	.046	(1.18)	.042	(0.65)
Inside Directors	.082	(0.33)	.054	(0.20)	.251	(1.32)
Significant shareholders	-.014	(-0.22)	.023	(0.41)	-.022	(-0.50)
CEO directors	-.268	(-0.82)	-.217	(-0.40)	-.331	(-0.96)
CEO age	-.012	(-1.24)	.025	(0.11)	-.002	(-0.69)
CEO Tenure	-.268	(-0.82)				
Combined Ch/CEO?	-.112	(-0.59)	.041	(0.20)	.023	(0.34)
Board size	.016	(1.30)	.013	(1.16)	.015*	(1.77)
Insiders on the board	.098	(0.49)	.219	(1.07)	-.391**	(-2.33)
Firm size	.091**	(2.08)	.112**	(2.15)	.191**	(3.80)
Firm growth opportunity	-.00002	(-0.14)	-.0001	(-0.79)	.00001	(0.18)
Firm volatility	.498	(1.28)	-.118	(-0.35)	-.265	(-0.86)
Firm performance	.003	(1.51)				
Observations	1440		1094		1557	
Groups	285		334		436	

Year dummies included.

Table 2.42: Prior Period Pay: Anderson and Bizjak (2003)

	xtabond firm		xtabond individuals*firms		xtabond2 individuals*firms	
Y(t-1)	.311**	(3.50)	.299**	(2.49)	.469**	(6.33)
Y(t-2)	.091**	(2.17)	.069*	(1.79)	.122**	(2.22)
Fraction outside directors on Rem Com	-.007	(-0.04)	.108	(0.57)	-.255**	(-2.08)
CEO on remuneration committee			-.049	(-0.21)	-.265	(-1.31)
CEO Turnover	-.094	(-1.49)	-.119	(-1.39)	-.114	(-1.52)
CEO equity holdings			-.002	(-0.73)	-.002	(-0.95)
CEO tenure	.004	(0.62)				
Ln (total assets)	-.021	(-0.37)	-1.43**	(-2.02)	.095**	(3.28)
Risk	.522	(1.32)	-.107	(-0.30)	-.420*	(-1.84)
Investment opportunity set	-.0002	(-0.32)	-.0001	(-0.66)	.00001	(0.10)
Return on assets	.002	(0.18)	.010	(0.58)	-.001	(-0.14)
Market return(t-1)	-.032	(-0.64)	.091	(1.69)	.014*	(1.91)
Firm Groups	284		331		435	
N	1432		1079		1542	

Table 2.43: Prior Period Pay: Core, Holthausen, and Larcker (1999)

	xtabond firm		xtabond individuals*firms		xtabond2 individuals*firms	
Y(t-1)	-.096	(0.15)	-.257	(-1.52)	.301**	(3.19)
Y(t-2)	-.016	(0.19)	-.152	(-0.89)	.174	(1.62)
Sales in millions (t-1)	23.8	(1.06)	69.6	(2.75)	23.8**	(2.78)
Market to book ratio	-.235	(-0.43)	-4820	(-1.04)	-3821	(-0.93)
Return on Assets(t-1)	6435	(1.62)	78883	(1.00)	60526	(0.92)
Stock Return (t-1)	132,611	(1.26)	78854	(1.14)	37014**	(2.48)
S.d of ROA	599,357	(1.10)	399591	(1.08)	-269602	(-0.96)
Combined Chair/CEO	-24291	(-0.31)				
Board size	12413	(0.59)	6539	(0.33)	46387**	(3.37)
Inside directors	1536	(0.59)	102322	(0.36)	-762357**	(-4.34)
Gray outside directors	12710	(0.18)	-56595	(-1.07)	10746	(0.22)
Interlocked outside directors	667,560	(3.22)	267631*	(1.71)	309,173	(1.11)
CEO % ownership	-75314	(-0.30)				
Non-CEO insider owns 5%	13863	(0.22)				
Outside blockholder owns 5%	-77993	(-1.36)				
N	1450		1100		1568	
Groups	287		336		441	

Table 2.44: Prior Period Pay: Newman and Mozes (1999)

	xtabond firm		xtabond individuals*firms		xtabond2 individuals*firms	
Y(t-1)	.237**	(2.50)	.294**	(2.39)	.486**	(5.50)
Y(t-2)	.060	(1.43)	.053	(1.30)	.101*	(1.86)
Major Shareholder Dummy	-.046	(-1.28)				
Ln Sales	.040	(0.72)	-.037	(-0.53)	.104**	(2.87)
CEO Tenure	.004	(0.81)				
TSR	.055	(0.51)	.189	(2.92)	.233**	(3.40)
Return on Equity	.00001	(0.85)	-.0000	(-0.99)	-.0000	(-1.36)
Insider	.059	(0.54)	.024	(0.19)	-.045	(-0.51)
Observations	1359		1025		1479	
Groups	276		319		424	

Table 2.45: Prior Period Pay: Conyon and Peck (1998)

	xtabond firm		xtabond individuals*firms		xtabond2 individuals*firms	
Y(t-1)	.179	(2.89)	.010	(0.96)	.349**	(2.98)
Y(t-2)	.034	(1.02)	-.032	(-0.92)	-.021	(-0.31)
Proportion of insiders on board	-.044	(-0.30)	-.064	(-0.50)	.101	(0.83)
Proportion of outsiders on Rem Com	-.158	(-0.71)	-.106	(-0.38)	-.092	(-0.73)
Shareholder Return	.164	(4.13)	.010**	(2.58)	.027**	(3.11)
Total Employment	-.018	(-0.33)	.121**	(2.25)	.071**	(3.66)
Combined Chair/CEO	.146	(1.39)				
Off-board holding (=1 if >.049)	-.009	(-0.34)	.024	(0.95)	-.017	(-0.51)
Inside directors	.033**	(2.32)	.007	(0.49)	.0006	(0.08)
Outside directors	.018	(1.15)	.006	(0.49)	.068**	(3.63)
Observations	1431		1074		1861	
Groups	285		329		500	

Year dummies included.

Table 2.46: Independence: Bonet and Conyon (2005)

	Original Independence		Company Independence		Manifest Independence		Manifest less tenure	
Y(t-1)	.391** (7.59)	.391** (7.59)	.388** (7.52)	.388** (7.51)	.389** (7.48)	.388** (7.51)	.386** (7.46)	.390** (7.52)
Y(t-2)	-.054** (-2.59)	-.054** (-2.59)	-.052** (-2.55)	-.052** (-2.55)	-.052** (-2.56)	-.052** (-2.55)	-.054** (-2.61)	-.054** (-2.58)
No. of insiders on Rem Com	.002 (0.12)		.030** (2.11)		.008 (1.58)		.014* (1.83)	
Any insider on Rem Com		.003 (0.12)		.030* (1.75)		.011 (1.16)		.006 (0.58)
CEO	.325** (10.51)	.325** (10.51)	.328** (10.50)	.327** (10.48)	.327** (10.47)	.327** (10.45)	.329** (10.48)	.327** (10.44)
Board Size	.012** (3.52)	.012** (3.52)	.011** (3.61)	.012** (3.60)	.011** (3.55)	.011** (3.58)	.011** (3.58)	.012** (3.62)
Size of Rem Com	.001 (0.30)	.001 (0.30)	.000 (0.06)	.000 (0.08)	.001 (0.15)	.000 (0.08)	-.000 (-0.06)	.000 (0.19)
Ln (market cap)	.143** (9.83)	.143** (9.73)	.145** (9.86)	.145** (9.77)	.144** (9.75)	.144** (9.68)	.146** (9.82)	.144** (9.69)
Groups	3417		3417		3417		3417	
Observations	11646		11646		11646		11646	

Year dummies included.

2.C Independence

The following output shows the results of altering the measure of independence. The first column shows the results with the original independence measure used by the authors, the second with Company's own independence assessments and the third with Manifest's assessments. Core, Holthausen, and Larcker (1999) is not included as it breaks down its independent assessment into separate categories. With Anderson and Bizjak (2003), the Company's own assessment is akin to the original assessment used by the authors. Each column uses system GMM (xtabond2) grouped around the variable that uniquely identifies firm and individual.

Table 2.47: Independence: Conyon and He (2004)

	Original Independence	Company Independence	Manifest Independence	Manifest less tenure
Y(t-1)	.289** (2.67)	.314** (2.65)	.319** (2.66)	.256** (2.07)
Y(t-2)	.042 (0.65)	.065 (1.05)	.070 (1.16)	.033 (0.50)
Inside Directors	.251 (1.32)	.343** (2.63)	.026 (0.48)	.126 (1.25)
Significant shareholders	-.022 (-0.50)	-.027 (-0.64)	-.018 (-0.39)	-.025 (-0.53)
CEO directors	-.331 (-0.96)	-.209 (-0.68)	-.212 (0.67)	-.185 (-0.52)
CEO age	-.002 (-0.69)	.039 (0.64)	-.002 (-0.77)	-.001 (-0.42)
Combined Ch/CEO?	.023 (0.34)	.039 (0.64)	.037 (0.58)	.047 (0.68)
Board size	.015* (1.77)	.012 (1.47)	.012 (1.45)	.015* (1.69)
% Eds on the board	-.391** (-2.33)	-.336** (-2.03)	-.330** (-1.96)	-.408** (-2.32)
Firm size	.191** (3.80)	.185** (3.41)	.176** (3.29)	.204** (3.62)
Firm growth opportunity	.00001 (0.18)	-.00001 (0.17)	-.0000 (0.26)	.0000 (-0.09)
Firm volatility	-.265 (-0.86)	-.196 (-0.60)	-.230 (-0.71)	-.282 (-0.87)
Observations	1557	1568	1568	1563
Groups	436	437	437	436

Year dummies included.

Table 2.48: Independence: Anderson and Bizjak (2003)

	Original Independence	Company Independence	Manifest Independence	Manifest less tenure
Y(t-1)	.477** (5.23)	.477** (5.23)	.476** (4.84)	.360** (3.96)
Y(t-2)	.113* (1.94)	.113* (1.94)	.111* (1.84)	.062 (1.07)
Fraction outside directors on Rem Com	-.258** (-2.16)	-.258** (-2.16)	-.064 (-0.75)	-.065 (-0.89)
CEO on Rem Com	-.219 (-1.22)	-.219 (-1.22)	-.174 (-0.92)	-.239 (-1.29)
CEO Turnover	-.059 (-0.72)	-.059 (-0.72)	-.064 (-0.75)	-.099 (-1.20)
CEO equity holdings	-.001 (-0.70)	-.001 (-0.70)	-.001 (-0.72)	-.002 (-0.87)
Ln (total assets)	.096** (2.75)	.096** (2.75)	.096** (2.56)	.136** (3.76)
Risk	-.377 (-1.57)	-.377 (-1.57)	-.387 (-1.57)	-.308 (-1.21)
Investment opportunity set	-.000 (-0.33)	-.000 (-0.33)	-.000 (-0.38)	-.000 (-0.35)
Return on assets	.003 (0.28)	.003 (0.28)	.004 (0.33)	.003 (0.27)
Market return	.015** (1.95)	.015** (1.95)	.014* (1.74)	.021** (2.34)
Firm Groups	436	436	436	435
N	1553	1553	1553	1548

Table 2.49: Independence: Newman and Mozes (1999)

	Original Independence	Company Independence	Manifest Independence	Manifest less tenure
Y(t-1)	.486** (5.50)	.464** (5.69)	.471** (5.80)	.455** (5.17)
Y(t-2)	.101* (1.86)	.090* (1.91)	.092** (2.04)	.074* (1.67)
Ln Sales	.104** (2.87)	.115** (3.56)	.110** (3.56)	.118** (3.71)
TSR	.233** (3.40)	.211** (3.17)	.214** (3.19)	.240** (3.59)
Return on Equity	-.0000 (-1.36)	-.0000 (-1.10)	-.0000 (-0.95)	-.0000 (-0.93)
Insider	-.045 (-0.51)	.068 (1.38)	.019 (0.76)	.012 (0.39)
Observations	1479	1490	1490	1486
Groups	424	425	425	425

Table 2.50: Independence: Conyon and Peck (1998)

	Original Independence	Company Independence	Manifest Independence	Manifest less tenure
Y(t-1)	.349** (2.98)	.349** (2.98)	.332** (2.98)	.401** (3.22)
Y(t-2)	-.021 (-0.31)	-.021 (-0.31)	-.021 (-0.31)	-.002 (-0.04)
Proportion insiders on board	.101 (0.83)	.101 (0.83)	.076 (0.83)	.116 (1.15)
Proportion outsiders on Rem Com	-.092 (-0.73)	-.092 (-0.73)	-.037 (.079)	-.022 (-0.24)
Shareholder Return	.027** (3.11)	.027** (3.11)	.028** (3.20)	.025** (2.75)
Total Employment	.071** (3.66)	.071** (3.66)	.073** (3.92)	.062** (3.00)
Off-board holding (=1 if >.049)	-.017 (-0.51)	-.017 (-0.51)	-.015 (-0.46)	-.031 (-0.97)
Inside directors	.0006 (0.08)	.0006 (0.08)	.002 (0.82)	.002 (0.19)
Outside directors	.068** (3.63)	.068** (3.63)	.070** (3.87)	.062** (3.31)
Observations	1861	1861	1869	1869
Groups (firms)	500	500	502	503

Year dummies included.

Table 2.51: Independence Characteristics: Bonet and Conyon (2005)

	Manifest Categories
Y(t-1)	.379** (7.33)
Y(t-2)	-.058** (2.76)
Association to management (number on rem com)	-.013 (0.52)
Association to Company business (number on rem com)	.038** (3.47)
Outside major shareholder (number on rem com)	.012 (0.49)
Tenure only (number on rem com)	.002 (0.27)
CEO	.330** (10.61)
Board Size	.012** (3.59)
Size of remuneration committee	-.001 (-0.16)
Ln (market capitalisation)	.146** (9.80)
Groups	3417
Observations	11,646

Year dummies included.

2.C.1 Independence Characteristics

The following tables show the output when separate characteristics are substituted for the independence variable.

Table 2.52: Independence Characteristics: Conyon and He (2004)

	Manifest Categories	
Y(t-1)	.363**	(3.29)
Y(t-2)	.099*	(1.69)
Association to management (% on rem com)	.023	(0.90)
Association to company business (% on rem com)	.089	(0.62)
Outside shareholders (% on rem com)	-.146	(-0.77)
Tenure only (% on rem com)	-0.18	(-0.27)
CEO age	-.003	(-0.97)
Combined Ch/CEO?	.011	(0.16)
Board size	.013	(1.47)
% Eds on the board	-.312*	(-1.94)
Firm size	.153**	(3.07)
Firm growth opportunity	-.000	(-0.44)
Firm volatility	-.291	(-0.93)
Observations	1560	
Groups	434	

Year dummies included.

Table 2.53: Independence Characteristics: Anderson and Bizjak (2003)

	Manifest Categories	
Y(t-1)	.429**	(4.95)
Y(t-2)	.088**	(2.15)
Association to management (% on rem com)	.069	(0.33)
Association to company business (% on rem com)	-.001	(0.00)
Outside shareholders (% on rem com)	.085	(0.59)
Tenure only (% on rem com)	-.082	(-1.09)
CEO on remuneration committee	-.139	(-0.79)
CEO Turnover	-.135**	(-3.72)
CEO equity holdings	-.001	(0.35)
Ln (total assets)	.114**	(3.79)
Risk	-.377	(-1.56)
Investment opportunity set	-.000	(-0.16)
Return on assets	.001	(0.10)
Market return	.015**	(2.01)
Firm Groups	428	
N	1530	

Table 2.54: Independence Characteristics: Core, Holthausen, and Larcker (1999)

Y(t-1)	.356**	(4.22)
Y(t-2)	.214**	(2.26)
Association to management (no. on board com)	26541	(0.37)
Association to company business (no. on board com)	32095	(0.63)
Outside shareholders (no. on board com)	26403	(0.46)
Tenure only (no. on board com)	14205	(0.47)
Sales in £millions (t-1)	20.1**	(2.76)
Investment Opportunities (market to book ratio)	-3457	(-0.93)
Return on Assets	54823	(0.92)
Stock Return	32379	(2.38)
S.d of ROA	-233042	(-0.79)
Board size	43200**	(3.27)
N	1570	
Groups	439	

Table 2.55: Independence Characteristics: Newman and Mozes (1999)

	Manifest Categories	
Y(t-1)	.558**	(7.07)
Y(t-2)	.113**	(2.79)
Association to management (=1 if one or more on rem com)	.062	(0.91)
Association to company business (=1 if one or more on rem com)	-.044	(-1.32)
Outside shareholders (=1 if one or more on rem com)	.092	(1.55)
Tenure only (=1 if one or more on rem com)	-.014	(-0.58)
Ln Sales	.085**	(2.83)
TSR	.044	(0.74)
Return on Equity	-.00002	(-1.63)
Observations	1479	
Groups	423	

Table 2.56: Independence Characteristics: Conyon and Peck (1998)

	Manifest Categories	
Y(t-1)	.369**	(2.76)
Y(t-2)	-.008	(-0.11)
Association to management (% on rem com)	-.317	(-1.18)
Association to company business (% on rem com)	.025	(0.26)
Outside shareholders (% on rem com)	.000	(0.00)
Tenure only (% on rem com)	.012	(0.18)
Shareholder Return	.026**	(2.48)
Total Employment	.057**	(3.02)
Largest off-board equity holding (=1 if >.049)	-.042	(-1.27)
Inside directors	.004	(0.43)
Outside directors	.066**	(3.18)
Observations	1850	
Groups (firms)	498	

Year dummies included.

Table 2.57: Dependent Variable: Bonet and Conyon (2005)

	Sal	Emol	Rem	Ln Sal	Ln Emol	Ln Rem
Y(t-1)	.701 (5.39)	.231** (4.13)	.413** (5.56)	.317** (3.98)	.252** (7.00)	.383* (9.07)
Y(t-2)	.040 (0.73)	.069** (2.07)	.117* (1.74)	-.027 (-1.63)	.053** (2.23)	.015 (0.61)
No. of insiders on Rem Com	-3035 (-1.20)	-29690 (-1.61)	-25054** (-2.18)	-.005 (-0.35)	.021 (1.29)	.018 (1.23)
CEO	51207** (4.25)	315223** (8.81)	211323** (5.55)	.322** (8.76)	.345** (11.90)	.323** (10.75)
Board Size	2454** (2.85)	14505** (2.86)	11967** (3.12)	.003 (1.13)	-.000 (0.03)	.007** (2.16)
Size of Rem Com	4185** (2.88)	4838 (0.43)	10656 (1.00)	.017** (4.16)	.002 (0.29)	.002 (0.37)
Market cap	1.66** (3.67)	12.5** (5.75)	11.4** (4.54)	.133** (7.97)	.189** (12.69)	.155** (9.97)
Groups	3,409	3,088	3,447	3,409	3,088	3,447
Observations	11,632	10,566	11,767	11,632	10,566	11,767

Year dummies included.

2.D Dependent Variable

The following tables examine the differences in estimates between salary, emoluments and total remuneration. Both the levels and log-levels are calculated. For comparability, all independence variables are based on the companies' own assessments.

Table 2.58: Dependent Variable: Conyon and He (2004)

	Sal	Emol	Rem	Ln Sal	Ln Emol	Ln Rem
Y(t-1)	.299 (1.43)	-.092 (-1.13)	.286** (2.84)	.202 (1.49)	.115 (1.02)	.304** (2.95)
Y(t-2)	.003 (0.07)	.034 (0.66)	.175 (1.56)	.032 (0.83)	.089 (1.24)	.051 (0.78)
Inside Directors	20733 (0.55)	-68279 (0.19)	29853 (0.14)	.045 (0.35)	.256 (1.42)	.255* (1.81)
Significant shareholders	-42457** (-2.99)	-102263 (0.82)	-57238 (-0.99)	-.049* (-1.94)	.000 (0.00)	-.021 (-0.47)
CEO directors	4449 (0.05)	-842038* (-1.96)	-398214 (-1.52)	-.085 (-0.29)	-.756* (-1.78)	.002 (-0.67)
CEO age	2204* (1.80)	-4370 (0.41)	-4790 (-0.94)	.003 (1.10)	-.002 (0.61)	-.273 (-0.79)
Combined Ch/CEO?	24993 (1.08)	196553 (0.94)	70746 (0.90)	.076 (1.52)	.060 (0.76)	.035 (0.56)
Board size	16180** (3.32)	63208** (1.97)	51376** (3.66)	.012** (2.04)	.007 (0.80)	.012 (1.46)
% Eds on the board	-202,452** (-2.87)	-1601102** (-2.86)	-765163** (-4.05)	-.266** (-2.80)	-.332 (-1.90)	-.338** (-2.01)
Market Cap	3.62** (3.09)	20.7** (2.95)	16.1* (1.87)	.151** (4.59)	.238** (4.64)	.192** (3.81)
Firm growth opportunity	10.1 (1.48)	-.361 (0.38)	-.440 (-0.70)	.000 (-0.09)	.000 (1.23)	.000 (0.04)
Firm volatility	-155453 (-2.34)	-350309 (-0.39)	-688369** (-2.52)	-.116 (-0.56)	-.511 (-1.64)	-.215 (-0.70)
Observations	1549	1527	1564	1549	1527	1564
Groups	431	431	435	431	431	435

Year dummies included.

Table 2.59: Dependent Variable: Anderson and Bizjak (2003)

	Sal	Emol	Rem	Ln Sal	Ln Emol	Ln Rem
Y(t-1)	.402 (1.63)	-.052 (-0.69)	.377 (4.07)	.116 (1.06)	.142 (1.17)	.477** (5.23)
Y(t-2)	.054 (0.86)	.063 (1.04)	.227 (2.18)	.013 (0.41)	.052 (0.60)	.113* (1.94)
Fraction outside directors on Rem Com	-31875 (-0.70)	90232 (0.27)	6060 (0.03)	-.278** (-2.01)	-.194 (-1.38)	-.258** (-2.16)
CEO on remuneration committee	-69542 (-1.60)	-261033 (-1.12)	-186093 (-1.76)	-.227 (-1.51)	-.029 (-0.16)	-.219 (-1.22)
CEO Turnover	-25638 (-1.52)	-327896 (-2.92)	-248727 (-3.18)	-.015 (-0.38)	-.284** (-2.93)	-.059 (-0.72)
CEO equity holdings	-2071** (-2.06)	-13513 (-3.19)	-5333** (-2.30)	-.000 (-0.19)	-.002 (0.90)	-.001 (-0.70)
Ln (total assets)	.001035** (2.50)	.004485 (4.65)	.00306** (2.19)	.160** (8.62)	.175** (3.70)	.096** (2.75)
Risk	-235877** (-2.55)	-728088 (-0.79)	-789037** (-3.29)	.056 (0.24)	-.537 (-1.61)	-.377 (-1.57)
Investment opportunity set	109** (2.38)	-1693 (-0.25)	-3458 (-0.91)	.000 (0.91)	.001 (0.62)	-.000 (-0.33)
Return on assets	-1908** (-2.33)	23803 (0.22)	54615) (0.89)	-.003 (-0.95)	-.009 (-0.55)	.003 (0.28)
Market return	.380* (1.81)	1.908 (1.18)	1.26 (1.25)	.028** (3.46)	.027** (2.07)	.015** (1.95)
Firm Groups	430	431	435	430	431	436
N	1528	1508	1543	1528	1508	1553

Table 2.60: Dependent Variable: Newman and Mozes (1999)

	Sal	Emol	Rem	Ln Sal	Ln Emol	Ln Rem
Y(t-1)	.243 (1.32)	.220** (2.46)	.421** (4.66)	.171 (1.13)	.241** (3.63)	.464** (5.69)
Y(t-2)	-.025 (0.44)	.133 (1.39)	.196** (3.13)	-.051 (-1.34)	.111** (2.17)	.090* (1.91)
Ln Sales	74540** (4.44)	191774** (6.78)	140762** (3.62)	.189** (5.97)	.162** (5.46)	.115** (3.56)
TSR	-3865 (-0.44)	215,780 (1.16)	-50123 (-0.75)	.013 (0.42)	.272** (2.75)	.211** (3.17)
Return on Equity	-11.3** (-2.26)	-27.4 (-1.10)	-20.5 (-0.67)	-.000036 (-4.73)	-.0000 (-1.60)	-.0000 (-1.10)
Insider	20951 (1.39)	63740 (0.55)	89259 (1.10)	.086** (2.26)	.068 (1.43)	.068 (1.38)
Observations	1465	1444	1480	1465	1444	1490
Groups	419	417	424	419	417	425

Table 2.61: Dependent Variable: Conyon and Peck (1998)

	Sal	Emol	Rem	Ln Sal	Ln Emol	Ln Rem
Y(t-1)	.171 (1.31)	-.071 (-.088)	.326** (3.65)	.155 (1.12)	.156 (1.59)	.382** (3.08)
Y(t-2)	-.077 (-1.11)	.059 (1.01)	.204** (1.93)	.000 (0.58)	.030 (0.38)	.057 (0.94)
Proportion insiders on board	73667* (1.78)	-347028 (-0.77)	-151596 (-0.63)	.149 (1.54)	.068 (0.39)	-.005 (0.04)
Proportion outsiders on Rem Com	-101691** (-2.46)	249128 (0.50)	93240 (0.34)	-.151 (-1.45)	.032 (0.22)	-.002 (0.02)
Shareholder Return	-.438 (-1.15)	5.24* (1.66)	2.16 (1.18)	.005 (0.51)	.009 (0.56)	.022* (1.69)
Total Employment	92835** (5.52)	168298** (3.25)	105727** (2.20)	.119** (4.96)	.096** (4.19)	.059** (2.49)
Off-board holding (=1 if >.049)	15475* (-1.86)	-94356 (-1.42)	-42699 (-0.91)	-.028 (-1.19)	-.014 (-0.29)	-.039 (-1.15)
Inside directors	5592 (-1.60)	77,961 (-2.35)	-8759 (-0.66)	.002 (0.20)	-.009 (0.78)	.003 (0.33)
Outside directors	17934** (3.73)	149,862** (3.09)	91452** (3.87)	.052** (4.87)	.089** (4.30)	.068** (2.73)
Observations	1536	1507	1551	1536	1507	1551
Groups	434	432	439	434	432	439

Year dummies included.

2.E Final Estimator

Table 2.62 repeats the construction of the preferred estimator but for all executive directors, including the chief executive. There is no evidence that remuneration committee independence, however measured, determines executive pay. Our control variables impact executive pay in much the same way they impact Chief Executive pay. There is a sign change on the female dummy variable, suggesting that while female CEOs receive more remuneration, female executive directors receive less, although both statistics are statistically insignificant. Again, while being careful not to place too much weight on data with so few female observations, the sign change could be consistent with the idea that female CEOs pay reflects the special ability of these women to break through the glass ceiling, while with female executive directors, the wage discrimination effect is dominant.

The regressions pass the test for no serial correlation in the first differenced residuals, which otherwise would imply inconsistent estimates. However, the Hansen J statistic, robust to heteroscedasticity, rejects the null hypothesis that the overidentifying restrictions are valid. The variables used to instrument prior period pay, as a group, appear not to be exogenous. This introduces the possibility that the estimated coefficients are biased and raises doubt as to the appropriateness of the deeper lags of the dependent variable that were used as instruments for the first lag of the dependent variable in this model. Adjust-

Table 2.62: Preferred Estimator: Executive Directors

Director	Robust Test		Robust Test	
Ln Total Rem	Rents Capture		Optimal Contracting	
<i>Dependent Variable</i>				
$t - 1$	0.499***	(10.25)	0.496***	(10.30)
$t - 2$	0.067**	(2.66)	0.066**	(2.61)
<i>Remuneration Committee Variables</i>				
No. Associated to Management	-0.014	-0.59		
No. Business Relationship	0.015	1.49		
No. Major Shareholders	0.030	1.20		
No. Long Tenure	-0.003	-0.40		
% Insiders (Company)			-0.021	(-0.59)
Committee Size	0.005	(0.96)	0.006	(1.09)
Age	0.029***	(3.11)	0.028***	(3.00)
Age ²	-0.001***	(-3.53)	-0.001***	(-3.44)
Ceo Holdings	-0.002	(-1.10)	-0.002	(-1.09)
Board Size	0.010***	(3.50)	0.011***	(3.67)
Sales	0.086***	(6.50)	0.086***	(6.67)
TSR	0.104***	(6.56)	0.104***	(6.56)
EPS	0.000	(-0.95)	0.000	(-0.96)
<i>Dummy Variables</i>				
Resigned in Year	-0.012	(-0.76)	-0.012	(-0.72)
Appointed in Year	0.038	(1.20)	0.037	(1.18)
CEO	0.234***	(7.27)	0.236***	(7.37)
Female	-0.056	(-1.53)	-0.054	(-1.49)
Blockholder	-0.029*	(-1.97)	-0.027*	(-1.85)
Constant	2.856***	(5.21)	2.958***	(5.33)
1998	0.197**	(2.24)	0.187**	(2.15)
1999	0.241***	(2.70)	0.231**	(2.62)
2000	0.286***	(3.17)	0.275***	(3.10)
2001	0.335***	(3.52)	0.322***	(3.47)
2002	0.390***	(4.14)	0.374***	(4.09)
2003	0.402***	(4.28)	0.386***	(4.23)
2004	0.419***	(4.09)	0.406***	(4.10)
2005	0.433***	(3.90)	0.423***	(3.96)
N	11099		11099	
Groups	3304		3304	
Instruments	79		79	
F-stat(27, 3303)	306.55		342.45	
Hansen J χ^2	108.01		107.64	
<i>Prob</i> > χ^2	(0.000)		(0.000)	
No second order	1.210		1.270	
autocorrelation in first differences	(0.226)		(0.203)	

ing the instrument set with different lags of the dependent variable, reduced the Hansen J statistic but not to the point where the null could no longer be rejected. Therefore, the results reported above should be taken in light of this.

2.E.1 Robustness Checks

In section 2.4.2, the difficulties of arriving at an accurate estimate of the fair value of executive equity incentives were discussed. It was concluded that the most appropriate strategy, was to use one-third of the face value of the equity incentive as an approximation of the worth of the incentive to the executive. It is possible that this is either too high or too low, depending on factors such as the executive's preference for risk and the extent to which the vesting conditions are achievable. To test whether our estimates are sensitive to the value we put on equity incentives we re-estimated our preferred model with different values for equity incentives. Tables 2.63 and 2.64 use 20% and 50% of the face value of equity incentives respectively in the calculation of total CEO remuneration.

The estimated coefficients on the remuneration committee independence variables are robust to the alternative estimates of the worth of equity incentives. Independence remains mostly inconsequential in the determination of CEO pay, apart from the broad insider measure which remains significant at the 10% level. With the 50% estimate, the positive coefficient on the female dummy becomes significant at the 10% level and the year dummies become even more significant. Otherwise, the control variables are qualitatively unaffected by the different equity incentive estimates.

2.F Independence Assessments

The divergence between Manifest's assessments of independence and companies' own assessments arises from the application of Provision A.3.1 of the Combined Code (2003). Under the Code, companies have the freedom to pass their directors for independence notwithstanding violating any of the points below, provided justification is disclosed. It is then for shareholders to decide whether that explanation is adequate. In Manifest's opinion, very often it is not. Therefore, in normal circumstances, Manifest's policy is to flag an independence issue ('fail for independence') on a director if they contradict any of the points in the provision below, unless there are exceptional reasons not to do so. In addition, Manifest will fail directors if there are any other independence issues to

Table 2.63: CEOs: Equity Incentives 20% of Face Value

Director Ln Total Rem	Robust Test Rents Capture		Robust Test Optimal Contracting	
<i>Dependent Variable</i>				
$t - 1$	0.428***	(3.92)	0.412***	(3.77)
$t - 2$	0.052	(1.35)	0.045	(1.12)
<i>Remuneration Committee Variables</i>				
No. Associated to Management	-0.027	(-0.48)		
No. Business Relationship	-0.009	(-0.32)		
No. Major Shareholders	0.028	(0.72)		
No. Long Tenure	0.002	(0.10)		
% Insiders (Company)			0.135*	(1.64)
Committee Size	0.008	(0.78)	0.008	(0.73)
Age	0.049*	(1.60)	0.053*	(1.79)
Age ²	-0.001*	(-1.73)	-0.001*	(-1.91)
Ceo Holdings	0.000	(-0.11)	0.000	(-0.19)
Board Size	0.017***	(2.97)	0.017***	(2.90)
Sales	0.105***	(3.71)	0.112***	(3.85)
TSR	0.070**	(2.09)	0.067**	(2.00)
EPS	0.000	(-0.27)	0.000	(-0.16)
<i>Dummy Variables</i>				
Resigned in Year	0.031	(0.71)	0.033	(0.80)
Appointed in Year	-0.080	(-1.32)	-0.074	(-1.26)
Combined Chairman & CEO	0.031	(0.61)	0.034	(0.66)
Female	0.090	(1.18)	0.099	(1.30)
Blockholder	-0.019	(-0.73)	-0.023	(-0.90)
Constant	3.240***	(2.99)	3.294***	(2.97)
1998	0.140	(0.74)	0.115	(0.54)
1999	0.216	(1.12)	0.197	(0.92)
2000	0.285	(1.47)	0.270	(1.26)
2001	0.275	(1.34)	0.265	(1.19)
2002	0.353*	(1.65)	0.349	(1.51)
2003	0.402*	(1.85)	0.401*	(1.73)
2004	0.443*	(1.91)	0.444*	(1.80)
2005	0.468*	(1.86)	0.470*	(1.78)
N	2141		2141	
Groups	681		681	
Instruments	79		76	
F-stat(27, 680)	60.03		62.73	
Hansen J χ^2	58.71		59.27	
<i>Prob</i> > χ^2	(0.214)		(0.200)	
No second order autocorrelation in first differences	0.38 (0.703)		0.43 (0.669)	

Table 2.64: CEOs: Equity Incentives 50% of Face Value

Director Ln Total Rem	Robust Test Rents Capture		Robust Test Optimal Contracting	
<i>Dependent Variable</i>				
$t - 1$	0.385***	(4.71)	0.386***	(4.47)
$t - 2$	0.081**	(1.99)	0.080**	(1.95)
<i>Remuneration Committee Variables</i>				
No. Associated to Management	-0.022	(-0.40)		
No. Business Relationship	-0.004	(-0.14)		
No. Major Shareholders	0.036	(0.88)		
No. Long Tenure	-0.007	(-0.35)		
% Insiders (Company)			0.158*	(1.78)
Committee Size	0.007	(0.51)	0.005	(0.38)
Age	0.059*	(1.77)	0.059*	(1.75)
Age ²	-0.001**	(-1.96)	-0.001*	(-1.93)
Ceo Holdings	-0.002	(-0.87)	-0.002	(-0.85)
Board Size	0.022***	(3.41)	0.022***	(3.32)
Sales	0.118***	(4.58)	0.120***	(4.46)
TSR	0.102**	(2.48)	0.099**	(2.41)
EPS	0.000	(-0.02)	0.000	(0.02)
<i>Dummy Variables</i>				
Resigned in Year	-0.031	(-0.63)	-0.030	(-0.61)
Appointed in Year	-0.055	(-0.64)	-0.054	(-0.64)
Combined Chairman & CEO	0.041	(0.72)	0.042	(0.74)
Female	0.165*	(1.61)	0.166*	(1.63)
Blockholder	-0.038	(-1.28)	-0.043	(-1.46)
Constant	2.905***	(3.24)	2.898***	(3.16)
1998	0.248*	(1.50)	0.226	(1.20)
1999	0.320*	(1.89)	0.300	(1.58)
2000	0.432**	(2.70)	0.413**	(2.28)
2001	0.410**	(2.33)	0.394**	(1.96)
2002	0.518***	(2.93)	0.503**	(2.48)
2003	0.565***	(3.22)	0.549**	(2.73)
2004	0.603***	(3.18)	0.589**	(2.72)
2005	0.613***	(2.85)	0.600**	(2.47)
N	2141		2141	
Groups	681		681	
Instruments	79		76	
F-stat(27, 680)	57.21		60.67	
Hansen J χ^2	57.82		57.83	
<i>Prob</i> > χ^2	(0.238)		(0.238)	
No second order autocorrelation in first differences	0.12 (0.908)		0.16 (0.874)	

which they feel shareholders should be alerted. Manifest will always fail the director if the Company fails the director.

2.F.1 Combined Code (2003) Provision A.3.1

The board should identify in the annual report each non-executive director it considers to be independent. The board should determine whether the director is independent in character and judgement and whether there are relationships or circumstances which are likely to affect, or could appear to affect, the director's judgement. The board should state its reasons if it determines that a director is independent notwithstanding the existence of relationships or circumstances which may appear relevant to its determination, including if the director:

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

2.G Manifest Information Services Ltd

Manifest provides research and proxy vote solutions for institutional investors and company advisors. Manifest was the UK's first on-line proxy voting agency to offer customised electronic proxy vote management. Manifest offers a wide range of governance related support services to fund managers, pension funds, public funds, professional advisors, regulatory agencies and government departments.

Manifest was founded in December 1995 in Witham, Essex. Further information is available at www.manfiest.co.uk.

A Competing Risks Analysis of Chief Executive Turnover

*

'I am resigning for personal reasons... this is purely a personal decision.'

Jeffrey Skilling on resigning as CEO from Enron Corp.

3.1 Introduction

In a UK public company, whilst the board sets the company's aims and the broad strategies for achieving them, the chief executive officer (CEO) is responsible for the day to day running of the company. Concern has been raised, however, about the ability of the board to adequately control the actions of the CEO, with the result being that the CEO may depart from the efficient pursuit of shareholder value maximisation (Jensen and Meckling, 1976; Fama, 1980; Shleifer and Vishny, 1997). As seen in chapter 2, one instrument used to align the interests of the shareholders and the CEO is the CEO's remuneration package. The level of remuneration is often twice as high for the CEO as that of the second highest paid director (MM & K Ltd, 2007) and typically contains large performance-related elements. A second instrument is the ability of the board of directors to sack the CEO (Fama and Jensen, 1983; Zajac, 1990; Lin, 1996). Indeed, Fama (1980) argues that damage to managerial reputation, with the implied threat to future earnings, is the

*The paper 'Fired or retired: A competing risks analysis of Chief Executive Turnover' (forthcoming in *The Economic Journal Conference Volume*) co-authored with Steve Thompson and Peter Wright provides the basis for this chapter.

main constraint on CEO behaviour. The strength of this incentive will be influenced by the extent to which boards are able to monitor the actions of the CEO and, as with remuneration, it is typical that the board will proxy the CEO's ability by a measure of firm performance. Poorly performing CEO's should lose their jobs.

There is a perception in the business press that the typical length of service for CEOs within large UK companies has decreased in recent times² and, moreover, CEOs are experiencing shorter tenures due to a greater likelihood of being fired.³ This increased risk of dismissal in the UK is in turn attributed to the ongoing reform of corporate governance arrangements that began with the Cadbury (1992) Report and continued in the review of board effectiveness by Higgs (2003), whose recommendations were included in the revised version of the Combined Code (2003).⁴ It has also been suggested that an increase in shareholder activism and voting levels, as called for by the Hampel (1998) and Myners (2001; 2004) Reports, have contributed to a more demanding governance regime. It is argued that institutions have increasingly coordinated their behaviour to provide a more effective constraint on CEO actions (Leech, 2003). Indeed, the ability of shareholders in the UK to dismiss the board at a company meeting is envied by activists in the US (Monks and Minow, 2004).

Despite this, there is a body of literature that has raised concerns about whether boards are willing or able to remove under-performing CEOs, even if these can be identified (Lipton and Lorsch, 1992; Jensen, 1993). Although boards are traditionally constituted as guardians of shareholder interests, they are likely to fail in this task if they have inadequate incentives to avoid the rational attempts by the CEO to capture or negate their influence. Indeed, boards have been accused of providing inefficient contracts, that are heavily weighted in favour of the CEO, because of the undue influence the latter has in the pay-setting process (Bebchuk and Fried, 2003, 2004). Similarly, if the board gets 'captured' by the CEO the latter will become entrenched and difficult, if not impossible, to dismiss.

The extent to which policy measures are able to impact on the relative power of the CEO and shareholders is also disputed in the literature (Weisbach, 2007). If CEOs have the capacity to capture the remuneration and dismissals processes, it follows that efforts to reduce their power relative to the board might also be captured and rendered ineffective.

²See, for instance, 'The art of the sweetly timed exit', Financial Times, 19th Aug 2004.

³As opposed to alternative modes of exit such as voluntary retirements.

⁴Companies listed on the London Stock Exchange are expected to comply with, or explain their non-compliance with, the Combined Code (2003).

For example, the Combined Code relies on the boards themselves to determine the independence of their non-executive directors. If the board is already captured, then it could classify directors as independent to satisfy the provision in the Combined Code, even if such an assessment might be considered dubious.

A less ambiguous impact of the reform process in relation to CEO tenure has been the reduction in contract length and of the notice period in a CEO's service contract. Prior to the Cadbury (1992) and Greenbury (1995) Reports, contracts with 3 or even 5 year rolling notice periods were not uncommon. Moreover, contract termination provisions were typically opaque and often resulted in compensation payments that included forgone annual bonus opportunities, enhanced pension provision and an acceleration in the vesting of share options (Trade and Industry Select Committee, 2003). After Greenbury (1995), contracts were reduced and termination provisions curtailed to the point that, under the revised Combined Code (2003), service contracts should provide for no more than 12 months' salary⁵. In addition, disclosure was made more transparent and formalised in the Directors' Remuneration Report Regulations (2002).

3.2 Literature Review

Empirical evidence from the US is generally supportive of the premise that prior poor performance increases the likelihood of CEO turnover. Indeed, Shleifer and Vishny (1997) argue that this is one of the most robust findings in the corporate governance literature. A summary of this evidence is provided in table 3.1.

Coughlan and Schmidt (1985) were amongst the first to investigate the idea that firms use the prospect of turnover (in addition to remuneration) in order to discipline behaviour. Using a logit model, Coughlan and Schmidt (1985) established the inverse relationship between market-adjusted stock performance and the probability of CEO turnover. Parrino (1997), analyses companies over a 20 year period and distinguishes between voluntary and involuntary turnover. Parrino (1997) finds that the probability of involuntary turnover is significantly correlated with return on assets generated by the CEO. Engel, Hayes, and Wang (2003), using 25 year panel dataset, find evidence that both market and accounting performance measures determine turnover likelihood. Moreover, Engel, Hayes, and

⁵Note that, at the median, 12 months' salary is worth approximately double in real terms in 2005 compared to 1995 (Gregory-Smith, 2007). Nevertheless, this still means a substantial reduction in the total cost of removing a CEO has occurred over this period.

Wang (2003) demonstrate that accounting measures are more important relative to market measures when the accounting measure is more precise and when market measures are contaminated by events outside the CEO's control. Farrell and Whidbee (2003) find that deviations between the expectations of earnings performance as measured by analyst forecasts and actual reported earnings significantly increase the likelihood of CEO turnover. Using 1316 CEO successions from 1971 to 1994, Huson, Parrino, and Starks (2001) distinguish between voluntary and involuntary departures and find that the frequencies of forced turnover and outside succession have increased over time. Furthermore, Huson, Parrino, and Starks (2001) conclude that it is the more effective internal monitoring by boards of directors during this period that driven the greater likelihood of forced departure.

Evidence on UK companies is comparatively thin. Conyon and Florou (2002)'s findings are consistent with the main US result, that a statistically robust inverse relationship exists between firm performance. Dahya, Lonie, and Power (1998); Franks, Mayer, and Renneboog (2001) also find this to be the case. Dahya, McConnell, and Travlos (2002) and Dedman (2003) find that this relationship has strengthened post Cadbury (1992) but unlike Dahya, McConnell, and Travlos (2002), Dedman (2003) do not attribute the strengthening to more effective boards following the Cadbury reforms, rather a more active managerial labour market.

Another an interesting finding within the literature is that CEO replacement decisions may have similar determinants across different corporate governance regimes. Kaplan (1994) and Kaplan and Minton (1994) found that CEOs in Japan and Germany, countries whose governance systems are traditionally characterised as involving long job tenure, were subject to similar influences to their Anglo-American counterparts. For example, in both Japan and the US turnover was found to be sensitive to market and accounting measures of performance.

Yet the literature has found that performance does not entirely determine CEO turnover. Friedman and Singh (1989) find that performance is important, but so are the particular conditions which initiate the succession event. These include whether the CEO is close to retirement age, the extent to which the CEO's departure is voluntary and whether an 'heir apparent' was identified prior to departure. Murphy (1999) shows that increasing age and firm size considerably diminish the sensitivity of turnover to performance ⁶.

⁶Although Murphy (1999) uses a linear probability model, which imposes questionable restrictions on the distribution of residuals, Murphy (1999) states that qualitatively similar results were achieved with a logit model.

Table 3.1: CEO Turnover and Performance

<i>Study</i>	<i>Sample</i>	<i>Method</i>	<i>Finding</i>
Coughlan & Schmidt (1985)	249 Forbes companies 1977-1980	Logit regression	CEO turnover reflects past stock price performance.
Warner, Watts & Wruck (1988)	269 NYSE and AMEX companies 1962-1978	Logit regression	Only extremely good or bad stock performance impacts probability of CEO turnover
Dalton & Kesner (1985)	96 NYSE firms experiencing succession	Sample partitioned. No regression	Succession associated with poor Return on Equity. Mid performers most likely to hire externally
Friedman & Singh (1989)	187 Fortune 500 companies	Logit regression.	Controlling for the context of the event, Stock market performance is important
Parrino (1997)	977 Forbes successions 1969-1989	Logit regression	Forced CEO exit reflects poor Return on Assets, particularly in homogenous industries
Murphy (1999)	S&P 500 1970-1995	Linear probability model	Performance-turnover sensitivity highest amongst smaller firms. Age more important in larger firms.
Engel, Hayes & Wang (2003)	800 Forbes companies 1975-2000	Logit regression	Turnover reflects both industry adjusted accounting returns and market returns
Farrell & Whidbee (2003)	ExecuComp and Forbes companies 1985-1997	Logit Regression	Deviations from analysts earnings forecasts increase turnover likelihood
Mikkelsen & Partch (1997)	US industrial companies 1984-1993	Logit regression	Turnover more responsive to performance during an active takeover market
Huson, Parrino & Starks (2001)	1326 Forbes successions 1971-1994	Logit Regression	Increased frequency of forced CEO exit over time due to improved internal monitoring by boards

Brickley (2003) acknowledges performance as a significant determinant in exit likelihood but regards the magnitude of the estimated coefficients on the performance variables reported in the literature as disappointing. Indeed, Warner, Watts, and Wruck (1988) and Conyon and Florou (2002) find that while an inverse relationship between performance and CEO turnover exists, it is really only extremely good performance or extremely bad performance that has a major impact on turnover probability.

Mikkelson and Partch (1997) find CEO turnover to be responsive to firm performance between 1984 and 1988 and but less so between 1989 and 1993. The explanation given is that the active takeover market in the first period acted as a stimulus to performance-turnover sensitivity but when takeovers become less common, as occurred in the later period, the sensitivity of turnover to performance declined. Other anomalous evidence includes Dalton and Kesner (1985) who find that middle performers are more likely to replace the CEO with an external appointment. An external appointed is typically interpreted in the literature as a signal of under-performance from the prior CEO.

Other variables that have deemed to be important in the probability of CEO turnover include the composition of the board in terms of its size (Yermack, 1996); and insider-outsider ratio (Weisbach, 1988; Boeker and Goodstein, 1993). There are obvious governance implications if an increase in the proportion of directors with affiliations to the CEO reduces the threat of CEO dismissal. Such evidence is consistent with a theory of managerial power and unresolved agency problems as a reduced threat of dismissal might enable the pursuit of objectives that are not shared by the owners. In the UK, Dahya, Lonie, and Power (1998) find that a CEO with even a small equity stake is better able to resist dismissal than a CEO who holds less than 1% of the equity, although this finding is not confirmed by Conyon and Florou (2002) or Franks, Mayer, and Renneboog (2001).

Yet whilst the aforementioned studies are instructive, there are good reasons to suspect that they are not telling the whole story. For example, it has been suggested that a CEO may use their control of information and board appointments to entrench themselves during their tenure, ensuring the board of directors becomes increasingly favourably disposed towards them (Hermalin and Weisbach, 2003). If this is true, then it is likely that the impact of performance on the probability of CEO exit will vary over time. An alternative hypothesis, which would also lead to a time varying impact of performance relates to imperfect monitoring: if the output of a CEO cannot be observed directly and must be inferred from the firm's results, then there will be some lag before a CEO is judged to be under-performing. It is only after this period that a badly performing CEO will be

removed from their position. Finally, as outlined above, it is widely conjectured that substantial changes to the governance environment in which CEOs have been operating will have affected exit probabilities.

3.2.1 Duration Analysis Literature

'In summary, we have probably reached a point of diminishing returns in estimating logit models that focus on the relation between CEO turnover and firm performance measures. We will have to consider other less-explored issues to increase our understanding of CEO turnovers and replacements.'

Brickley (2003) p.227.

Consistent with the change in direction voiced by Brickley (2003) above, there is a small literature that has attempted to analysis managerial succession using duration analysis. This chapter seeks to add to this literature. Duration analysis is an efficient method of modeling time until an event and enables the analysis of CEO turnover where exit probabilities are allowed to vary over the CEO's tenure. Section 3.4 examines this method.

Allgood and Farrell (2003) also use duration analysis to examine 1388 US CEO turnover events between 1981 and 1993. Using a non-parametric graphical hazard analysis they find that the likelihood of CEO exit increases until the fifth year of tenure and declines thereafter. They use job match theory to explain this phenomenon; that is bad matches are increasingly identified and ended in the first five years, after which time only good matches remain. They support this result with a multinomial logit model with three exit states: a good match; a bad match that ends in a quit and a bad match that ends in a dismissal. Our analysis will be shown to be broadly consistent with this finding; however we will use duration analysis not just to illustrate the hazard but we will incorporate directly in our formal econometric analysis. This will allow a more flexible examination of the impact of predictor variables on the likelihood of CEO exit as the likelihood of exit is allowed to vary continuously over CEO's tenure.

Geddes and Vinod (1997) focus on non-performance related determinants of CEO tenure. Using data on 367 US corporations between 1973 and 1983, they find that more independent directors results in longer, not shorter, durations, albeit the effect diminishes after controlling for age and performance. Geddes and Vinod (1997) use a similar framework to ours, however our approach allows for the different types (competing risks) of CEO exit

to impact upon the hazard simultaneously. Further, their result is overturned by the authors later work (Geddes and Vinod, 2002) which also finds that the increased competition arising from deregulation in the US increased the likelihood of turnover.

Using 250 UK companies between 1998 and 2003, Renneboog and Trojanowski (2003) find that poor prior accounting performance increases the likelihood of CEO. Evidence is also found suggesting that increasing the proportion of non-executive directors and ending the combined Chairman-CEO role reduces CEO tenure. This result is found using a binominal model of CEO turnover and duration analysis is used as a robustness check. Again however, our model, unlike theirs, will analyse the impact of predictor variables on all the competing risks of CEO exit. This is fundamental to our analysis as we believe that our performance and insider variables will impact the different risk types in different ways. For instance, we expect good performance to reduce the risk of dismissal but increase the likelihood of being headhunted.

In this chapter, we seek to examine issues surrounding the probability and mode of CEO exit using a dataset which is unique in terms of its detail. It allows us to model the duration of CEO tenure and to ascertain the varying likelihood of CEO exit using a competing risks framework. This permits us to test between a number of the competing hypotheses outlined above by deriving the determinants of competing exit states for appointed CEOs. Section 3.3 gives an overview of the data, including a graphical inspection of the hazard rates before a more formal semi-parametric analysis is presented in Section 3.4. Section 3.5 concludes.

3.3 Data

As in chapter 2, the primary information used in this study is supplied by Manifest and comprises all UK companies that have featured in the FTSE 350 Index during any financial year between January 1996 and December 2005. A major advantage of Manifest's data is that the name of the CEO, together with their appointment and departure date are identified.⁷ The period chosen covers a full economic cycle, with market growth until 2001, subsequent decline and recovery. Moreover, the period under analysis is particularly interesting given the steady flow of corporate governance reforms designed to improve the transparency and accountability of boards. Investment trusts that contained

⁷Again, to avoid survivorship bias as far as possible, companies that drop out of the index prior to 2006 are included in our sample unless the company is no longer publicly quoted.

no executive directors are excluded from the sample, although self-managed investment trusts are retained. Manifest's data was further supplemented with other control variables from Thomson Datastream. Summary statistics are provided in Table 3.2.

Table 3.2: Sample Description

	1996-2000	2001-2005	1996-2005
No. of companies	505	508	590
No. of CEOs	676	759	1179
No. of CEO exits	333	579	912
No. of interim appointments	23	84	107
% of CEOs exiting (excluding interim)	47%	73%	75%
Total Observations	2120	2413	4533
<i>Survival times, years</i>			
1st quartile	2.53	2.18	2.33
Median	5.41	4.00	4.34
3rd quartile	10.01	6.51	7.24
<i>Age</i>			
1st quartile	46	45	46
Median	51	50	51
3rd quartile	55	55	55
<i>Total Shareholder Return</i>			
1st quartile	-9.40%	-18.00%	-13.48%
Median	11.74%	8.35%	10.12%
3rd quartile	33.40%	26.30%	29.60%
<i>%Insiders on board (median)</i>			
Company assessment	0.510	0.500	0.500
Sales (median) (2006, £)	563m	573m	570m
Board Size (median)	8	8	8

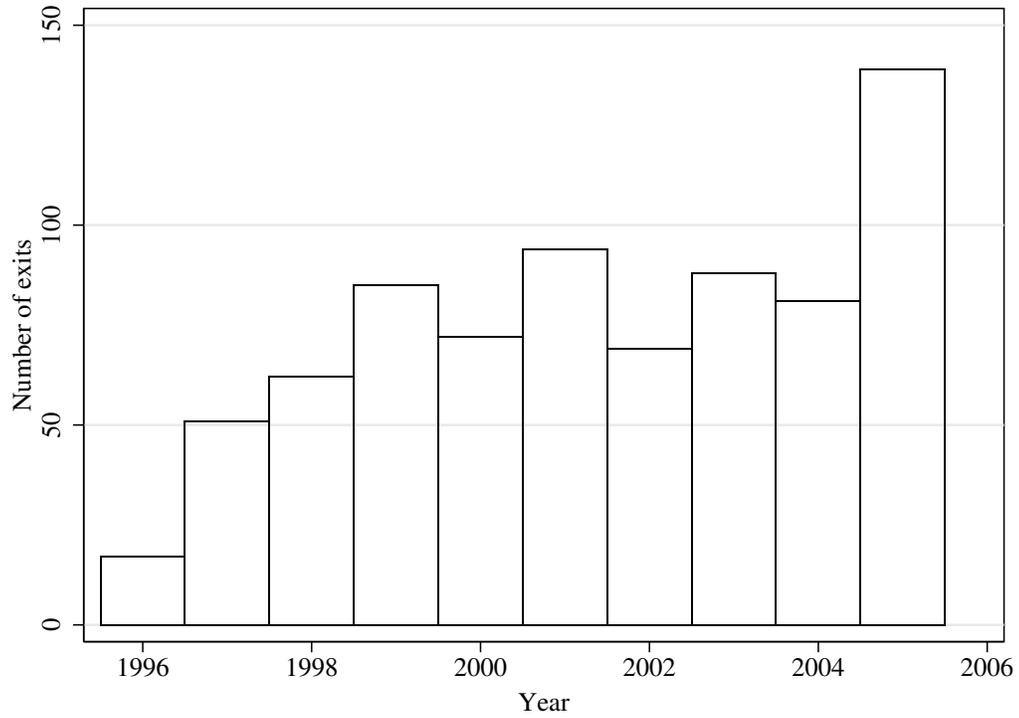
Over our sample period we observe 1179 CEOs working for 590 companies. Of these, 912 end with the termination of the CEO's contract. The median survival time for a CEO is about $4\frac{1}{2}$ years. Note that, in line with popular perception, the proportion of CEOs experiencing an exit event is significantly higher in the second period, with the median survival time being approximately $1\frac{1}{2}$ years shorter in the second half of the sample. This increase is shown year on year in figure 3.1. This decline in average CEO tenure coincides with a decline in market performance, as measured by total shareholder return.⁸

The table also reflects the institutional changes over the period, with the percentage of insiders falling steadily during the period (Figure 3.2) and the percentage of non-executive directors rising. The percentage of insiders is defined as the proportion of the board that consists of executive directors and affiliated non-executive directors.

There are a number of ways in which a CEO can leave their position, only one of which is

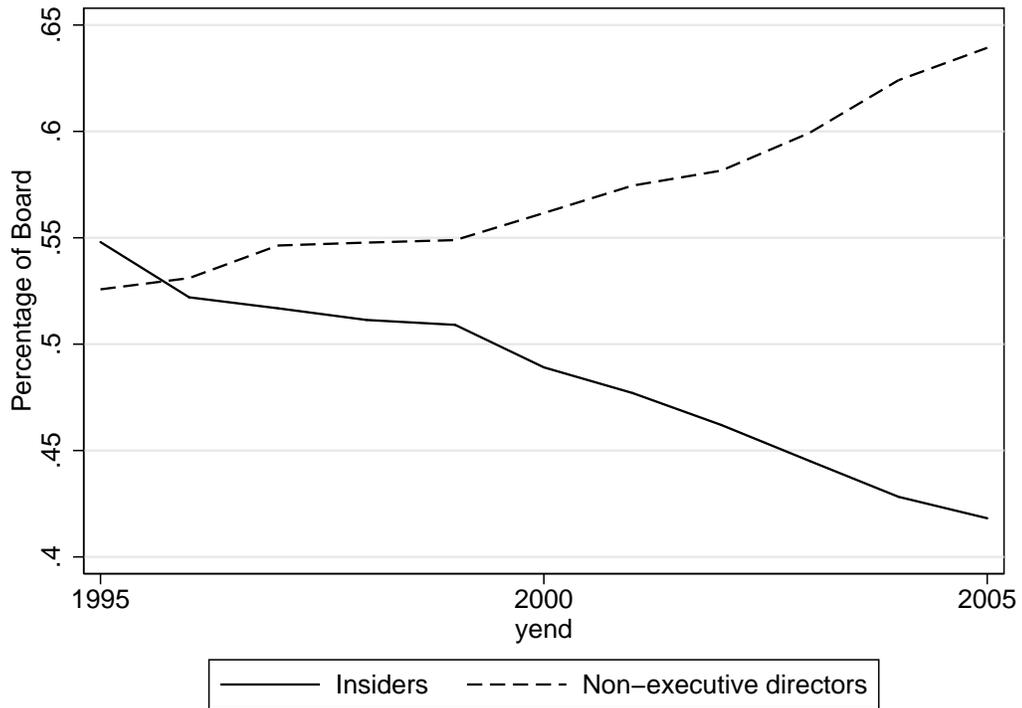
⁸Total shareholder return reflects both the capital gain from the movement in the share price and income from dividends.

Figure 3.1: CEO Exits Over Time



Notes: Figure excludes interim appointments and internal position changes.

Figure 3.2: Mean Board Composition



dismissal. We conducted an electronic search of the CEO's name around the dates of their exit using Lexis/Nexis database, the Financial Times Archives, Google News Archives and Regulatory New Service announcements to identify the circumstances under which the CEO exited. As the CEOs in our sample belonged to companies in the FTSE 350, information was found in all cases. This allowed us to split the exit events into 9 types, details of which are given in Table 3.3.

CEOs are rarely officially 'dismissed', with only 10 CEOs suffering this fate in the 10 years of the sample. This is consistent with Warner, Watts, and Wruck (1988) who found only one example where the CEO was sacked out of 272 US firms between 1963 and 1978 and Weisbach (1988) who found only nine performance based dismissals out of 286 succession events. In many cases it is suspected that face-saving descriptions are used, either to avoid further damage to the ousted executive's reputation or to facilitate the conclusion of negotiations over compensation. Therefore, a second performance-related category was established to identify instances where the CEO had resigned under pressure from the board and/or shareholders. Extreme care was taken in classifying the mode of CEO dismissal. Only where clear evidence was found to show that the CEO had been involuntarily removed from their position, the CEO was considered to have been 'ousted'.

In the majority of cases, the classification of exit type was straightforward as the ousting of a FTSE 350 CEO would be reported by numerous business sources. We assume these sources are reliable on the basis that inaccurate coverage of a high profile event would incur a penalty to the reputation of the reporter's credibility. However, in a small number of cases, no clear reason was given for the departure of the CEO and we could find no clear evidence of either an ousting or an immediate appointment to another company. These were put into an 'unclassified' departure category. The absence of any press rumours of dismissal suggests these cases were not among the more egregious examples of CEO behaviour, but it is suspected this category includes departures from a number of causes, including changes of career, moves to private equity companies etc. Company announcements of such departures often contained references to family or personal reasons (for instance where the CEO wished to relocate to another country).

Whilst we initially considered dropping these unclassified departures entirely, we have retained the category since a failure to find evidence of forced or other dismissal in the many business sources searched is itself instructive. Using an analogy from the medical literature- where most competing risk studies are published - dropping the unclassified cases would be comparable to ignoring deaths without visible symptoms!

The appropriateness of our classification of exit is supported by a number of secondary statistics which we present above. Table 3.4 shows that those executives who lose their jobs if ousted, along with those that retire, are relatively unlikely to find future-employment in FTSE-350. Those who's departures were 'unclassified' are also unlikely to be re-employed. Unsurprisingly, those that are headhunted, but also those that lose their job due to a change of ownership, are relatively likely be re-employed.

The table also shows CEO age by exit event. CEOs who retire, or become part time directors, have the oldest median age of 56. By contrast, CEOs that are ousted have a median age of 50. 'Unclassified' departures appears to be a distinct category, with a median age of 54.

Finally, the table shows the proportion of CEO's who exit on the last day of the month by exit type. Directors who retire, or retire to a part time position, tend to serve until the end of the month, whereas those that are ousted or dismissed have their contract terminated during the month. Again, 'unclassified' departures appear to be a distinct group.

Table 3.3: CEO Turnover by Mode of Exit

	1996 – 2000		2001 – 2005		1996 – 2005	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
Dismissed	3	0.90	7	1.21	10	1.10
Ousted	41	12.31	84	14.51	125	13.71
Internal Change	28	8.41	28	4.84	56	6.14
Interim Appointment	23	6.91	84	14.51	107	11.73
Retirement	90	27.03	162	27.98	252	27.63
Retired to Part Time	30	9.01	54	9.33	84	9.21
Change of Control	74	22.22	89	15.37	163	17.87
Head-hunted	23	6.91	27	4.66	50	5.48
Unclassified	21	6.31	44	7.60	65	7.13
Total exits	333	100	579	100	912	100

A common occurrence during the sample period was that the roles of Chairman and Chief Executive were split, consistent with the post-Cadbury recommendation for best practice. We code these cases separately as 'internal change' since they do not appear to constitute a forced CEO exit. We also code separately those CEO exits arising from restructuring or change of control.⁹ 'Interim' appointments to the CEO's position generally arise as a consequence of the sudden departure of the previous CEO, when someone, most often the Chairman, steps in to fill the role of Chief Executive on a caretaker basis. As these appointments are temporary by definition we exclude them from our analysis.

⁹Indeed, in some cases the CEO continues as CEO of the new company.

Table 3.4: Characteristics of Individuals by Exit Event

<i>Event</i>	<i>N</i>	<i>Median Age</i>	<i>Mean Age</i>	<i>% Re-employed in FTSE 350</i>	<i>% exit at month end</i>
No Exit	303	49	49.06	-	-
Dismissed	10	52.5	49.6	10.00%	20.00
Ousted	125	50	50.51	2.45%	18.49
Interim	56	53	51.05	-	21.43
Retirement	239	56	54.75	0.39%	42.86
Retired to part-time	84	56	54.14	0.00%	40.48
Change of control	163	50	49.25	10.42%	6.13
Headhunted	50	49	47.96	16.00%	36.00
Unclassified	65	54	52.13	0.00%	26.15
Total	1095	52	51.12		

Table 3.5 breaks down CEO tenure by exit event. The survival times are lowest for interim appointments, as might be expected, followed by those who are headhunted, who also tend to be relatively young. Those who are dismissed and ousted have the next shortest tenure. Those whose positions end with retirement generally have the longest tenures and are oldest at exit. This further illustrates the importance of carefully distinguishing exit states in any empirical analysis.

Table 3.5: Tenure by Exit Event

	<i>Survival times</i>			<i>Age at exit</i>	
	<i>Lower quartile</i>	<i>Median</i>	<i>Upper quartile</i>	<i>Median</i>	<i>Mean</i>
Dismissed	2.0	2.4	5.0	52.5	49.06
Ousted	1.9	3.0	4.5	50	50.51
Interim appointment	0.3	0.5	0.8	53	51.05
Retirement	2.5	4.8	7.5	56	54.75
Retired to part-time	2.5	3.6	6.0	56	54.14
Change of control	1.4	2.3	4.4	50	49.25
Headhunted	1.7	2.9	5.1	49	47.96
Unclassified	1.9	3.6	6.3	54	52.13

Note: Survival times allow for left truncation and right censoring.

This table illustrates that existing research on executive tenure is likely to suffer from two inter-related difficulties: first, CEOs resign for a variety of reasons some of which (e.g. being headhunted) may be associated with success, some (e.g. dismissal) with failure and others (e.g. retirement) may have ambiguous performance associations. This clearly requires any analysis to allow for different determinants for the alternative exit states. Datasets which do not distinguish between these competing events have distinct disadvantages to those, such as ours, that can. We now consider how best to model the duration of CEO tenure.

3.4 Duration analysis

Duration analysis¹⁰ has developed as a method to consider the probabilities of exit from a state conditional upon survival up to a point in time. Duration analysis is commonly used to examine data in the biological and medical sciences, engineering and technology adoption literatures. It has also been applied in the political sciences and in studies modelling unemployment durations.

Duration analysis dominates linear regression for the purpose of analysing time to an event because linear regression models assume normality in the distribution of residuals (Cameron and Trivedi, 2005). Distributions of time to an event violate this assumption in ways to which linear regression is not robust. Duration analysis substitutes the assumption of normally distributed residuals with a more realistic and appropriate distribution for the error term (Cleves, Gould, and Gutierrez, 2002). In addition, duration analysis can handle time varying and time invariant regressors, censored and truncated observations, multiple exits from the same individual, competing risks, altogether in a coherent framework (Kiefer, 1988). For these reasons we will proceed within the duration analysis framework rather than follow the logit model approach that has been used previously in the literature⁷.

As we are interested in knowing how the risk of exit changes over time, one of the most useful concepts of duration analysis for our purposes is the hazard rate. The hazard rate, $\lambda(t)$, represents the instantaneous rate of exit at a particular point in time. Instantaneous in the sense that it represents the probability that a CEO who has occupied some state until time t will leave that state in the infinitesimally short time interval δt after t . Where T is the time to event:

$$\lambda(t) = \lim_{\delta t \rightarrow 0} \frac{Pr[t \leq T < t + \delta t | T \geq t]}{\delta t} \quad (3.4.1)$$

The hazard function reveals how the risk of CEO of exit varies during the course of their tenure. If $\frac{\delta\lambda(t)}{\delta t} > 0$ then the CEO is increasingly likely to experience an exit event. The hazard function does not need to be monotonic over the whole period. Indeed, we will be interested to know when it is positive and when it is negative.

The hazard function can be combined with a parametric model in order to test the significance of covariates using maximum likelihood estimation (MLE). Given a parametric

¹⁰Also referred to survival analysis in the biomedical and other literatures.

hazard function $\lambda(t_i; \theta)$, where θ represents a set of parameters, the likelihood contribution for the i th duration t_i is:

$$f(t_i; \theta) = \lambda(t_i; \theta) \cdot S(t_i; \theta) \quad (3.4.2)$$

Leading to the likelihood function:

$$L(\theta) = \prod_{i=1}^N \lambda(t_i; \theta) \cdot S(t_i; \theta) \quad (3.4.3)$$

And log-likelihood:

$$l(\theta) = \prod_{i=1} \ln \lambda(t_i; \theta) + \prod_{i=1} \ln S(t_i; \theta) \quad (3.4.4)$$

So maximum likelihood estimates for $\tilde{\theta}$ follow by optimizing $l(\theta)$ for a given parametric hazard function. That is, one needs to assume an explicit form for the underlying hazard function (the hazard function for which all covariates are equal to zero). The choice of hazard function should be driven by economic theory with respect to the underlying data generating process. Failure to select an appropriate hazard function will result in inconsistent likelihood estimates of the covariates (Cameron and Trivedi, 2005). This is potentially a problem, for we approach our data without much prior knowledge of the shape of the baseline hazard.

In modelling the duration of CEO tenure, we will adopt the Cox (1972) proportional hazard model which allows estimation of coefficients of the covariates without restricting the shape of the baseline hazard. A hazard based analysis is useful as our data contains both left truncation (as some CEOs began their tenure prior to the sample start date) and right censoring (as some CEOs have not completed their tenure by the end of the sample) both of which can be readily handled in this framework¹¹.

3.4.1 Non-parametric analysis

Prior to estimation, we briefly present a graphical analysis of the hazard rate by exit type. To do so, we combine the possible exit types into three groups: Forced exits (dismissals and ousted), retirements (including remaining as Chairman) and other exits (headhunted,

¹¹See section 3.4.2

change of control and unclassified).¹²

Figure 3.3: Cause Specific Hazards

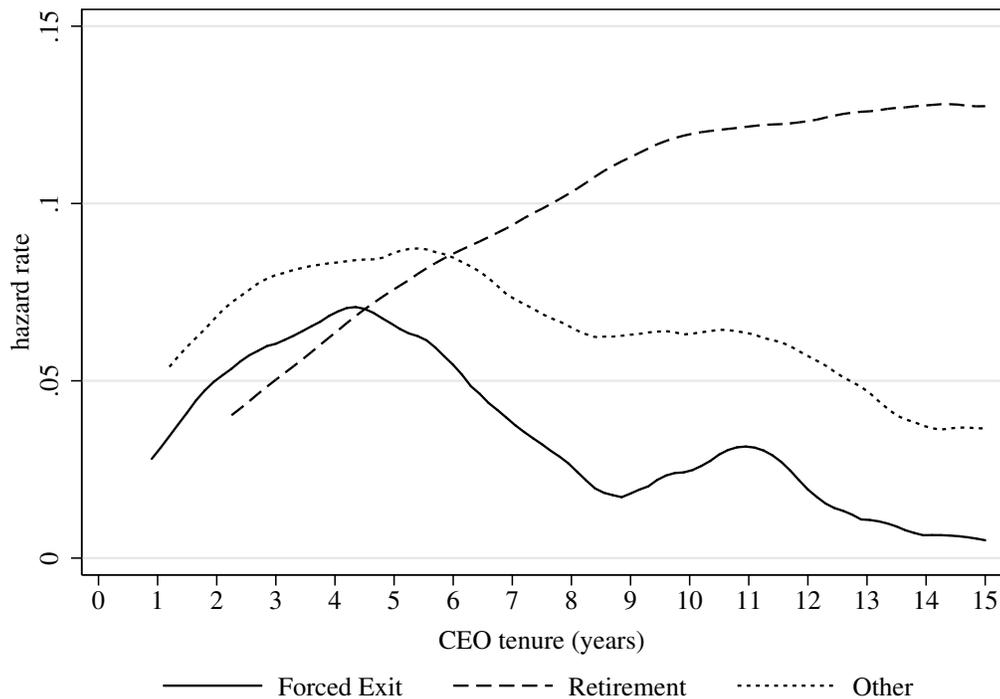


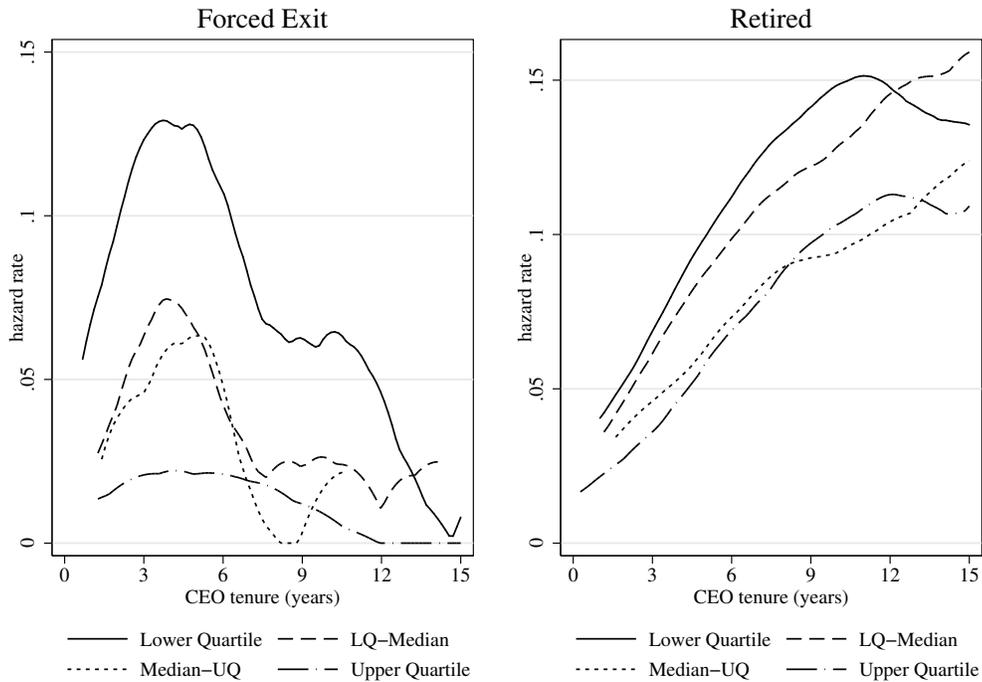
Figure 3.3 demonstrates the different likelihood of exit to the competing exit states over the tenure of a CEO. At the start of a CEO's employment, the least likely reason for exit is retirement, though this probability steadily increases as time passes. The risk of being forced out rises steadily in the early years, peaks in the fifth year, and declines thereafter—eventually becoming the least likely exit state. Hence, once the CEO has completed 6 years, the most likely form of departure is retirement.

Since one might expect different influences to impact on the hazard rates for forced exit and retirement, Figure 3.4 examines the impact of firm performance. We would expect poor firm performance to have a stronger influence on the hazard of forced departure than the hazard of retirement. For simplicity, we identify four performance quartiles determined by the annual total shareholder return (TSR) ranking within the FTSE 350.

Figure 3.4 shows that TSR has an impact on the hazard of forced exit with the divergence between the bottom and top quartile performers increasing until year four and remaining higher until year 12. With respect to retirements, the lower quartile performers also have a marginally higher risk of exit up to year 10 or 11, which could reflect CEOs with

¹²Interim appointments are not regarded as an exit type.

Figure 3.4: Breakdown by Firm Performance



disappointing performance retiring early.

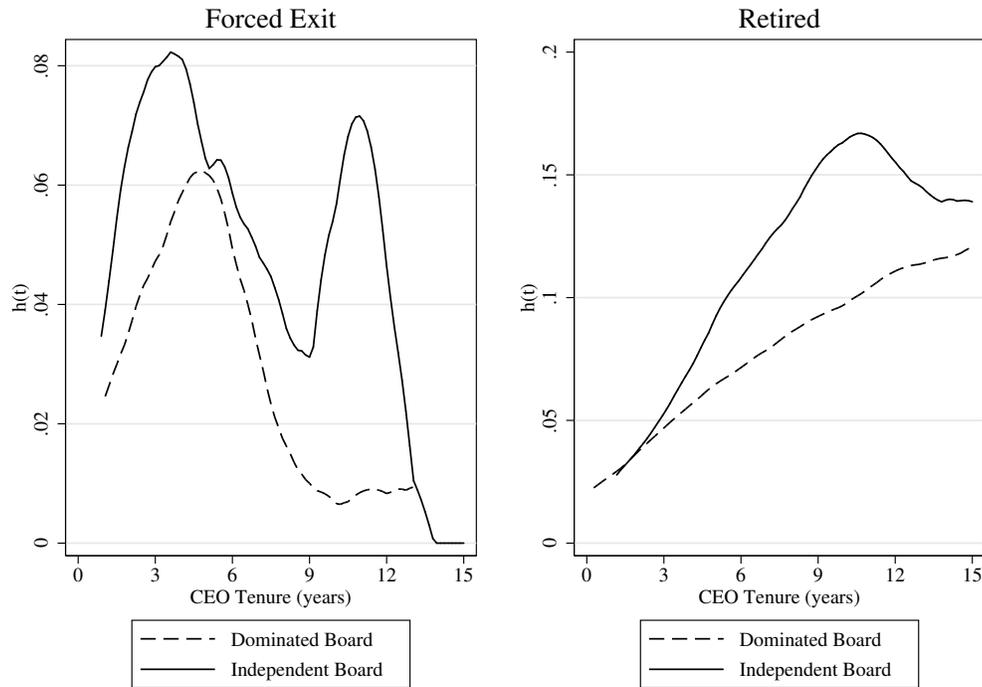
To investigate the possibility that CEOs may be less likely to be ousted from ‘captured’ boards, Figure 3.5 compares the hazard rates of those CEOs who have an insider dominated board with those that have independent boards. As can be seen, the hazard for forced exits is consistently lower if a board is dominated by insiders. This is suggestive of an entrenchment effect. Although the effect is less obvious, the probability of early retirement is also less in dominated boards, also suggesting entrenchment. Moreover, since the difference in the hazard between the dominated boards and the independent boards is greatest between years 9 and 12, this is consistent with the notion that it may take a number of years for a CEO to capture their board.

3.4.2 Semi-parametric analysis

All Exit States

Whilst the graphical analysis is indicative, many additional factors could be impacting on the probability of CEO exit. We therefore proceed with an econometric analysis. In standard parametric survival analysis one needs to assume an explicit form for the underlying

Figure 3.5: Breakdown by Board Type



hazard rate, which imposes restrictions on the range of allowable behaviour. By contrast, the Cox (1972) proportional hazard model is a semi-parametric method¹³ which allows the estimation of the impact of a covariate without restricting the shape of the baseline hazard. This is convenient for our purposes since we have few priors concerning the form of the underlying baseline hazard. Under the Cox model, the hazard rate that the j 'th CEO faces is multiplicatively proportional to the baseline hazard, $\lambda_0(t)$, that all CEOs face, modified by covariates x_j (Cleves, Gould, and Gutierrez, 2002).

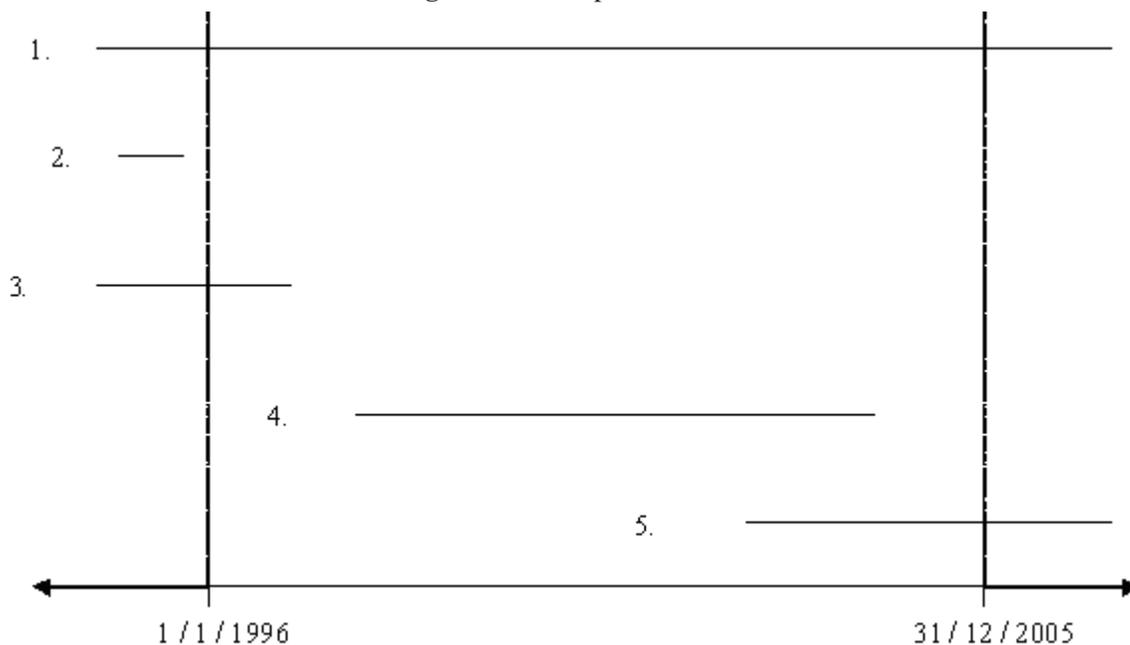
$$\lambda(t|x_j) = \lambda_0(t) \exp(x_j\beta_x) \quad (3.4.5)$$

The Cox model performs separate binary outcome analyses at each of the ordered failure times returning the probability of the event for those who experienced that event at each time. Values of β_x are then determined by maximizing the likelihood of the function which combines all the separate binary outcome analyses. As no assumption is made regarding the distribution of failure times in the individual analyses, no assumption is required when

¹³Semi-parametric in the sense that time is not parameterised, but the impact of the covariates is parameterised.

the Cox model combines the analyses¹⁴.

Figure 3.6: Sample Durations



Like most survival data, Manifest's data is 'right censored' as some CEOs (subjects one and five in figure 3.6) have not completed their tenure by the end of the sample. Right censoring requires us to define censoring indicators:

- $\delta_i = 1$ if the observed duration is completed.
- $\delta_i = 0$ if the observed duration is right-censored.

In order to maintain consistent estimation in the presence of censoring, the censoring mechanism must be non-informative. The completion of duration T_i and censoring time C_i are required to be independent, otherwise the non-censored observations will not be representative of the whole sample. In other words, at any given point in time, censoring must not occur because a CEO has an unusually high or low chance of exiting the sample, given the set of parameters. The observations in our data are right censored when the CEO is still in office at the end of the sample period. Thus our censoring mechanism is entirely indiscriminating, affecting all CEOs regardless of their tenure, equally. Therefore, our estimated coefficients should be free from any potential bias that may arise when the sample is right censored.

¹⁴The Cox model only concerns itself with the ordering of failure times, not the distribution of failure times. The baseline hazard λ_0 is, therefore, left unestimated.

Subjects one, two and three in figure 3.6 are appointed prior to the sample start date. The period between appointment date and sample start date is referred to as the (left) truncation period. The subject can not be considered as being ‘at risk’ of an exit event during this period as they are only observed because they survived the truncation period. CEOs that exited prior to the sample start are unobserved (subject two in figure 3.6). To adjust for left truncation in the Cox model, the subject is omitted from all individual binary outcome analyses during the truncated period.

Results

Table 3.6 shows the results from running a basic Cox proportional hazards model with all exit states constituting a single failure event.¹⁵ The t-statistics indicate whether the co-variate has a statistically significant impact, as normal. However, for ease of interpretation, hazard ratios are reported, and thus a coefficient indicates the probability of exit compared to the baseline. A number greater than one indicates the hazard is increased, a number less than one indicates that it is decreased.

The null hypothesis of this chapter is that poorly performing CEOs are dismissed. In our regressions, the total shareholder return variables identify annual performance quartiles compared to the lower quartile performers in the FTSE 350 Index. TSR ranking against FTSE 350 companies is a commonly used performance measure in equity incentive schemes.

The rationale for choosing annual TSR rather than a cumulative measure of TSR is that TSR incorporates past performance and market expectations of future performance and should therefore be closely aligned with current shareholder satisfaction of managerial performance. Cumulative TSR is incorporated later on in this chapter in an attempt to distinguish between more subtle hypotheses (see section 3.4.2) but the results indicate that current TSR is the more important determinant of CEO exit. The only accounting measure for which sufficient data was acquired was underlying earnings per share (EPS), as recorded by Manifest. However, EPS growth was not found to be significant in the determination of the likelihood of exit and therefore not included in the analysis.

Even with all exit states bundled together, the impact of a low performance ranking is clear. The probability of exit for low to median performers is 76% that of the worst performers, whilst those in the upper quartile have a hazard that is only 46% of the lowest

¹⁵The model is estimated in STATA using the `stcox` command.

quartile.

The theoretical caveat to our null hypothesis is that the threat of dismissal is mitigated if the CEO is able to entrench themselves and capture the board. Table 3.6 shows that the insider variables are also important. Increasing the proportion of independent directors on the board by 20 percentage points, whilst holding the total number of directors the same, would result in an increase in the hazard rate of approximately 14%. In addition, CEOs with larger boards face lower hazard rates, with the results indicating that losing 4 directors from the board would increase the hazard rate by 33%. Age also has a positive impact on the probability of exit.¹⁶ A 65 year old CEO has double the hazard rate of a 55 year old.

Boards which comprise a greater proportion of directors appointed during the tenure of the current CEO result in lower hazard rates. In the UK, directors are appointed by the Nomination Committee, a subcommittee of the board, typically led by the chairman or a non-executive director. However, the CEO or other executive directors may also sit on this committee. The percentage of the Board appointed by the CEO variable is constructed by recording the proportion of the board appointed during the tenure of the CEO. This variable is a proxy for the friendliness of the board towards the CEO on the presumption that the CEO is unlikely to preside over the appointment of hostile board members. The average length of service of the non-executive directors decreases the hazard, suggesting that a non-executive director does not become more rigorous at monitoring with experience, but rather the CEO carries more influence the longer the director serves in office.

The ownership structure of the firm may also be important in determining CEO turnover (Fama and Jensen, 1983; Demsetz and Lehn, 1985). CEO's who hold large portions of the company's equity relative to the company's major shareholders may be better to resist pressure to resign from such shareholders. To control for this, we include the difference between the equity holdings of the largest shareholder (blockholder) and those of the CEO. The results indicate that the higher the relative holdings of the blockholder, the more likely the CEO is to exit their position. A ten percentage point increase in the difference between the holdings of the blockholder and the CEO results in a 13 percent increase in the likelihood of exit.

It is possible that the governance of the company modifies the effect that performance has on the likelihood of CEO exit. To investigate this, we interact board size, % insiders, % board appointed by the CEO and average non-executive tenure with the total shareholder

¹⁶Age is entered as a squared term beginning at age 50.

Table 3.6: Hazard to Any Exit

	<i>a</i>		<i>b</i>	
<i>Total shareholder return</i>				
Lower quartile-Median	0.764***	(-2.83)	0.530	(-1.13)
Median-Upper quartile	0.612***	(-4.59)	0.432	(-1.37)
Upper quartile	0.458***	(-7.20)	0.367*	(-1.85)
Ln Sales	1.092***	(2.99)	1.094***	(2.96)
Age	1.005***	(4.06)	1.005***	(4.08)
Board Size	0.918***	(-4.47)	0.905***	(-3.04)
% Insiders on Board	0.322***	(-3.44)	0.323***	(-3.18)
% Board Appointed by CEO	0.257***	(-6.64)	0.248***	(-5.08)
Ave NED Tenure	0.909***	(-4.87)	0.894***	(-3.44)
Block equity-CEO equity	1.013***	(4.20)	1.013***	(4.08)
<i>Total shareholder return interactions</i>				
Board Size				
Lower quartile-Median			1.028	(0.66)
Median-Upper quartile			1.010	(0.23)
Upper quartile			1.024	(0.50)
% Insiders on Board				
Lower quartile-Median			1.073	(0.12)
Median-Upper quartile			1.076	(0.11)
Upper quartile			0.968	(-0.05)
% Board appointed by CEO				
Lower quartile-Median			0.936	(-0.18)
Median-Upper quartile			1.145	(0.32)
Upper quartile			1.081	(0.17)
Ave non-executive tenure				
Lower quartile-Median			1.029	(0.62)
Median-Upper quartile			1.031	(0.59)
Upper quartile			1.000	(0.00)
N	3364		3364	
No. CEOs	871		871	
No. Failures	607		607	
Wald (χ^2)	252.096(19)		256.561(31)	

1. Robust t-statistics, clustered on CEO, are reported in the parentheses.

2. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.

3. Year dummies included.

return variables. The results are shown in column *b* of Table 3.6. None of these interactions are statistically significant and so the structural measures of entrenchment described above appear not to diminish the impact of performance on the likelihood of exit.

Competing risk estimates

By grouping all exit types together, the model presented in Tables 3.6 implicitly assumes the same underlying hazard rate across all failure types. However, as we have seen, there are good reasons to suspect that the baseline hazard is likely to vary depending on the event from which the CEO is at risk. For example, under an entrenchment hypothesis, one would expect the hazard of dismissal to reduce over the course of the CEO's tenure but the hazard of retirement will increase. One strategy, as used by Geddes and Vinod (1997), is to exclude observations that experience the competing event and just analyse the event of primary interest, in this case dismissal. However, a more efficient and informative approach is to directly compare alternative exit states in a common framework. We therefore adopt a competing risks methodology (Prentice et al. (1978), Kalbfleisch and Prentice (1980)). The risks are competing in the sense that the exit states are mutually exclusive (i.e. upon retirement the CEO can no longer be dismissed) and thus each event censors each other event. We distinguish between three competing exit types: forced departures; retirements; and other exits. We follow the method of Lunn and McNeil (1995) and stratify by risk type, since we do not wish to restrict the baseline hazards of the different risk types to share a constant ratio. This is achieved by duplicating the data so that there are three entries per observation, one for each risk type. The duplicated entries show the other risk types and are always censored. If the original observation is right censored, then three entries exist, one for each failure type, all of which are censored. A Cox regression, stratified by failure type, is then performed with the covariates interacted with each risk type. By this method we can identify how the covariates impact upon each competing risk.

Examining the competing risk estimates, a clear distinction can be observed in Table 3.7 with respect to the influence of covariates upon CEO turnover. Firm performance is critical in the hazard of a forced exit, with CEOs of firms in the top quartile having a hazard rate only 20% of that of the bottom quartile. In contrast, performance has a positive impact on exits to other states, presumably as high performers move on to other jobs.

Table 3.7: Hazard to Competing Risks

	<i>Forced Departure</i>	<i>Retirement</i>	<i>Other</i>	<i>Forced Departure</i>	<i>Retirement</i>	<i>Other</i>
<i>Total shareholder return</i>						
Lower quartile-Median	0.402*** (-3.70)	2.220** (2.69)	2.072** (2.34)	0.246 (-0.90)	2.685 (0.56)	4.762 (0.83)
Median-Upper quartile	0.360*** (-4.17)	1.829* (1.93)	2.034** (2.21)	0.074* (-1.70)	8.066 (1.10)	10.477 (1.20)
Upper quartile	0.196*** (-5.15)	3.317*** (3.28)	2.325** (2.18)	0.103 (-1.19)	10.907 (1.13)	2.599 (0.43)
Ln Sales	1.194** (2.53)	0.933 (-0.80)	0.883 (-1.42)	1.209** (2.60)	0.922 (-0.91)	0.869 (-1.55)
Age	0.999 (-0.41)	1.008*** (2.84)	0.998 (-0.58)	0.999 (-0.41)	1.008*** (2.78)	0.998 (-0.52)
Board Size	0.936 (-1.42)	0.966 (-0.60)	1.003 (0.05)	0.910 (-1.42)	0.999 (-0.01)	0.987 (-0.13)
% Insiders on Board	0.205** (-2.08)	2.252 (0.88)	1.707 (0.54)	0.182** (-2.16)	2.137 (0.76)	2.423 (0.85)
% Board Appointed by CEO	0.196*** (-4.26)	2.260* (1.72)	0.957 (-0.10)	0.147*** (-3.77)	2.946 (1.55)	1.964 (0.97)
Ave NED Tenure	0.806*** (-3.57)	1.160** (2.24)	1.150** (2.00)	0.814** (-2.38)	1.155 (1.35)	1.120 (1.09)
Block equity-CEO equity	1.017** (2.38)	0.994 (-0.72)	0.997 (-0.36)	1.017** (2.48)	0.993 (-0.82)	0.996 (-0.41)
<i>Total shareholder return interactions</i>						
<i>Board Size</i>						
Lower quartile-Median				0.997 (-0.03)	1.045 (0.37)	1.034 (0.26)
Median-Upper quartile				1.121 (1.29)	0.829 (-1.49)	0.949 (-0.42)
Upper quartile				1.023 (0.16)	0.957 (-0.28)	1.093 (0.53)
<i>% Insiders on Board</i>						
Lower quartile-Median				1.643 (0.30)	1.026 (0.01)	0.284 (-0.59)
Median-Upper quartile				1.130 (0.08)	1.218 (0.10)	0.662 (-0.21)
Upper quartile				2.096 (0.36)	0.462 (-0.34)	0.391 (-0.37)
<i>% Board appointed by CEO</i>						
Lower quartile-Median				3.278 (1.29)	0.189 (-1.46)	0.141* (-1.69)
Median-Upper quartile				0.774 (-0.29)	2.572 (0.81)	0.788 (-0.20)
Upper quartile				2.982 (0.78)	0.316 (-0.72)	0.138 (-1.19)
<i>Ave non-executive tenure</i>						
Lower quartile-Median				0.878 (-0.77)	1.128 (0.64)	1.221 (1.05)
Median-Upper quartile				1.152 (1.09)	0.877 (-0.85)	0.846 (-0.97)
Upper quartile				0.835 (-1.20)	1.115 (0.63)	1.262 (1.22)
No. CEOs		871			871	
No. Failures		607			607	
Wald (χ^2)		375.810(59)			410.609(95)	
Equality of coefficients across risks (χ^2)		78.97(20)***			104.96(44)***	

1. Robust (clustered around CEO) t-statistics reported in the parentheses.

2. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.

3. Year dummies included.

Table 3.7 shows that CEOs with a larger proportion of the board appointed during their tenure are at significantly lower risk of dismissal. *Ceteris paribus*, increasing the proportion of the board who have been appointed during the tenure of the CEO by 50 percentage points reduces the risk of dismissal by 40%. Boards comprising longer serving non-executive directors also reduce the risk of dismissal for the CEO.

As with the single risk estimates, we also interact the performance with the governance variables, but again these effects are largely insignificant. Therefore, we are unable to conclude that the impact of poor performance upon dismissals is reduced in weakly governed firms.

To summarise, we have provided evidence that poorly performing CEOs are at a greater risk of dismissal. We have also shown that governance matters: CEOs with larger boards, with more directors appointed during their tenure, with established non-executive directors and with a greater proportion of insiders have lower hazard rates of dismissal. Yet, we fail to find evidence of an interaction between performance and governance.

Robustness Checks

The percentage of insiders is the proportion of the board consisting of executive directors and affiliated non-executive directors. To determine independence, the companies' own assessments of the directors' independence is used. Companies are required to state whether or not each serving director is independent according to criteria laid out in the Combined Code (2003).

Some concern has been raised in the literature regarding the reliability of company own assessments (Lin, Pope, and Young, 2003; Young, 2000). To examine whether our results are sensitive to this issue, we re-estimated the model using Manifest's assessment of independence, which is based on criteria differing only marginally from those suggested by Lin, Pope, and Young (2003)¹⁷. The results of this estimation are given in Table 3.8. With the Manifest measure, the *% Insiders on board* loses statistical significance. This is because of the higher correlation of the Manifest measure with average non-executive tenure (since in the Manifest measure a non-executive director will fail independence if they have been on the board for more than 9 years, whereas the company measure would

¹⁷Manifest's assessment does not fail directors on the solely on the grounds that the director represents a venture capitalists (although many such directors would fail under Manifest's assessment if they hold a major equity stake) and Manifest would not fail solely on the grounds that the director receives more than £50,000 in fees (but again many such directors would fail on other grounds.)

not typically fail for tenure alone). The results for the other variables are not qualitatively different from the results given in the paper. Since the company definition is readily available and widely used, for comparative purposes our specification uses the companies' own assessments.

It may also be sensible to briefly explore how sensitive our results were to the classification of the nine original exit states into the three used in the analysis. To investigate this issue we have experimented whether 'unclassified' departures might be better classified as forced exits or retirements. The results are given in Table 3.9 below, and are not qualitatively different from those in section 3.4.2, perhaps because of the relatively small number of unclassified exits. Finally in Table 3.10 we experiment with 'unclassified' as a 4th distinct risk type. Although the results for other risks do not change markedly, the relatively few number of 'unclassified' exits makes the risk to this exit state badly defined statistically. In the absence of additional information relating the unclassified exits, our preferred specification is based on our initial aggregation.

Performance Revelation vs Entrenchment

In the non-parametric analysis in section 3.4.1 we showed that the hazard of forced exit varied over a CEO's tenure, increasing until year 4 and declining thereafter. This is a pattern that we might expect to see under entrenchment. The hazard rate will decrease if the CEO captures the board, which might take the CEO a number of years. Now, even if shareholders desire to remove the CEO, they will have lower rates of success due to the increasingly entrenched position of the CEO.

However, Figure 3.3 also describes what we might expect to see with performance revelation. As information regarding the CEO's ability increases as a result of observing additional years of firm performance under their tenure, shareholders may become more willing to stick with the CEO, even if current performance is relatively poor. However, if the declining hazard is due to information revelation, we would additionally expect the impact of cumulative good past performance to make the CEO more secure. To this end, we additionally add the cumulative change in TSR ranking to our regressions.¹⁸ We then allow the impact of the performance and insider variables to vary, by splitting our sample at 5 years of tenure.¹⁹ Table 3.11 presents the results of this exercise.

¹⁸The cumulative change in TSR ranking captures performance in all years since appointment, assuming each year's performance is equally important.

¹⁹We have experimented with break points at other tenures, but that at 5 years gives the model with the

Table 3.8: Hazard to Competing Risks: Definition of % *Insiders on Board*

	<i>Company definition</i>						<i>Manifest definition</i>					
	<i>a</i>		<i>b</i>		<i>c</i>		<i>a</i>		<i>b</i>		<i>c</i>	
<i>Total shareholder return</i>												
Lower quartile-Median	0.402***	(-3.70)	2.219**	(2.69)	2.071**	(2.34)	0.399***	(-3.74)	2.203**	(2.67)	2.082**	(2.36)
Median-Upper Quartile	0.361***	(-4.17)	1.829*	(1.93)	2.034**	(2.21)	0.357***	(-4.21)	1.802*	(1.89)	2.044**	(2.23)
Upper Quartile	0.195***	(-5.16)	3.323***	(3.28)	2.327**	(2.18)	0.191***	(-5.24)	3.348***	(3.31)	2.360**	(2.22)
Ln Sales	1.194**	(2.53)	0.933	(-0.81)	0.883	(-1.42)	1.200**	(2.43)	0.947	(-0.60)	0.881	(-1.34)
Age	0.999	(-0.41)	1.008***	(2.84)	0.998	(-0.58)	0.999	(-0.47)	1.009***	(2.93)	0.998	(-0.56)
Board Size	0.936	(-1.43)	0.966	(-0.60)	1.003	(0.05)	0.933	(-1.42)	0.962	(-0.65)	1.005	(0.08)
% Insiders on Board	0.207**	(-2.07)	2.237	(0.88)	1.704	(0.54)	0.395	(-1.24)	2.955	(1.19)	1.494	(0.41)
% Board appointed by CEO	0.196***	(-4.26)	2.260*	(1.72)	0.956	(-0.10)	0.199***	(-4.19)	2.308*	(1.74)	0.944	(-0.12)
Ave non-executive tenure	0.807***	(-3.57)	1.160**	(2.24)	1.150**	(2.00)	0.821***	(-3.31)	1.138**	(1.96)	1.140*	(1.88)
Block equity-CEO equity	1.017**	(2.38)	0.994	(-0.70)	0.997	(-0.37)	1.016**	(2.31)	0.995	(-0.66)	0.997	(-0.32)
N	10092						10092					
No. CEOs	871						871					
No. Failures	607						607					
Wald χ^2	375.81						360.26					

1. T-statistics reported in the parentheses.

2. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.

3. Year dummies included.

Table 3.9: Experiments with ‘Unclassified’ Exits

	<i>Unclassified as forced</i>			<i>Unclassified as Retired</i>			<i>Unclassified Dropped</i>		
	<i>Forced departure</i>	<i>Retirement</i>	<i>Other</i>	<i>Forced departure</i>	<i>Retirement</i>	<i>Other</i>	<i>Forced departure</i>	<i>Retirement</i>	<i>Other</i>
<i>Total shareholder return</i>									
Lower quartile-Median	0.505*** (-3.46)	1.786** (2.27)	1.675* (1.75)	0.406*** (-3.66)	2.213*** (2.75)	2.087** (2.23)	0.398*** (-3.72)	2.212** (2.67)	2.100** (2.24)
Median-Upper Quartile	0.390*** (-4.58)	1.713* (1.92)	2.205** (2.57)	0.364*** (-4.12)	1.753* (1.84)	2.377** (2.56)	0.356*** (-4.22)	1.862** (1.99)	2.393** (2.58)
Upper Quartile	0.170*** (-6.10)	3.840*** (3.93)	3.417*** (3.26)	0.198*** (-5.11)	2.796*** (2.84)	2.996*** (2.76)	0.194*** (-5.19)	3.237*** (3.21)	2.989*** (2.74)
Ln Sales	1.161*** (3.04)	0.959 (-0.61)	0.897** (-2.01)	1.214*** (3.10)	0.904 (-1.29)	0.874* (-1.87)	1.215*** (3.02)	0.918 (-1.04)	0.871* (-1.86)
Age	1.000 (0.15)	1.007*** (3.72)	0.993** (-1.97)	0.999 (-0.47)	1.008*** (2.66)	0.995 (-1.31)	0.999 (-0.50)	1.008*** (2.88)	0.995 (-1.29)
Board Size	0.956 (-1.26)	0.946 (-1.13)	0.961 (-0.72)	0.932 (-1.53)	0.988 (-0.23)	0.980 (-0.32)	0.938 (-1.40)	0.969 (-0.55)	0.979 (-0.33)
% Insiders on Board	0.152 (-2.92)	3.142 (1.39)	4.127* (1.58)	0.224** (-2.02)	1.505 (0.46)	2.874** (1.08)	0.213 (-2.08)	2.136 (0.84)	2.856 (1.07)
% Board Appointed by CEO	0.293*** (-3.55)	1.500 (0.92)	0.457* (-1.74)	0.196*** (-4.29)	2.368* (1.89)	0.702 (-0.74)	0.210*** (-4.11)	2.147* (1.62)	0.680 (-0.81)
Ave NED Tenure	0.859*** (-3.18)	1.090 (1.56)	1.072 (1.14)	0.809*** (-3.53)	1.155** (2.21)	1.140* (1.85)	0.806*** (-3.56)	1.155** (2.15)	1.143* (1.85)
Block equity-CEO equity	1.019*** (3.43)	0.992 (-1.12)	0.992 (-0.89)	1.016** (2.34)	0.995 (-0.66)	0.996 (-0.41)	1.018** (2.49)	0.994 (-0.66)	0.995 (-0.47)

1. T-statistics reported in the parentheses.

2. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.

3. Year dummies included.

Table 3.10: Experiments with ‘Unclassified’ Exits Continued*‘Unclassified’ as 4th risk type*

	<i>Forced departure</i>	<i>Retirement</i>	<i>Other</i>	<i>Unclassified</i>
<i>Total shareholder return</i>				
Lower quartile-Median	0.403*** (-3.68)	2.220** (2.69)	2.085** (2.23)	1.936 (1.53)
Median-Upper Quartile	0.363*** (-4.14)	1.838* (1.95)	2.373** (2.56)	1.316 (0.57)
Upper Quartile	0.198*** (-5.12)	3.321*** (3.28)	2.999*** (2.76)	0.523 (-0.79)
Ln Sales	1.195*** (3.12)	0.934 (-0.91)	0.884* (-1.87)	0.891 (-1.42)
Age	0.999 (-0.41)	1.008*** (2.84)	0.995 (-1.34)	1.003 (0.81)
Board Size	0.934 (-1.52)	0.966 (-0.61)	0.977 (-0.37)	1.084 (1.18)
% Insiders on Board	0.207** (-2.16)	2.283 (0.93)	3.065 (1.16)	0.395 (-0.66)
% Board Appointed by CEO	0.188*** (-4.46)	2.282* (1.77)	0.706 (-0.74)	5.465** (2.23)
Ave NED Tenure	0.806*** (-3.62)	1.159** (2.26)	1.142* (1.88)	1.198* (1.83)
Block equity-CEO equity	1.016** (2.27)	0.995 (-0.67)	0.996 (-0.41)	0.998 (-0.12)

1. T-statistics reported in the parentheses.

2. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.

3. Year dummies included.

Current performance, measured by total shareholder return does indeed appear to become less important after 5 years, as predicted by both the entrenchment and performance revelation hypotheses. Our reported estimates also show that the impact of insiders on the hazard of forced departures increases after the CEO has been in office for 5 or more years. This is consistent with the entrenchment hypothesis. No evidence is found for information revelation however- the coefficient on the change in TSR ranking moves in the opposite direction to that expected. This suggests that shareholders continue to regard recent, rather than good past, performance as the key indicator of CEO competence.

Governance Environment

As indicated in the introduction, the period of investigation was one of an ongoing programme of corporate governance reforms (Cadbury, 1992; Greenbury, 1995; Combined Code, 1999, 2003; Higgs, 2003) which might be expected to have impacted upon executive tenure: First, as noted above, these changes had the consequence of progressively reducing the contract length for UK senior executives from three years or more, in the early 1990s to 12 months or less by 2003 (Combined Code, 2003). This would have had a corresponding impact on the compensation requirements in the event of severance and hence be expected to reduce the costs of CEO dismissal. Second, the reforms from Cadbury onwards have consistently sought to strengthen the role and independence of non-executive directors (Solomon, 2007). If successful, this would be expected to increase the accountability of CEOs and increase the risk of dismissal for poorer performers among their number.

Finally, if less obviously, there is a widespread perception that shareholder activism has increased over the period (Davies, Platts, and Lewis, 2008). In part, this has been encouraged by corporate governance reforms which have increased direct shareholder voice - on such issues as calling shareholder meetings, replacing directors, approving remuneration committee reports etc. (Davies, Platts, and Lewis, 2008) - and thereby encouraged participation at shareholder AGMs. This is reinforced by the increased role of shareholder pressure groups and governance consultancies, such as Manifest, in providing alternative sources of information to shareholders. However, above all it reflects the view that the growth of institutional shareholdings challenges the received wisdom of the diffuse control of large public companies (PIRC, 2003). Indeed work such as Leech (2001, 2003) suggests that effective voting control in many large UK companies could rest in the hands

highest log-likelihood.

Table 3.11: Performance Revelation Versus Entrenchment

	<i>Tenure</i> <5			<i>Tenure</i> ≥5		
	<i>Forced Departure</i>	<i>Retirement</i>	<i>Other</i>	<i>Forced Departure</i>	<i>Retirement</i>	<i>Other</i>
<i>Total shareholder return</i>						
Lower quartile-Median	0.406*** (-3.06)	2.393** (1.98)	1.464 (0.96)	0.320** (-2.12)	2.868* (1.83)	2.867* (1.72)
Median-Upper Quartile	0.359*** (-3.17)	1.432 (0.69)	1.565 (1.02)	0.231** (-2.40)	3.511* (1.90)	2.536 (1.28)
Upper Quartile	0.148*** (-3.59)	3.269* (1.64)	2.037 (1.09)	0.186** (-2.40)	3.979* (1.82)	1.731 (0.64)
Change TSR Ranking	0.943 (-0.15)	1.340 (0.51)	1.973 (1.36)	3.055* (1.60)	0.285* (-1.68)	0.607 (-0.60)
Ln Sales	1.194** (2.43)	0.905 (-1.08)	0.894 (-1.24)	1.217** (2.05)	0.928 (-0.72)	0.865 (-1.41)
Age	1.001 (0.35)	1.014*** (3.07)	0.990 (-1.40)	0.998 (-0.47)	1.008* (1.67)	1.001 (0.11)
Board Size	0.913 (-1.57)	0.963 (-0.44)	0.970 (-0.39)	0.974 (-0.43)	0.932 (-0.99)	1.023 (0.31)
% Insiders on Board	0.345 (-1.18)	3.723 (0.93)	8.220 (1.68)	0.045** (-2.43)	6.341 (1.34)	0.644 (-0.30)
% Board Appointed by CEO	0.298** (-2.07)	0.271 (-1.42)	0.227** (-1.99)	0.297** (-2.09)	1.311 (0.38)	3.297 (1.48)
Ave NED Tenure	0.825** (-2.34)	1.086 (0.70)	1.132 (1.28)	0.862** (-2.15)	1.067 (0.88)	1.055 (0.62)
Block equity-CEO equity	1.020** (2.42)	0.987 (-1.00)	0.992 (-0.65)	0.993* (-0.58)	1.021 (1.64)	1.016 (1.05)
Wald χ^2	544.947(95)					
Equality of coefficients: tenure< 5 & tenure> 5 (χ^2)	101.84(30)					

1. T-statistics reported in the parentheses.

2. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.

3. Year dummies included.

of a few fund managers if they co-ordinate their voting. Furthermore, the large absolute size of these holdings reduces their liquidity and thereby provides an incentive for intervention (Leech, 2003). Following the Myners' Reports (2001; 2004) institutional shareholders' organisations have acknowledged the role of fund managers in corporate governance (Davies, Platts, and Lewis, 2008).

Since changes in the governance environment have occurred progressively, but incrementally, over the period, we test for their impact by splitting our data at 2000 and labelling the sub-periods thereby created as 'pre-reform' and 'post-reform', respectively. The results of this exercise are given in Table 3.12. We find supportive evidence of an increase in the importance of firm performance post-reform. In particular, the hazard of forced departure for the bottom quartile performers doubles between the two sub-periods, with a corresponding fall in the other exit states. There is some suggestive decline in the hazard for the top performing companies, although these changes are not significant.

The results for our governance variables suggest a rather limited impact of the reform process. Although the impact of insiders is weaker in the post reform period, the entrenching effect of board members appointed by the CEO appears to have increased. However, again, neither of these differences are statistically significant. In sum, our estimates cast doubt on the success of the reforms in weakening the ability of CEOs to entrench themselves in their position.

3.5 Conclusions

We have presented evidence that the threat of CEO dismissal responds to performance as measured by total shareholder return. We have also shown that the threat of dismissal falls with certain structural measures of entrenchment such as the proportion of insiders on the board or number of directors appointed during the CEO's tenure. However, we were unable to find a strong interaction between governance conditions and the impact of performance in determining the threat of dismissal.

Our investigation has also exposed distinct differences between the hazard rates of competing risk types and in the variation of these hazard rates over time. Whilst the risk of retirement increases steadily throughout the CEO's tenure, the risk of an exit under pressure from the board and/or shareholders only increases to year four, after which time a forced exit becomes decreasingly likely. Broadly speaking, such a result can be inter-

Table 3.12: Impact of Governance Reforms

	<i>Pre-Reform</i>			<i>Post-Reform</i>		
	<i>Forced departure</i>	<i>Retirement</i>	<i>Other</i>	<i>Forced departure</i>	<i>Retirement</i>	<i>Other</i>
<i>Total shareholder return</i>						
Lower quartile-Median	0.260*** (-2.78)	3.103** (1.97)	3.220** (2.09)	0.526** (-2.19)	1.735 (1.57)	1.605 (1.20)
Median-Upper Quartile	0.389** (-2.26)	1.583 (0.86)	1.676 (0.99)	0.367*** (-3.22)	1.772 (1.47)	2.251** (1.94)
Upper Quartile	0.220*** (-3.19)	2.913* (1.89)	1.081 (0.12)	0.181*** (-3.94)	3.423** (2.54)	3.454** (2.45)
Ln Sales	1.274* (1.82)	0.822 (-1.23)	0.954 (-0.29)	1.183* (1.95)	0.959 (-0.39)	0.812* (-1.89)
Age	1.006** (2.01)	1.002 (0.69)	0.993* (-1.80)	0.988** (-2.11)	1.019*** (3.22)	1.007 (1.11)
Board Size	0.976 (-0.35)	0.970 (-0.36)	0.976 (-0.29)	0.899* (-1.76)	0.984 (-0.22)	1.029 (0.37)
% Insiders on Board	0.096* (-1.83)	4.792 (1.02)	0.958 (-0.03)	0.280 (-1.29)	1.533 (0.36)	3.505 (0.94)
% Board Appointed by CEO	0.349** (-2.05)	2.769 (1.23)	0.574 (-0.85)	0.114*** (-4.13)	2.787* (1.65)	1.480 (0.61)
Ave NED Tenure	0.833** (-2.25)	1.139 (1.43)	1.121 (1.21)	0.769*** (-3.14)	1.209** (2.10)	1.165 (1.50)
Block equity-CEO equity	1.019 (1.08)	0.977 (-1.11)	0.990 (-0.47)	1.018** (2.31)	1.020 (0.86)	1.007 (0.29)
Wald χ^2	488.997(89)					
Equality of coefficients: Pre- and Post-reform (χ^2)	56.41(30)					

1. Robust (clustered around CEO) t-statistics reported in the parentheses.
2. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.
3. Year dummies included.

preted in two ways. Either boards are placing increased trust in the competence of CEOs who have survived until year four and therefore are more forgiving in light of subsequent poor performance. Alternatively, and less optimistically, CEOs who survive beyond year four are more capable of entrenching themselves in the position, perhaps by filling the board with compliant directors who are less rigorous in their duty as monitors of the CEO's activity. Thus, the CEO is better able to resist punishment for poor company performance in the later years of their tenure. Our results, favour the latter explanation, as the composition of the board appears to be increasingly important as a predictor variable in the determination of the hazard rate in the later years of a CEO's tenure.

We also find a greater frequency of dismissals in the post 2000 period. This is perhaps reflective of increased churn following the stock market downturn in 2001, but our reported estimates also provide some support for the view that corporate governance reforms have made it harder for CEOs to resist the consequences of poor share performance. The post 2000 period is characterised by a higher ratio of outsider directors on the board and the progressive reduction in average contract length has made CEO service contracts cheaper to terminate. These changes, reflecting a succession of revisions to the Combined Code, are suggestive of a positive role for policy in increasing the incidence of performance related departures in UK business. However, the corporate governance reforms appear to have been ineffective in reducing the ability of CEOs to entrench themselves during their tenure. The threat of removal after year four continues to recede at least as fast as it did before the implementation of most of the reforms.

3.5.1 Future Work

This chapter has achieved some interesting insights into the CEO turnover process, by applying duration analysis within a competing risks framework. As we approached this topic without prior knowledge of the shape of the baseline hazard, a semi-parametric method was employed. However, further work would do well to explore the possibility of adopting a full parametric form. Parametric models have the advantage of using full maximum likelihood in estimation. The estimated coefficients will be more efficient than under a semi-parametric model and likelihood ratio tests can be used to assess the model's goodness of fit.

The distributional form of the error term (i.e. the shape of the baseline hazard) determines the particular type of parametric regression model. The assumed distribution would have

to cope with the apparent initial increase and subsequent decline in the hazard function that is suspected in tenure of CEOs. Parametric models in the standard proportional hazards (PH) framework such as the Exponential or Weibull models would be inappropriate. The Exponential model's hazard function is constant over time, while the Weibull's is monotonic. Rather, the distribution would belong to the accelerated failure-time (AFT) framework which allows the slope of the hazard function to change sign over time. For instance, the log-logistic model where the natural logarithm of time follows a logistic distribution. Interpretation of the effect of covariates in the AFT framework is different to the PH framework. In the PH framework an increase in a covariate increases the baseline hazard as it does in the Cox (1972) model, whereas under the AFT framework an increase in a covariate implies a delay in failure, or an increase in the expected waiting time for failure (Cleves, Gould, and Gutierrez, 2004).

It may also be interesting to explore the extent to which unobserved effects that are specific to certain groups impact the results. Specific individuals, firms or sectors may have certain unobserved attributes that increase or decrease the likelihood of exit. While adjustments for unobserved individual effects were made to the standard errors used for inference on the hazard ratios (by clustering on individuals), it might be worth exploring the potential of modelling these effects directly applying a 'shared frailty' model.

This chapter controlled for the impact of ownership structure on CEO exit probabilities with a measure of the CEO's holdings relative to those of the largest shareholder (blockholder). A complete analysis of control in a public company requires more detailed knowledge of (at least the upper tail of) the distribution of voting shares, as in Leech (2001). In particular, it would be useful to know the identity of the major equity shareholders as certain types of owners might be more vigilant in their monitoring of CEO performance than others. The collection of this data would be valuable for any future related research.

Appendix

3.A Definition of exit events

Table 3.13: Definition of Exit Events

<i>Event</i>	<i>Definition</i>
Retirement	Retirement (including early retirement, illness or death).
Headhunted	CEO gave notice to immediately pursue a position at another company.
Change of Control	The CEO exits the sample due to their Company being acquired, wound up or taken private.
Ousted	The CEO leaves under pressure from the Board or shareholders.
Dismissed	The CEO is officially removed from their position either by shareholders or the Board.
Interim Appointment	The CEO resigns having been appointed only on a temporary basis following a sudden departure.
Internal Position Change	A positional change but the CEO effectively continues as CEO.
Retired to Part Time Position	The CEO retires to become a non-executive director or Chairman of the same company.
Unclassified	The CEO exits the Company and there is no evidence to suggest they had resigned under pressure.

Shareholder Activism and Voting

'I can see you are going to give me an uncomfortable afternoon'.

GlaxoSmithKline Chairman Sir Christopher Hogg to shareholders at the 2003 Annual General Meeting¹.

4.1 Introduction

The concern that the managers of public limited companies may deviate from optimising shareholder returns is well documented. If corporate governance is largely concerned with 'how suppliers of finance to corporations assure themselves of getting a return on their investment' (Shleifer and Vishny, 1997) then a comprehensive examination of the issue should include the myriad possible actions available to shareholders to achieve this end. 'Activism' by shareholders is one possible strategy. Activism is typically modeled as a check managerial discretion thereby curtailing abuses and reducing agency costs (Monks and Minow, 2004). This may include direct interventions by shareholders and/or exercising voting rights thoughtfully and independently from the recommendations of management.

Under the Jensen and Meckling (1976) principal-agent framework, corporate governance devices, which could include activism, are employed up to the point when the marginal benefit of such devices equates to the marginal cost. However, given the discipline of

¹The directors' remuneration report was voted down by shareholders. See 'Glaxo defeated by shareholders', BBC News 19th May 2003.

the market for corporate control² and other corporate governance devices³, it is possible that the costs of direct shareholder intervention outweigh the benefits. Traditionally, shareholders are thought to do best by delegating the initiation and implementation decisions to management, retaining only powers of ratification and a limited monitoring function (Fama and Jensen, 1983). Complete managerial discretion in the decision making process might even be inherently value-adding if it elicits firm-specific investment from managers (Burkart, Gromb, and Panunzi, 1997). Such investment could include the deployment of managerial initiative in seeking out the most profitable investment projects, if one believes the use of managerial initiative increases when shareholders interfere less⁴. Therefore, active intervention by shareholders in the decision making process has been regarded by some scholars as self-defeating (Webb, Beck, and McKinnon, 2003). There is a considerable body of evidence from the US that would argue that this assumption is not unreasonable (Pound, 1992; Black, 1998; Gillan and Starks, 2000; Romano, 2001a). Karpoff (2001)'s literature review of the impact of shareholder activism concludes that while efforts by activists can achieve changes to target companies' governance structures these do not translate into improved earnings or shareholder returns.

The arguments that have been advanced favouring non-active shareholders are founded upon the lack of credible incentives experienced by shareholders to overcome the large costs associated with activism (Grossman and Hart, 1980). As shareholders typically seek to minimise their exposure to the variance of any one particular stock by holding a diverse portfolio of shares, holdings in any one particular stock are likely to be small. Thus an active shareholder will only experience a fraction of returns resulting from improved governance. The costs associated with activism are thought to dominate any private benefit. Moreover, activism has the non-rivalrous and non-excludable properties of a public good. As such, shareholders experience the temptation to free ride on the efforts of other shareholders. Any fund manager rewarded on the basis of performance relative to a benchmark would do better relative to the competition by doing nothing and reaping the benefits of others' intervention. Thus it is thought that active shareholders are neither capable, nor possess the appropriate incentives to add value to their target companies.

'There has been, and there will remain, a dearth of credible incentives for

²The effectiveness of the market for corporate control has been discussed extensively in the literature (Manne, 1965; Grossman and Hart, 1980; Shleifer and Vishny, 1986).

³For example, remuneration contracts and the threat of dismissal as discussed in chapters 2 and 3.

⁴Top managers often argue that compliance with shareholder expectations of corporate governance rules limits their ability to deliver shareholder value. See 'Mindless corporate governance box-ticking even afflicts FTSE 100 bosses' Telegraph 18 July 2008.

institutional investors to involve themselves more systematically in corporate governance matters and fund managers may be doing their best by remaining passive' (Webb, Beck, and McKinnon, 2003).

However, Leech (2003) believes that the incentive and free riding problems to activism have been overstated. Firstly, if the check on managerial discretion is sufficiently value enhancing, institutions with only a small holding may experience sufficient private incentives to provide the public good of activism. Although institutions have low holdings in percentage terms they may be large in absolute economic terms. It is also unclear the extent to which the transaction costs of activism are prohibitive. Moreover, there are real costs associated with alternatives to activism such as exit. An institution is unlikely to be able to dump all their shares without depressing the share price. The free-riding problem remains, but a complete failure to engage in a value adding activity in the hope that somebody else might do it appears rather 'irrational and pathological' (Leech, 2003). It is not unreasonable to suppose that institutions could co-ordinate a commitment to activism by establishing some sort of code of best practice or share the costs of activism through membership of a lobby group such as the Association of British Insurers (ABI) or National Association of Pension Funds (NAPF).

The notion of passive shareholders is inconsistent with the conventional wisdom that has shaped institutional arrangements in the UK⁵. A call for more participation by shareholders has been central to the ethos that has driven corporate governance reform. Throughout the 1990s, institutional shareholders have been encouraged to become active investors in the governance of the companies in which they invest (Hampel, 1998; Myners, 2004). It is acknowledged by governance activists (Monks and Minow, 2004) that institutional arrangements, particularly relating to the election and removal of directors in the UK, provide much more scope for successful activism than in the US (Black and Coffee, 1994; Karpoff, 2001; Bebchuk, 2005).

The model of delegating the whole of the decision making function to management is also inconsistent with the beliefs of the managers of activist funds, who presumably believe that their interventions add value. Active investors seek to increase value in the companies in which they invest by improving existing corporate governance practices (Smith, 1996). The underlying assumption driving these practices is that corporate governance is an important determinant of long term shareholder value. Gompers et al (2003) assert that a strategy of buying firms with strong shareholder rights and selling firms with

⁵See chapter 1 for an overview and history of UK institutional arrangements.

weak shareholder rights would have earned an abnormal return of 8.5% per year during the 1990s. Core et al (2006) explicitly investigate this finding and conclude poor governance leads to operational underperformance, albeit this underperformance is anticipated and priced efficiently by the market. Other authors, have found corporate governance to be important in determining the severity of agency problems (Dittmar and Mahrt-Smith, 2007) and that governance rules and law can impact on firm value (Chhaochharia and Grinstein, 2007; Daines, 2001). Certainly, some individual activists pursue social, environmental or political objectives that have little to do with shareholder returns. However, professional UK activist funds have an explicit goal of shareholder value maximisation and their managers are typically remunerated with packages that contain a large incentive element that is contingent on the delivery outperformance of the benchmark. An in-depth analysis of the activism undertaken by Hermes UK Focus Fund by Becht, Franks, Mayer, and Rossi (2008) estimated that 90% of the per annum abnormal returns of 4.9% for the period 1998-2004 were due to activist outcomes.

Activism takes many guises. First, active investors may engage and consult with management and non-executive directors to resolve any governance issues behind the scenes (Carleton, Nelson, and Weisbach, 1998). Becht, Franks, Mayer, and Rossi (2008) report that the gains from activism are largely attributable to these types of engagements. Second, poorly governed companies or companies that restrict shareholder rights may be identified and embarrassed into changing their actions. For example, the Association of British Insurers (ABI) issues ‘Red Tops’ prior to general meetings, which highlight serious breaches of best practice⁶. Third, shareholders are able to propose resolutions and exercise their vote at general meetings. Finally, shareholders may pressure the board to appoint or dismiss certain directors, including the CEO. This chapter will focus upon shareholder voting and the threat of dismissal.

4.2 Shareholder Voting

Companies are required by UK listing rules to hold an Annual General Meeting (AGM) at least once every 15 months (Companies Act 1985) and companies rarely deviate from the best practice of holding an AGM every 12 months. At the AGM, shareholders are asked to approve resolutions proposed by the board. These will include proposals to approve the report and accounts, to approve the directors’ remuneration report, to (re)appoint the

⁶www.ivis.co.uk/pages/corporate.html

auditors, to (re)elect directors, request authorities to issue/purchase company shares and any other items that the board needs approval by shareholders⁷. Shareholders are entitled to add their own resolutions. Motions are carried either on a show of hands or on a poll, depending on the provisions contained within the company's articles of association. Institutions typically cast their votes by proxy. Prior to the meeting, the Chairman will be informed of the proxy poll results and is obligated to put the resolution to a poll if proxy poll results could affect the outcome of the resolution.

Best practice in the UK conducts voting arrangements on the basis of 'one share one vote' (Hampel, 1998). Deviations from this arrangement may occur when the company has more than one class of share capital, for instance with start-up companies that have recently floated. Passive shareholders may delegate their votes to management. However, institutions such as pension funds, mutual funds and local authorities are encouraged by best practice to vote their shares in an informed and responsible manner (Myners, 2004).

The first formal statement with respect to responsible voting in the UK was the Institutional Shareholder's Committee's (ISC's)⁸ 'The responsibilities of institutional shareholders and agents - statement of principles' in 1991. In 1999, the ABI and NAPF issued a joint statement titled, 'Responsible Voting' restating the Hampel Committee's (1998) principle that, 'the right to vote is an asset and institutional investors owe it to their clients to make considered use of it'. The Myners report (2001) further confirmed that, 'voting is one of the central means by which shareholders can influence the companies in which they have holdings', and the review believes that a culture in which *informed* voting was more universal is very much to be desired.

Practically, it has become very cheap for shareholders to vote their shares. Developments such as electronic proxy voting and the emergence of professional proxy voting and advisory firms for shareholders has greatly reduced the cost of shareholders exercising an informed and considered vote⁹. The incentive and free-rider arguments previously described regarding other methods of shareholder activism are founded upon the large costs incurred by the activist. However, because the practical costs of voting are negligible, if

⁷See appendix for an example of a proxy card.

⁸ISC includes the Investment Management Association (IMA), the ABI, the NAPF and the Association of Investment Trust Companies (Its)

⁹In the UK, the dominant proxy voting agency is Research Recommendations and Electronic Voting (RREV), a subsidiary of Institutional Shareholder Services (ISS). Black (1998) shows that in many cases, a proposal's success hinges upon the ISS voting recommendation. ISS launched in 1986 and was sold to RiskMetrics for more than US\$500m in Nov 2006. The combined group generates \$200m in revenue a year, with 900 employees and 2,400 clients (www.riskmetrics.com).

voting delivers any tangible benefit it is likely that there will be an incentive to vote.

While the practical costs of voting are nominal, shareholders who vote against management risk the possibility of a negative market reaction to their votes. The market might react adversely to shareholder dissent if dissent signals fundamental problems with the company's governance structure and hence an expectation of poorer future performance. It may also indicate that discrete 'behind the scenes' engagements between management and shareholders have failed and that a time and resource consuming power struggle is about to take place. This risk may or may not be worth taking, depending on the likelihood that a negative vote will prompt management to make changes and that these changes translate to shareholder returns in the longer term.

Even if there is no impact of voting upon equity value, shareholders may still experience an incentive to vote if they have motives other than equity value maximisation. Shareholders may be willing to sacrifice financial returns in pursuit of non-financial objectives, if they value these objectives more than the foregone return incurred by such actions. These alternative motives could include a desire for more equitable remuneration arrangements or to remove certain individuals from the board. Such a finding would be consistent with Karpoff's (2001) literature review, which reports that most activist efforts in the US cause governance changes that do not translate into improved shareholder returns.

This chapter will analyse the impact of shareholder voting on shareholder returns and governance arrangements. As such, this chapter will constitute the first formal analysis of the poll results from company meetings. Voting is the cheapest form of activism and hence is likely to be the first mechanism tried by shareholders to increase value. If voting is effective, then other, more costly mechanisms might be less necessary. It will be particularly interesting to ascertain the extent to which voting has influenced governance and remuneration arrangements over the period of our sample given the increased emphasis regulators have placed on informed voting as a means of improving governance.

However, it is known that some shareholders undertake direct engagements with management¹⁰. Therefore, it is likely that an analysis of voting alone is not sufficient to capture all activist efforts by shareholders. Voting might be even interpreted as a substitute for more direct activism, if all initiation and implementation decisions are delegated to management with voting constituting the ratification function as envisaged by Fama and Jensen (1983). Active shareholders use direct communications with the board board to influence

¹⁰There is specific provision in the Combined Code to facilitate engagements between management and major shareholders. See section 1.D Combined Code (2006).

the operation of their companies and improve returns. These engagements with the board are unobservable to this large sample study. However, chapter 3 was able to identify the instances of forced CEO departure, where the CEO was removed by the board under pressure from shareholders. Therefore, as a comparison to the impact of shareholder voting, this chapter will conduct an event study to estimate the market's reaction to the removal of the CEO.

4.3 Data

This chapter uses the sample from Manifest as described in chapters 2 and 3. In addition, the data includes unique information on the poll results of shareholder votes cast at annual general meetings. Two resolutions are proposed by almost all FTSE 350 companies: the proposal to approve the annual report and accounts; and the proposal to approve the directors' remuneration report. Approval of the annual report and accounts is not mandatory but was almost universal market practice throughout the years of our sample. The Directors' Remuneration Report Regulations (2002) require FTSE 350 companies incorporated under UK company law to propose a non-binding vote on the directors' remuneration. As the vote is non-binding the resolution is essentially a confidence vote on the remuneration setting process. Between 1998 and 2002 remuneration report voting was on a voluntary basis only. Prior to 1998, no remuneration report resolutions were proposed. Table 4.2 shows the number of companies in our sample and the proportion proposing the remuneration report.

In addition, our data contains the poll results of the resolutions to elect/re-elect the CEO. The Combined Code (1999) recommends that companies' articles of association require all directors, including the CEO, to retire (and propose themselves for re-election) in the year of their appointment to the board and then at least once every three years. Compliance amongst FTSE 350 companies is unanimous with this provision. Some companies require annual re-election for all directors. Prior to this provision, best practice recommended that one third of the board was required to retire each year with the intention that the whole board is re-elected every three years. However, under the former provision some directors deemed essential to the company, such as the CEO, could be exempt from re-election.

Unfortunately, public disclosure of poll results, though established as a basic compliance with UK Codes of best practice (Combined Code, 2006), is not mandatorily required by UK law. Consequently, a proportion of companies refused to disclose their poll results,

Table 4.1: Report and Account Resolutions

Financial Year Ending	No. of R&A Resolutions	Average % of ISC Voted	Ave Dissent on Rem Report	No. of Reports Voted Down	No. of Reports more than 10% Dissent
1996	55	47.20%	1.04%	0	1
1997	149	43.98%	0.76%	0	2
1998	230	47.85%	1.12%	1	3
1999	239	49.04%	0.83%	0	4
2000	277	52.88%	0.95%	0	3
2001	294	56.12%	1.33%	0	7
2002	332	55.97%	1.72%	0	13
2003	331	58.95%	1.73%	2	13
2004	312	61.46%	2.02%	0	7
2005	143	61.01%	2.14%	0	6

R&A = Report and Accounts

ISC = Issued Share Capital

The Myners Report (2001) refers to an NAPF sponsored, 'Report of the Committee of Inquiry into UK Vote Execution' which found average turnout had risen from 20% in 1990 to approximately 50% by 1999.

particularly for earlier years in the sample. This introduces the possibility of a selection bias in our data, as it is conceivable that the companies that do not disclose their results do so because their results are embarrassing. However, it is also possible that the companies that refused to disclose were distributed randomly, i.e. uncorrelated with the level of dissent or our regressors¹¹. Companies that refused to disclose were consistent in their non-disclosure until the first year in which results are disclosed. Once results have been disclosed, all subsequent years are disclosed. This is consistent with the random policy explanation for non-disclosure rather than any selection bias. Further, an examination of the poll results in the first year of disclosure revealed that they were not significantly different in terms of dissent than other years (*ceteris paribus*), which would be expected if the company discloses from the first good year onwards. We proceed on the basis that our poll data is not biased in terms of disclosure.

Consistent with the prior chapters, investment trusts, which have no executive directors, are excluded from the analysis, although self managed investment trusts are retained. Data in relation to share prices and number of shares in issue was obtained through Datastream.

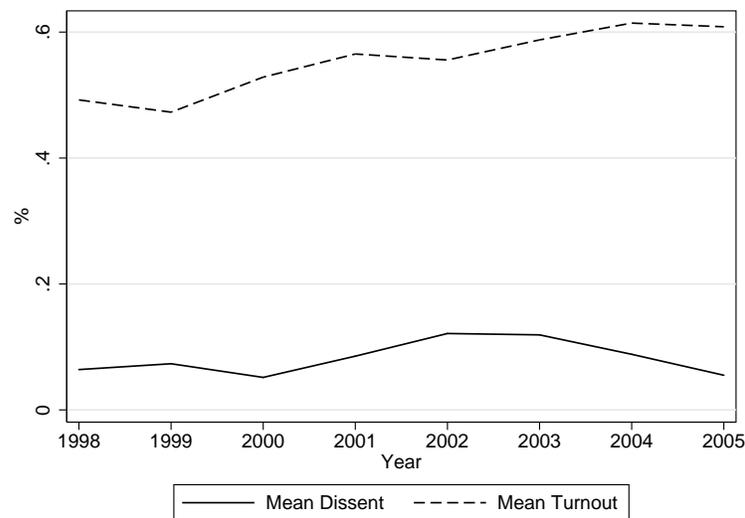
Tables 4.1 and 4.2 shows the votes cast and dissent in relation to the resolutions to approve the report and accounts and the remuneration report respectively. Dissent levels on the report and accounts are typically very low, with meaningful levels of dissent being registered in a very few companies. Dissent on the report and accounts marginally increases

¹¹When asked by Manifest, companies who did not disclose typically argued that historic company policy was the reason for non-disclosure.

Table 4.2: Remuneration Report Resolutions

Financial Year Ending	No. of Rem Report Resolutions	Average % of ISC Voted	Ave Dissent on Rem Report	No. of Reports Voted Down	No. of Reports more than 25% Dissent	Nature of Proposal
1998	4	49.23%	8.94%	0	0	Voluntary
1999	9	47.28%	7.34%	0	0	Voluntary
2000	14	52.84%	5.49%	0	1	Voluntary
2001	79	56.52%	8.37%	0	2	Voluntary
2002	242	55.56%	12.73%	1	35	Voluntary
2003	333	58.76%	12.66%	3	55	Mandatory
2004	315	61.43%	9.77%	3	32	Mandatory
2005	142	60.84%	6.45%	0	7	Mandatory

Proposal of the remuneration report became mandatory for UK incorporated and LSE listed companies with the financial year ending on or after 31 December 2002.

Figure 4.1: Remuneration Report Resolutions

over the course of our sample. This may reflect the increasing levels of shareholder voting and developments in best practice which encouraged informed voting as opposed to automatically voting with management on all resolutions.

In relation to the remuneration report resolutions, it is interesting that trend of executive pay growth was unrelenting during a period of increasing poll turnout. Dissent is significantly larger than on other resolutions and peaks when the resolution becomes mandatory in 2002/3. Prior to 2002, companies who expected voting dissent were unlikely to volunteer a vote on remuneration. The peak also coincides with a period of poor market performance. It is possible therefore, that the decline in voting dissent 2002-2005 reflected an uptake in best practice and/or a general decline in dissatisfaction. Section 4.4 seeks to isolate the effect of poll turnout and dissent on executive pay and shareholder return.

Table 4.3: To Elect/Re-elect the CEO

Financial Year Ending	No. of elect/re-elect CEO Resolutions	Median Dissent	Mean Dissent	Standard Deviation	No. of Reports more than 10% Dissent
1996	11	6.32%	6.62%	6.19%	3
1997	39	2.32%	5.50%	6.31%	9
1998	60	3.62%	6.23%	7.17%	13
1999	68	1.69%	4.42%	6.02%	10
2000	85	1.01%	4.80%	6.76%	15
2001	88	1.79%	6.15%	7.89%	26
2002	93	2.79%	5.88%	7.82%	23
2003	115	1.28%	3.46%	6.24%	15
2004	112	1.11%	2.09%	3.01%	4
2005	135	0.71%	1.78%	3.31%	3

Table 4.3 shows the number of resolutions and movement in dissent in relation to resolutions that propose to elect or re-elect the CEO. Dissent is typically larger than on the report and accounts but there are even fewer examples of very large dissent. Similar to the remuneration report resolution, average dissent declines post 2002 reflecting either improved market performance and/or uptake in best practice.

4.4 Results

In this section we seek to determine whether prior voting decisions on the companies' report and accounts affect Total Shareholder Return (TSR). Care is needed when considering the timing of the voting decision on performance. To clarify, votes relating to a particular year under review are cast part way through the following year. The majority of companies report their accounts with the year ending 31 December and votes are cast in April or May in the following year. Therefore if we are seeking to explain TSR with the voting levels, voting levels must be lagged at least by one year. Time and sector dummies respectively control for macroeconomic and industry specific shocks. To retain consistent estimators in the event that unobserved firm-specific effects are correlated with our regressors, the results of the within estimator are reported.

Table 4.4 shows the effect of shareholder voting on total shareholder return as measured by the turnout and dissenting votes as a percentage of total votes cast. The reported estimates on the voting variables are mostly negative and statistically insignificant. There is no evidence to suggest that active voting by shareholders improves TSR in the immediate subsequent years. Dissent also doesn't appear to improve returns in the following year.

Table 4.4: Shareholder Voting on Total Shareholder Return

	<i>OLS</i>		<i>Random Effects</i>		<i>Fixed Effects</i>	
<i>Shareholder Voting</i>						
<i>Votes Cast</i> ($t - 1$)	0.006 (0.08)		-0.021 (-0.27)		-0.105 (-0.97)	
<i>Votes Cast</i> ($t - 2$)		-0.069 (-0.95)		-0.096 (-1.13)		-0.107 (-1.03)
<i>Dissent</i> ($t - 1$)	-0.417* (-1.71)		-0.573** (-2.33)		-0.761*** (-2.96)	
<i>Dissent</i> ($t - 2$)		-0.742 (-1.44)		-0.720 (-1.24)		-0.577 (-0.96)
CH&CEO	0.038 (0.73)	0.107** (2.16)	0.050 (0.87)	0.097 (1.46)	0.099* (1.62)	0.104 (1.22)
Board Size	-0.007* (-1.92)	0.001 (0.23)	-0.006 (-1.48)	0.003 (0.59)	-0.009 (-1.32)	0.001 (0.08)
% Insiders	0.064 (0.86)	0.023 (0.27)	0.069 (0.87)	-0.021 (-0.21)	0.102 (1.11)	0.004 (0.03)
Ln Sales	0.002 (0.22)	-0.013 (-1.18)	0.000 (-0.01)	-0.029* (-1.86)	-0.076** (-2.37)	-0.128*** (-2.86)
Blockholder	0.024 (0.90)	0.018 (0.61)	0.033 (1.15)	0.022** (0.71)	0.066 (2.14)	0.037 (1.08)
CEO Holdings	-0.002 (-0.67)	-0.002 (-0.53)	0.000 (0.01)	-0.002 (-0.43)	0.003 (1.07)	-0.001 (-0.35)
N	1973	1581	1973	1581	1973	1581
No. Companies	451	412	451	412	451	412
R-squared	17.54%	17.36%	18.96%	17.71%	19.89%	19.24%

T-stats robust to heteroscedasticity and clustered around company.
Year and sector dummies included.

Rather it appears that returns fall, perhaps because dissent identifies issues that remain unresolved, resulting in continued poor performance. Alternatively, corporate resources could have been wasted in addressing shareholder opposition and therefore companies without dissent have performed better. Either way, shareholder dissent has not driven managers to actions that result in superior returns.

The other control variables are largely statistically insignificant. This is not unexpected as market efficiency predicts the effect of these variables would be anticipated and priced correctly by the market. Table 4.5 repeats the exercise by measuring performance with Earnings Per Share (EPS) growth¹². The coefficients of dissent upon EPS growth are broadly consistent with the effect of dissent on TSR, albeit the variance is such that the coefficients are statistically insignificant. Larger companies appear to have lower EPS growth while companies with at least one major shareholder experience greater EPS growth. The remaining control variables are largely insignificant and the explanatory power of the model as measured by R-squared is low suggesting that earnings growth is determined predominately by factors for which we do not have data.

4.4.1 Shareholder voting on remuneration

It appears that protesting through casting ‘abstention’ or ‘against’ votes does not improve returns for shareholders or improve accounting performance as measured by EPS growth, at least in the short to medium term. Indeed, if anything, it appears that prior dissent is correlated with under-performance.

It is possible that shareholders could vote for some other non-financial reason. One high profile issue for activist shareholders is executive remuneration¹³. Concerns that executives are over-paid are discussed in chapters 1 and 2. In table 4.6 we test the impact of activism upon pay levels. For the reasons described in chapter 2, these estimations use a system GMM estimator¹⁴. We find no evidence that shareholder voting or dissent reduces the level of remuneration in the following years. Indeed, shareholder turnout is correlated with higher levels of future pay. This may reflect a greater desire to vote where

¹²EPS growth is measured here by the difference in logged EPS hence negative values of EPS are dropped. The measure of EPS is the underlying measure as reported in the financial statements which is typically adjusted for exceptional items such as write offs and acquisitions.

¹³Excessive pay levels are not the only remuneration related issue for activists. Institutional attention often focuses upon the details of the remuneration package, such as vesting conditions for bonuses, the structure of equity incentive schemes, cost of severance or independence and accountability in the pay setting process.

¹⁴xtabond2 in STATA.

Table 4.5: Shareholder Voting on EPS Growth

	<i>OLS</i>		<i>Random Effects</i>		<i>Fixed Effects</i>	
<i>Shareholder Voting</i>						
<i>Votes Cast</i> _(t-1)	-0.072 (-0.74)		-0.023 (-0.21)		0.061 (0.35)	
<i>Votes Cast</i> _(t-2)		-0.036 (-0.32)		-0.030 (-0.27)		-0.046 (-0.25)
<i>Dissent</i> _(t-1)	-0.480 (-0.94)		-0.455 (-0.79)		-0.263 (-0.39)	
<i>Dissent</i> _(t-2)		-0.332 (-0.43)		-0.319 (-0.40)		0.080 (0.07)
CH&CEO	0.030 (0.35)	-0.019 (-0.20)	0.048 (0.58)	-0.018 (-0.19)	0.021 (0.25)	-0.006 (-0.06)
Board Size	-0.006 (-0.92)	-0.010 (-1.63)	-0.004 (-0.51)	-0.010 (-1.60)	-0.003 (-0.29)	-0.003 (-0.23)
% Insiders	0.020 (0.18)	0.112 (1.02)	-0.062 (-0.51)	0.111 (1.00)	-0.143 (-0.88)	0.093 (0.58)
Ln Sales	-0.030** (-2.22)	-0.011 (-0.80)	-0.046*** (-2.99)	-0.012 (-0.85)	-0.204** (-2.75)	-0.118* (-1.90)
Blockholder	0.038 (0.86)	0.074* (1.71)	0.056 (1.13)	0.076* (1.73)	0.131** (2.00)	0.126** (2.27)
CEO Holdings	-0.003 (-0.76)	0.000 (-0.01)	-0.004 (-0.97)	0.000 (-0.06)	-0.001 (-0.27)	-0.004 (-0.92)
N	1793	1447	1793	1447	1793	1447
No. Companies	418	379	418	379	418	379
R-squared	3.40%	4.33%	4.40%	6.97%	3.23%	1.86%

T-stats robust to heteroscedasticity and clustered around company.
Year and sector dummies included.

the remuneration package has been identified as one that has potential for larger future pay levels. It may also reflect a greater desire to vote as the company's profile increases which will be correlated with both company size and remuneration levels. Lagged dissent on the remuneration report acts in the same direction as turnout but is short of statistical significance.

Given the distribution of dissent in our sample it is possible that the impact of shareholder dissent on pay may not be linear. While lagged dissent is broadly positively correlated with pay, a very large level of lagged dissent may reduce pay. However, repeating the above regression with dummy levels of dissent at 10% and 20% did not find a significant impact in any of the measures of remuneration.

4.4.2 Shareholder voting on CEO turnover

By applying the techniques of duration analysis, chapter 3 found some evidence of managerial entrenchment and some evidence that, in the latter half of the sample conditions for entrenchment were less favourable. It is possible that it was the increasing levels of shareholder activism that served to reduce managerial entrenchment.

Using the poll results from the proposal to (re)elect the CEO we examine whether prior dissent influences the likelihood of CEO exit. Table 4.7, however finds no evidence that shareholder voting increases the likelihood of CEO exit in the following year.

The experiments performed in chapter 3 suggested that splitting the mode of exit into competing events was statistically sensible. We would expect shareholder activism to impact the hazard of forced exit more than the other modes of exit. We repeat this here. However, splitting the exit likelihood into competing risks, does not produce a significant voting effect on the hazard of forced departure as shown in table 4.8. As in chapter 3, our insider variables suggest a significant reduction in the hazard of forced departure when friendly directors are appointed to the board.

It is possible that shareholders do not choose voting as the mechanism by which they exercise their power to dismiss the CEO. UK shareholders certainly face less obstacles to firing the CEO than encountered by investors in most other territories (Monks and Minow, 2004). Shareholders can fire the CEO by requisitioning a company meeting and passing a motion to dismiss the CEO. However, this is a rare event. Indeed, the only instance of shareholders dismissing the CEO by voting in our sample was at Eurotunnel in an

Table 4.6: Shareholder Voting on Remuneration

	$\ln(\text{Salary})$		$\ln(\text{Emoluments})$		$\ln(\text{Total Pay})$	
<i>Shareholder Voting</i>						
Turnout_{t-1}	1.109*** (2.98)		2.340*** (3.69)		0.611** (2.35)	
Turnout_{t-2}		1.576*** (5.36)		1.625*** (4.08)		1.374** (2.40)
Dissent_{t-1}	1.120 (0.62)		-0.893 (-0.50)		-1.869 (-1.16)	
Dissent_{t-2}		1.021 (0.65)		3.501* (1.66)		2.419 (0.61)
Pay_{t-1}	0.407 (1.57)	0.233 (2.00)	0.319 (3.14)	0.288 (1.67)	0.490 (2.66)	0.426 (2.16)
BoardSize	0.000 (-0.04)	-0.014 (-0.78)	0.009 (0.49)	0.011 (0.48)	0.003 (0.22)	0.013 (0.64)
LnSales	0.331 (2.04)	0.433 (5.57)	0.376 (5.26)	0.391 (2.87)	0.325 (2.61)	0.319 (3.54)
TSR	0.082 (0.98)	0.141 (1.11)	0.250 (2.34)	0.515 (2.12)	0.210 (2.32)	0.147 (0.53)
1999	0.110 (1.04)		0.183 (0.62)		0.282 (0.79)	
2000	0.351 (1.83)	0.235 (1.32)	0.553 (1.54)	0.112 (0.52)	0.323 (0.87)	0.095 (0.32)
2001	0.138 (0.39)	0.372 (1.46)	0.494 (1.27)	0.518 (0.72)	0.322 (1.62)	0.223 (0.34)
2002	0.114 (1.23)	0.444 (1.42)	0.072 (0.52)	0.513 (0.62)	0.063 (0.61)	0.395 (0.43)
2003	0.085 (1.17)	0.082 (0.46)	0.240 (2.67)	0.388 (0.79)	0.217 (2.78)	0.253 (0.47)
2004	0.061 (0.94)	0.021 (0.19)	0.185 (2.01)	0.097 (0.25)	0.149 (2.04)	0.068 (0.22)
N	695	376	685	372	697	377
No. CEOs	330	263	327	260	331	264
No. Instruments	35	31	35	31	35	31
H_0 : Overidentifying Restrictions are Valid						
χ^2_{19}	31.12	14.05	26.03	13.88	31.44	14.11
$\text{Prob} > \chi^2$	0.120	0.828	0.299	0.837	0.112	0.825
H_0 : No Second Order Autocorrelation						
$Z \text{ Stat}$	0.44	1.14	1.65	0.81	-0.84	-1.21
$\text{Prob} > Z$	0.657	0.255	0.098	0.421	0.399	0.227

Two-step system GMM with Windmeijer Corrected Standard Errors

Table 4.7: Voting on CEO Election on Any Exit

<i>Shareholder Voting</i>				
<i>Dissent</i> _{t-1}	1.876	(0.47)		
> 10% <i>Dissent</i> _{t-1}			0.874	(-0.62)
<i>Total Shareholder Return</i>				
Lower Quartile - Median	0.757***	(-2.81)	0.759***	(-2.78)
Lower Quartile - Upper Quartile	0.750***	(-3.01)	0.756***	(-2.94)
Upper Quartile	0.616***	(-4.65)	0.618***	(-4.61)
Ln Sales	1.052**	(2.10)	1.053**	(2.13)
Age	1.002**	(2.14)	1.002**	(2.10)
Board Size	0.992	(-0.52)	0.993	(-0.50)
% Insiders	0.394***	(-3.52)	0.396***	(-3.50)
% of CEO appointments	0.354***	(-5.84)	0.354***	(-5.85)
Ave tenure of NEDs	0.941***	(-3.44)	0.942***	(-3.39)
N			3366	
No. CEOs			871	
No. Failures			607	

Semi-parametric (Cox (1972) Proportional Hazards Model).
Hazard ratio's reported

Extraordinary General Meeting¹⁵. Resolutions to remove the CEO were also proposed at British Land (2003) and Skypharma (2006) but the motions were not carried. The largest dissent recorded against the CEO in an Annual General Meeting was 34% at Hewden Stewart plc in June 2000 but even this was due to a technicality¹⁶.

Therefore, to account for the 134 instances of forced CEO exit in our sample, it must be that shareholders exercise their power to oust the CEO through non-voting means, such as informal engagements with the chairman and non-executive directors. As we can not observe these engagements directly, we will consider the impact of shareholder activism by the market's reaction to the dismissal of the CEO.

4.5 Market Reaction to CEO Dismissals

In chapter 3 it was argued that the ability of shareholders to dismiss the CEO is a fundamental control right retained by shareholders of public limited companies to prevent the CEO deviating from optimising shareholder value. It was found that that poorly per-

¹⁵See Guardian 'Rebels sack Eurotunnel board' 8 April 2004; <http://www.guardian.co.uk/business/2004/apr/08/politics.transportintheuk>.

¹⁶The large dissent was a result of the CEO resigning from the company very close to the meeting date. It was too late for the company to withdraw his name from the poll card so the board recommended shareholders to vote against his re-election.

Table 4.8: Voting on CEO Elections Competing Risks

	<i>Forced Departure</i>		<i>Retirements</i>		<i>Other</i>	
<i>Shareholder Voting</i>						
<i>Dissent</i> _(t-1)	0.133		9.822		0.164	
	(-0.51)		(0.48)		(-0.34)	
> 10% <i>Dissent</i> _(t-1)		0.651		1.872		0.796
		(-0.60)		(0.73)		(-0.25)
<i>Total Shareholder Return</i>						
Lower Quartile - Median	0.410***	0.410***	2.201**	2.202**	2.034**	2.033**
	(-3.62)	(-3.61)	(2.62)	(2.63)	(2.35)	(2.35)
Lower Quartile - Upper Quartile	0.357***	0.358***	1.796*	1.789*	2.020**	2.021**
	(-4.12)	(-4.12)	(1.82)	(1.81)	(2.24)	(2.24)
Upper Quartile	0.202***	0.202***	3.160***	3.157**	2.311**	2.315**
	(-5.04)	(-5.04)	(3.08)	(3.08)	(2.22)	(2.23)
Ln Sales	1.137***	1.136***	0.956	0.958	0.942	0.941
	(3.00)	(2.97)	(-1.09)	(-1.05)	(-1.43)	(-1.46)
Age	1.000	1.000	1.007**	1.007***	0.999	0.999
	(-0.07)	(-0.08)	(2.53)	(2.55)	(-0.47)	(-0.47)
Board Size	0.951	0.951	0.949	0.949	0.985	0.985
	(-1.16)	(-1.14)	(-0.96)	(-0.97)	(-0.27)	(-0.28)
% Insiders	0.173**	0.173**	2.461	2.466	2.286	2.267
	(-2.43)	(-2.43)	(1.05)	(1.05)	(0.94)	(0.93)
% of CEO appointments	0.182***	0.182***	2.155*	2.146*	1.029	1.026
	(-4.56)	(-4.55)	(1.61)	(1.60)	(0.06)	(0.06)
Ave tenure of NEDs	0.800***	0.800***	1.165**	1.164**	1.156**	1.156**
	(-3.66)	(-3.66)	(2.28)	(2.28)	(2.10)	(2.11)
<i>N</i> [†]	10100					
No. CEOs	2613					
No. Failures	607					

Semi-parametric (Cox (1972) Proportional Hazards Model).

Hazard ratio's reported

† Post duplication for competing risks as in Lunn and McNeil (1995).

forming UK CEOs are more likely to lose their jobs, particularly in the early years of their tenure. This result was consistent with the wider literature on managerial turnover (Coughlan and Schmidt, 1985; Dalton and Kesner, 1985; Friedman and Singh, 1989; Parrino, 1997; Audas, Dobson, and Goddard, 1999; Brickley, 2003). Shareholders who fire their CEO presumably attribute the underperformance of the Company, at least in part, to the CEO and believe that the successor will do a better job.

Shareholders can engage with board members and propose the CEO's removal at a board meeting. If successful, this action will then be immediately announced to the stock market. However an announcement of a formal dismissal is also rare. In chapter 3 it was shown that only 10 instances of formal dismissals were recorded. Rather, the announcement is more likely to declare that the CEO 'resigned' even though he was actually forced out under pressure from shareholders (see chapter 3.3 for a detailed discussion).

4.5.1 Literature Review

Competing theories have been advanced each seeking to explain why poor performance leads to managerial turnover. Under the 'scapegoat hypothesis' (Khanna and Poulsen, 1995; Huson, Malatesta, and Parrino, 2004) poor performance is thought only to be an inevitable statistical property of a random distribution. CEOs dislike effort so must be threatened with dismissal, but in equilibrium, all managers will supply the same effort (Holmstrom, 1979). As managerial competence does not vary between individuals under the scapegoat hypothesis, only the unlucky CEOs will be dismissed. The incoming CEOs are not more competent than the prior CEOs but subsequent performance is likely to be better than the unusually poor prior performance. Performance over the long term will tend towards the mean (Kim, 1996).

In contrast, the 'improved management hypothesis' (or performance revelation hypothesis, see chapter 3) argues CEO talent does vary between individuals but is not directly observable. Firm performance reveals CEO competence with increasing certainty over time. Consequently, poor CEOs are replaced and improved returns should follow, above those that would occur just from mean reversion. However, certain factors may complicate the dismissals process. First, it may not be easy to identify poor firm performance. If the conditions are favourable, bad CEOs may escape dismissal by delivering acceptable returns in absolute terms, even if they under-perform their benchmarks. Second, as found in chapter 3, CEOs may capture the monitoring process by influencing board nominations.

Family and friends of the CEO are, perhaps, less rigorous in their duties than independent directors. Finally, the power of the CEO relative to the institutional shareholders may be important in determining the success of attempts to oust the CEO. If the CEO controls a large proportion of the company's equity then institutions may struggle to raise enough opposition to remove the CEO.

In seeking to examine these theories, several prior studies have analysed the market's reaction to the announcement of a CEO departure. A summary of these are provided in table 4.9. The majority of studies use a market model of prediction errors (PE)¹⁷. Using Warner, Watts, and Wruck (1988)'s notation, prediction errors are calculated as:

$$PE_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \quad (4.5.1)$$

where R_{it} is the stock return of firm i at time t ; R_{mt} is the market's return at time t ; and $\hat{\alpha}_i$ and $\hat{\beta}_i$ are estimates of market model parameters. These are then averaged over a sample of N firms to calculate the mean daily abnormal return as follows:

$$PE_t = \frac{1}{N} \sum_{i=1}^N PE_{it} \quad (4.5.2)$$

While some evidence from the US suggests that the market reacts favourable to a CEO turnover announcement (Bonnier and Bruner, 1989), the literature relating to the UK has found that the market initially reacts negatively to the announcement of a CEO dismissal (Dedman and Lin, 2002; Hillier, Marshall, McColgan, and Werema, 2006). While the actual dismissal of the CEO might be viewed favourably by the market, it is difficult to decontaminate the information pertaining to the CEO's dismissal from the other information that is implied about the company's earnings or future prospects in the announcement to the stock market (Beatty and Zajac, 1987). However, when measurement is conducted over a longer time horizon, operational performance and shareholder returns have been shown to improve both in UK and US firms (Reinganum, 1985; Friedman and Singh, 1989; Huson, Malatesta, and Parrino, 2004; Hillier, Marshall, McColgan, and Werema, 2006). Our results are consistent with these findings.

After using a control group to adjust for mean reversion, Huson, Parrino, and Starks (2001) and Huson, Malatesta, and Parrino (2004) find the companies experiencing a suc-

¹⁷Finance scholars have proposed other methods of calculating abnormal returns which include attempts to control for company size and growth opportunities (Fama and French, 1993).

Table 4.9: Market Reaction to CEO Turnover

<i>Study</i>	<i>Sample</i>	<i>Method</i>	<i>Finding</i>
Reinganum (1985)	218 paired changes 1978-1979	Market model of prediction errors t-1 to t+1	Positive reaction for external appointments in small firms
Beatty & Zajac (1987)	420 US CEO changes 1979-1980	Market model of prediction errors t-10 to t+10	Market reacts negatively to CEO turnover
Warner, Watts Wruck (1988)	269 NYSE and AMEX companies 1962-1978	Market model of prediction errors t-60 to t+30	Small positive reaction to CEO turnover.
Weisbach (1988)	387 NYSE companies 1974-1983	Market model of prediction errors t-120 to t-60	Positive abnormal returns to turnover announcement
Lubatkin, Chung, Rogers & Owers (1989)	477 Large US companies 1971-1985	Three Step excess returns t-50 to t+50	Positive Long term reaction to outsiders in financially healthy firms
Friedman & Singh (1989)	187 Fortune 500 companies	Market model of prediction errors. t-2 to t+2	Market reacts positively when prior performance was poor
Bonnier & Bruner (1989)	87 NYSE successions	Market model of prediction errors t-200 to t+100	Positive abnormal returns to turnover announcement in poorly performing firms
Khanna & Poulsen (1995)	128 US firms filling for Chapter 11	Cumulative Abnormal Returns t-5 to t+1	Negative reaction on the day of announcement
Dahya, Lonie & Power (1998)	271 UK firms 1987-1994	Market model of prediction errors t-351 to t+352	Larger positive reaction to CEOs who own above 1% equity
Dedman & Lin (2002)	251 FTSE CEO Departures 1990-1995	Log model of prediction errors t-1 to t+1	Negative reaction on day of announcement
Huson, Malatesta & Parrino (2004)	1344 Forbes successions	Fama-French Three factor model	Poor performance initiates forced exit. Positive reaction over 36 months from replacement
Hillier, Marshall, McColgan, & Werema, (2006)	705 UK CEO changes 1993-2000	Daily returns minus FTSE AllShare t-1 to t+1	Negative reaction on day of announcement

cession event following under-performance achieved superior returns and operational performance over the 36 months following the announcement. Moreover, Huson, Malatesta, and Parrino (2004) find the improvement in performance was greater in the latter half of their sample. As such these results tend to favour the improved management hypothesis as an explanation for CEO turnover decisions. Khanna and Poulsen (1995) however, favour the scapegoat hypothesis finding no positive market reaction to the announcement of a managerial change in financially distressed firms and no significant differences in the decisions made by a control group of managers who performed better.

Weisbach (1988) and Huson, Malatesta, and Parrino (2004) find that the positive reaction to forced dismissals is stronger when the removed CEO was deemed to be entrenched, as measured by the CEOs equity stake and proportion of board insiders. Using a sample of UK companies Dahya, Lonie, and Power (1998) finds even small equity stakes for the CEO are associated with a larger positive market reaction to the ousting of the CEO.

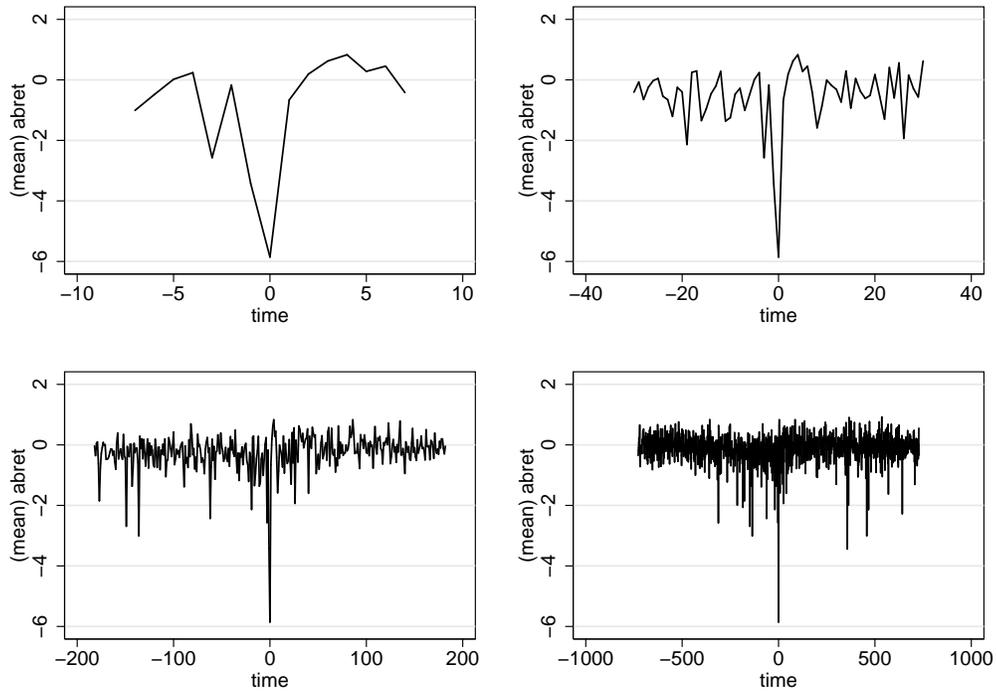
4.5.2 Data

Manifest's sample has some advantages over previous samples used to examine these questions. In particular, because the name and date of the CEO are declared within the dataset it is possible to manually search news archives for information to distinguish between genuine resignations and instances when the CEO was actually forced to resign (See chapter 3 for further details on the categorisation of exit types).

In order to capture the stock market's reaction to a CEO exit, one needs to exactly identify the date on which the stock market learns of the CEO exit. While Manifest records the date on which the CEOs service contract is terminated this may, or may not, correspond to the day when the market learns of the CEO exit. Therefore, in order to be precise as possible, a manual search of Regulatory News Service (RNS) announcements was undertaken to determine the day of the announcement. This was then reinforced by a search of financial news articles to ensure as far as possible that news of the CEO's exit was not in the public domain prior to the official RNS announcement. It remains possible that city traders learn of the CEO exit prior to the business press, through the (illegal) leaking of confidential information, but this section proceeds on the assumption that the extent of this problem is not sufficient to materially distort the share price for the majority of companies in our sample.

Using 134 instances of forced CEO exits between years 1995-2006, figure 4.2 shows

Figure 4.2: Market Reaction to CEO Dismissals



the market's reaction to the announcement of a CEO dismissal. Consistent with Hillier, Marshall, McColgan, and Werema (2006) abnormal return is calculated as the daily return on the stock less the daily return on the FTSE 350 index. This is equivalent to assuming $\beta = 1$ in the market model outlined above. This simple calculation of abnormal returns is sufficient for our purposes¹⁸.

One other technical issue is determining relevant the length of time before and after the announcement date with which to compare the return of the announcement date. Figure 4.2 shows four time periods, one week, one month, half a year and two years respectively before and after the announcement date. Consistent with the extant literature on CEO turnover, a CEO dismissal is associated with a strong negative initial reaction by the market. This is also shown in table 4.10. The average abnormal return for the half year either side of the announcement is -0.24%. The mean return on the day of the announcement is -5.85%, 24 times lower than the mean.

To quantify this effect further, table 4.11 reports estimates of a simple regression of abnormal return against the timing of an announcement of a CEO resignation. The estimating

¹⁸The assumption of $\beta = 1$ is not unreasonable. Companies implicitly make this assumption when using incentive schemes with abnormal return vesting conditions.

Table 4.10: Daily Abnormal Return: One Week

Time	Mean Abnormal Return (%)	Time	Mean Abnormal Return (%)
t-7	-1.00	t+1	-0.66
t-6	-0.48	t+2	0.19
t-5	0.01	t+3	0.62
t-4	0.23	t+4	0.83
t-3	-2.56	t+5	0.28
t-2	-0.17	t+6	0.45
t-1	-3.42	t+7	-0.41
t-0	-5.85		
t-182, t+182	-0.0024		
T	365		

Time is measured in calendar days.

Table 4.11: Daily Abnormal Return Regression

	1	2	3	4	5
<i>Dummy Variables</i>					
Prior Week		-0.598*	-0.831***	-0.913***	-0.914***
		(-1.98)	(-4.11)	(-5.49)	(-6.08)
Day of Announcement	-4.800***	-5.398***	-5.631***	-5.714***	-5.714***
	(-4.22)	(-7.18)	(-10.63)	(-13.03)	(-14.43)
Following Week	1.243**	0.645**	0.412**	0.268	0.236
	(2.18)	(2.14)	(2.04)	(1.61)	(1.57)
Following Two Years				0.062**	
				(2.67)	
Following Four Years					0.093***
					(5.17)
Constant	-1.057**	-0.459***	-0.226***	-0.143***	-0.143***
	(-2.63)	(-4.19)	(-7.98)	(-8.77)	(-9.69)
T	15	61	365	1457	2191
R-squared	70.71%	52.00%	27.09%	12.71%	11.54%

Daily abnormal return measured as a percentage.

equation is as follows:

$$\gamma_t = \alpha + \beta X_t + \mu_t \quad (4.5.3)$$

where γ_t is the mean daily abnormal return from the 134 companies and X_t represents a vector of time dummies.

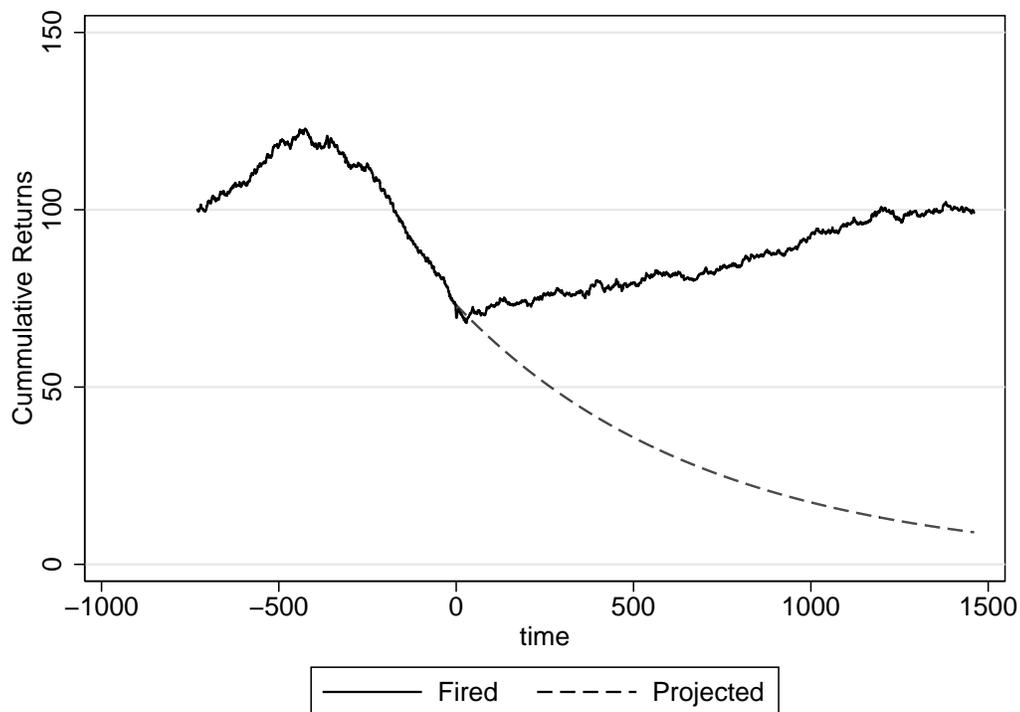
Consistent with the existing UK literature, the week prior to the announcement and the day of an announcement yield below average returns for shareholders. The literature interprets this as capturing the uncertainty and negative information pertaining to future earnings that occur simultaneously with the ousting of the CEO, rather than a negative reaction to the ousting of the CEO. However, shareholders experience higher returns in the week following the announcement. The short term pain of lower returns on the day of the announcement is very quickly balanced by the gains in the following week.

Table 4.11 also shows the longer term reaction to a CEO change. Shareholders experience marginally superior returns in the two years following the announcement date compared with the two years prior to the announcement, after controlling for the poor results of the announcement day, week prior to announcement and the week following the announcement. This is interesting as if markets are efficient, the expectation of daily abnormal returns after the announcement should be zero. It appears that the companies that were previously under-performing, outperform the market after the new CEO is appointed.

For illustrative purposes, figure 4.3 plots cumulative returns of the mean abnormal daily returns, starting with an initial value of 100. On average, the CEO is ousted after 16 months of steadily declining market adjusted returns. We compare this with a projected value of the investment had the companies continued the trend of declining returns. To do this, we use the mean return from the two years prior to the CEO's dismissal (the constant term in table 4.11, columns 4 and 5) to project the cumulative returns of the investment going forward. We interpret this as the return shareholders would have received had they taken no action and the companies had continued to perform as they had in the prior two years.

Figure 4.3 shows that the decision to fire the CEO recovers the initial cost of removing the CEO almost immediately. Unlike the decision to vote on the report and accounts, remuneration report or re-election of the CEO, actually removing the CEO appears, on average, to stop the declining value of the firm's stock and generate positive returns to shareholders.

Figure 4.3: Returns to Firing vs Not Firing



4.5.3 Market Reaction to Headhunted CEOs

As a robustness check, we wish to compare the market reaction to fired CEOs against those for other exit types. Specifically, we examine the case of the headhunted CEO and the retired CEO. CEOs are presumably headhunted after a period of good performance. The performance associated with retired CEOs may be more ambiguous but the results of chapter 3 would indicate that, while some CEOs may retire early as a result of underperformance, the majority retire voluntarily following good performance.

Like with ousted CEOs, table 4.12 indicates an initial negative reaction to the CEO being headhunted, although this reaction is approximately 7 times less than the reaction to the fired CEOs. The reaction also falls just short of statistical significance at the 10% level.

Figure 4.5 shows that, as expected, the companies where the CEO is headhunted outperform the market on average over the preceding four years. Interestingly, figure 4.5 also shows a decline in returns in the months prior to the CEO being poached. It is possible that this reflects some anticipation of the CEO being headhunted. In addition, the declining returns may reflect a reduction in effort and less concern for shareholder value if the

Figure 4.4: Market Reaction to the CEO Being Headhunted

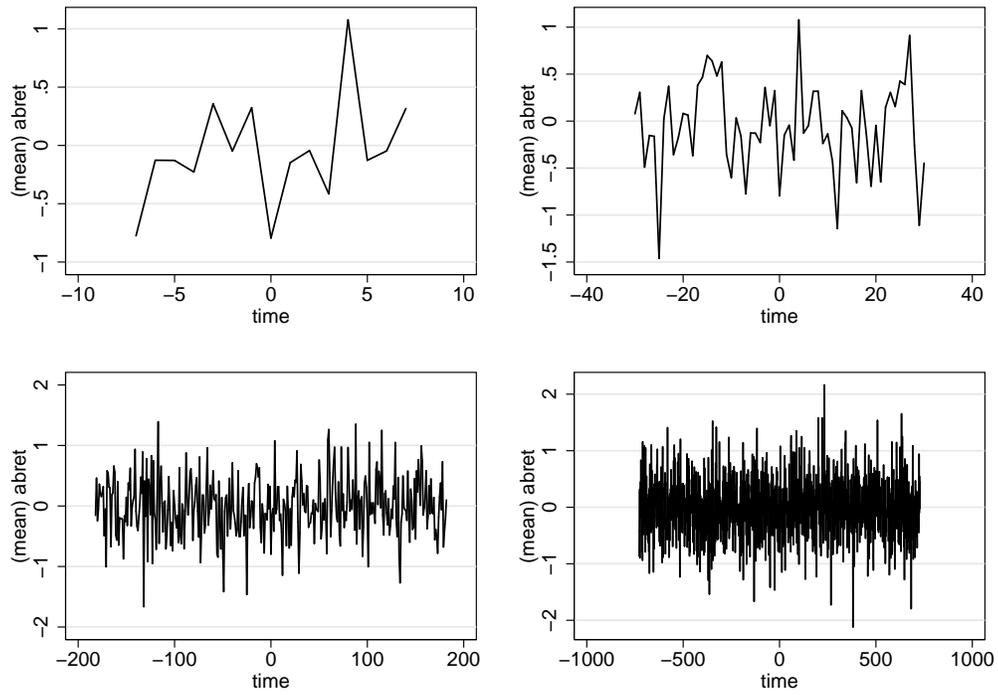


Figure 4.5: Headhunted vs Not Headhunted

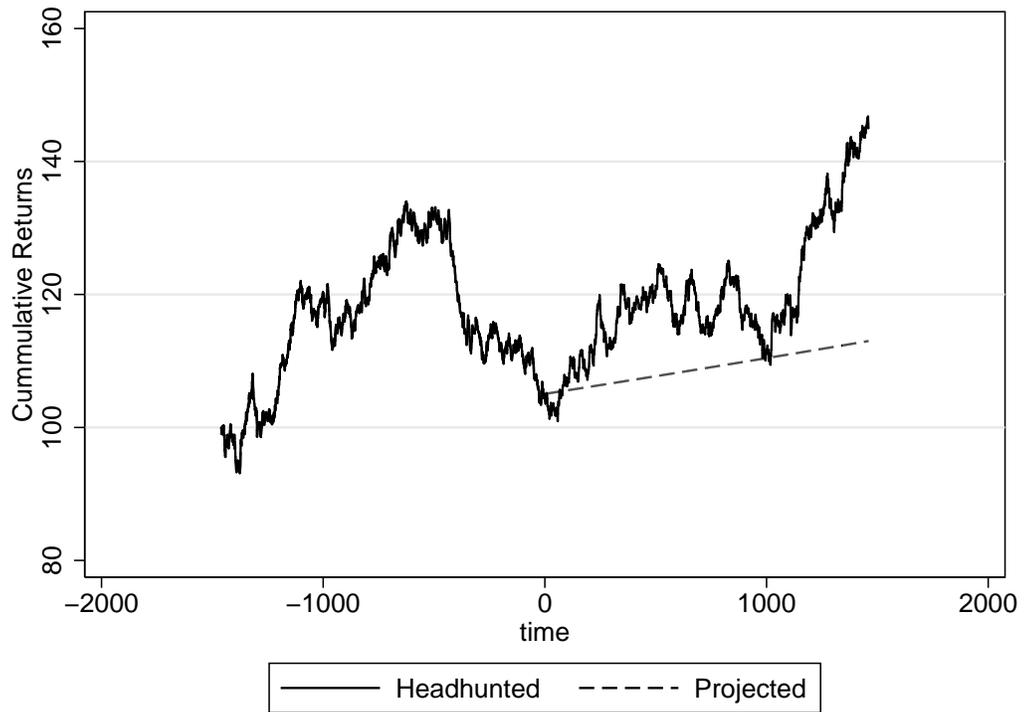


Table 4.12: Headhunted

	1	2	3	4	5
<i>Dummy Variables</i>					
Prior Week		-.025 (-1.13)	-.086 (-0.46)	-.066 (-0.36)	-.094 (-0.48)
Day of Announcement	-.705 (-1.51)	-.731 (-1.49)	-.791 (-1.63)	-.771 (-1.57)	-.799 (-1.54)
Following Week	.176 (0.76)	.150 (0.77)	.090 (0.49)	.071 (0.39)	.063 (0.32)
Following Two Years				.038 (1.48)	
Following Four Years					.018 (0.97)
Constant	-.089 (-0.54)	-.063 (-0.89)	-.003 (-0.12)	-.022 (-1.26)	.004 (0.37)
T	15	61	365	1457	2921
R-squared	20.21%	4.95%	0.85%	0.36%	0.13%

Daily abnormal return measured as a percentage.

CEO knows that he has a job secure at a better company¹⁹.

After the headhunted CEO has left the company, the company continues to perform well generating positive abnormal returns for shareholders on average, broadly in line with those that occurred under the prior administration. It would appear that a company who loses their CEO to another company is able to replace the CEO with somebody who is just as able to generate returns for shareholders. This is consistent with the scapegoat hypothesis, where there is no variation in competence and talent between CEOs. Indeed, given that the long term good performance of the company is largely unaffected by having the CEO headhunted, figure 4.5 may suggest that the underlying business model is the more important determinant of shareholder value than the individual CEO.

4.5.4 Market Reaction to CEOs Retirement

The four years prior to retirement generate on average positive market-adjusted returns. This is further evidence that retirements identified during the categorisation into different exit types are genuine retirements rather than forced early retirements. Other than the small negative reaction on the day of the announcement, a retirement doesn't appear to materially affect the future returns to shareholders. As with the headhunted CEOs, the company appears to be able to replace the retired CEO with somebody equally capable of

¹⁹For illustrative purposes, consider the poor performance of Dimitar Berbatov at Tottenham Hotspur Football Club immediately prior to his record breaking £30.75m transfer to Manchester United.

Figure 4.6: Market Reaction to the CEO Retiring

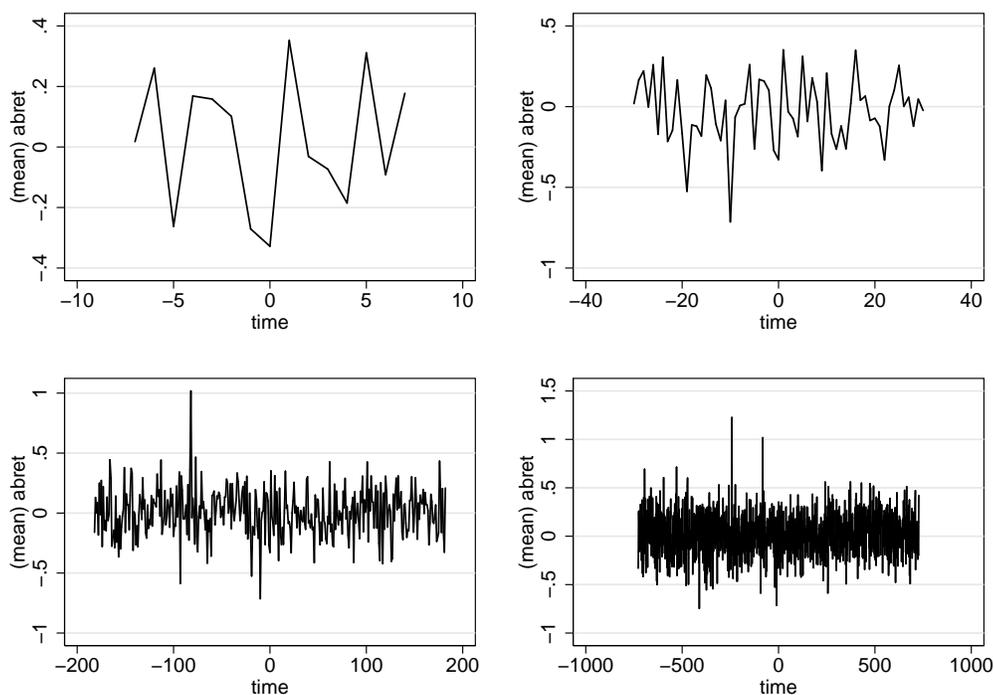


Figure 4.7: Retired vs Not Retired

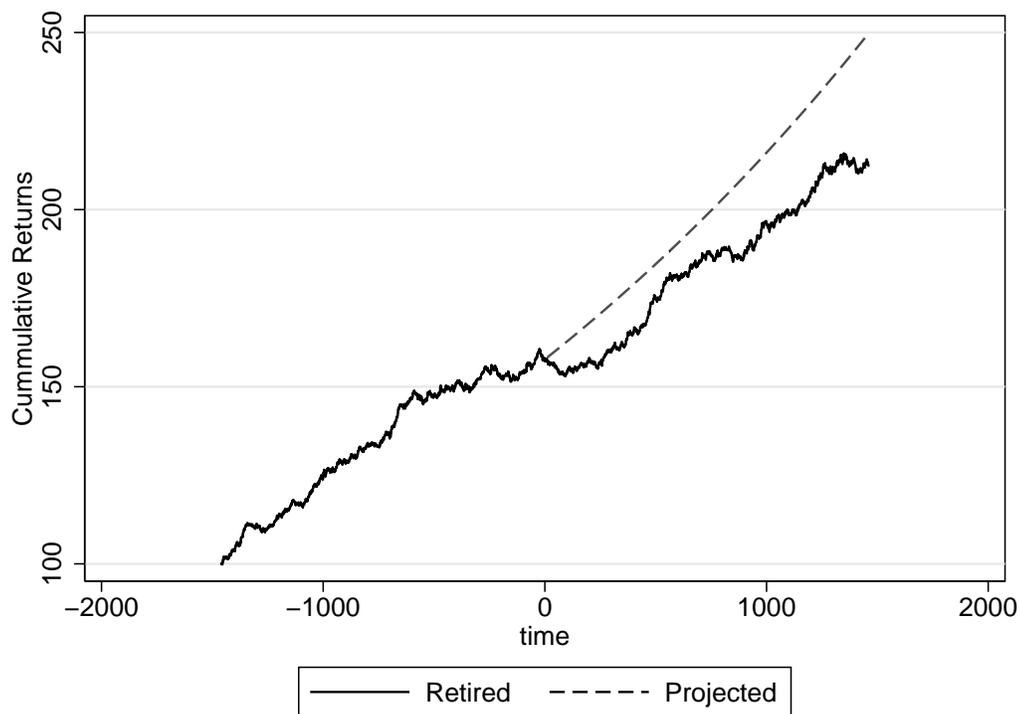


Table 4.13: Retireds

	1	2	3	4	5
<i>Dummy Variables</i>					
Prior Week		.068 (0.81)	.020 (0.27)	.003 (0.05)	-.006 (-0.08)
Day of Announcement	-.352 (-1.55)	-.283 (-1.33)	-.332* (-1.68)	-.348* (-1.66)	-.359* (-1.67)
Following Week	.040 (0.36)	.109 (1.28)	.061 (0.81)	.042 (0.53)	.045 (0.55)
Following Two Years				.002 (0.25)	
Following Four Years					-.010 (-1.36)
Constant	.024 (0.31)	-.044 (-1.42)	.004 (0.43)	.020*** (2.67)	.031*** (5.57)
T	15	61	365	1457	2921
R-squared	20.09%	6.72%	0.97%	0.22%	0.16%

Daily abnormal return measured as a percentage.

generating returns for shareholders. Moreover, the trend of returns is smoother during the transition from a retiring CEO to their successor. This likely reflects an awareness that the CEOs retirement date is approaching and hence the board is able to plan for a smooth succession thereby minimising the shock of retirement.

4.6 Conclusion

This chapter has examined the effect of shareholder voting on returns, earnings, executive pay and likelihood of CEO dismissal. For the first time, poll data from shareholder votes on proposals to approve the report and accounts, to approve the directors' remuneration report and to (re)elect the CEO have been examined. Voting turnout has increased from approximately 50% to 60% over the sample period. This is consistent with the uptake of best practice guidance (Hampel, 1998; Myners, 2001, 2004) which has encouraged increased levels of shareholder participation. Voting on the remuneration report consistently attracts the highest level of dissent from activists. Yet voting dissent appears largely inconsequential in terms of improving returns or earnings, reducing executive remuneration or increasing the likelihood of CEO exit.

In addition, the market's reaction to the removal of the CEO by pressure from shareholders has been considered. Unlike the decision to vote, the removal of the CEO appears to significantly affect the future direction of the firm. While the market initially reacts neg-

atively to the announcement of a CEO dismissal, the 16 months of declining returns that typically precedes a CEO's dismissal is, on average, turned around following the CEO's dismissal. In the parlance of shareholder activism, 'rocking the boat' by ousting the CEO appears to quickly steady the ship. However, whether or not, these gains represent an improvement above that expected under mean reversion is difficult to assess without creating a control group of companies that experienced 16 months of declining abnormal returns but did not replace the CEO. The identification of such a group would require a large expansion of the present sample but might be worthwhile for a future project. Further research is required to determine why a newly appointed CEO appears outperform the market in a company that was previously under-performing.

Therefore, while shareholder voting has a negligible impact on both returns and governance arrangements, substantial events, such as the dismissal of the CEO are significant. One interpretation could be that there is far more benefit for shareholders to pursue direct engagements with the board than casting votes at the AGM. This is perhaps not surprising given that if voting was sufficient for shareholders to optimise returns, then there would be little need for expensive resource-consuming direct engagements. Alternatively, it is possible that the absence of any positive effect from voting is a result that the behind the scenes engagements have already resolving the major issues of shareholder concern prior to the company meeting. As such, large levels of dissent are likely to be an indication of a fundamental breakdown in shareholder engagements, which adversely impacts on future returns.

Given the findings here, future research might focus on understanding the extent to which behind the scenes active shareholder engagements result in the tangible events such as CEO change that are more easily observable. Following single case studies such as Becht, Franks, Mayer, and Rossi (2008) it would be interesting to extend such work to understand shareholder interventions across wide sample of companies.

Appendix

4.A Proxy Poll Voting

Table 4.14 shows the resolutions to be voted upon at a typical FTSE 350 annual general meeting. The notice of meeting must be published at least 21 working days prior to the meeting. The annual report and accounts, notice of meeting and other meeting related documents are sent to every registered member of company. To count towards the poll result, votes by proxy must be cast at least 48 hours prior to the meeting.

Table 4.14: Tesco's 2007 AGM

<i>Resolution Text</i>	<i>Proposed By</i>	<i>Management Recommendation</i>	<i>For</i>	<i>Abstain</i>	<i>Against</i>
To adopt the report & accounts for the year ended 24 February 2007	Management	For	4,866,245,456 (99.59%)	8,722,259 (0.18%)	11,360,233 (0.23%)
To adopt the remuneration report for the year ended 24 February 2007	Management	For	4,458,755,571 (91.25%)	112,277,918 (2.30%)	315,436,845 (6.46%)
To declare a dividend	Management	For	4,885,598,517 (99.98%)	597,592 (0.01%)	275,902 (0.01%)
To re-elect as a director, E M Davies	Management	For	4,826,267,375 (98.78%)	1,402,926 (0.03%)	58,443,319 (1.20%)
To re-elect as a director, H Einsmann	Management	For	4,698,049,962 (96.14%)	123,238,775 (2.52%)	65,134,501 (1.33%)
To re-elect as a director, K Hydon	Management	For	4,857,133,391 (99.40%)	1,063,322 (0.02%)	28,192,076 (0.58%)
To re-elect as a director, D Potts	Management	For	4,760,466,612 (97.42%)	65,416,941 (1.34%)	60,410,641 (1.24%)
To re-elect as a director, D Reid	Management	For	4,797,400,863 (98.18%)	49,523,858 (1.01%)	39,464,751 (0.81%)
To re-elect as a director, Ms L Neville-Rolfe	Management	For	4,759,021,976 (97.40%)	66,180,692 (1.35%)	61,088,561 (1.25%)
To re-appoint as auditors, PricewaterhouseCoopers LLP	Management	For	4,782,333,987 (97.87%)	45,597,901 (0.93%)	58,456,692 (1.20%)
To authorise the directors to determine the auditor's remuneration	Management	For	4,802,604,283 (98.29%)	1,941,803 (0.04%)	81,702,338 (1.67%)
To approve a general authority to the directors to issue shares	Management	For	4,855,936,168 (99.38%)	2,464,036 (0.05%)	27,927,656 (0.57%)
To approve a general authority to the directors to dis-apply pre-emption rights on the issue of shares for cash	Management	For	4,863,173,551 (99.52%)	3,720,840 (0.08%)	19,518,303 (0.40%)
To allow the Company to make market purchases of its own shares	Management	For	4,882,367,704 (99.92%)	1,207,951 (0.02%)	2,771,393 (0.06%)
To authorise political donations by the Company	Management	For	4,604,255,925 (94.23%)	86,955,469 (1.78%)	195,086,645 (3.99%)
To authorise political donations by Tesco Stores Ltd	Management	For	4,604,053,313 (94.22%)	86,888,303 (1.78%)	195,291,777 (4.00%)
To adopt new Articles of Association	Management	For	4,872,280,122 (99.71%)	10,334,596 (0.21%)	3,644,941 (0.07%)
To adopt the Group New Business Incentive Plan 2007	Management	For	4,020,637,161 (82.29%)	76,794,337 (1.57%)	788,704,662 (16.14%)
To adopt the US Long-term Incentive Plan 2007	Management	For	4,546,767,893 (93.16%)	153,149,500 (3.14%)	180,901,293 (3.71%)
To amend the Performance Share Plan 2004	Management	For	4,293,775,917 (87.88%)	126,341,660 (2.59%)	466,098,999 (9.54%)
To adopt the Executive Incentive Plan	Management	For	4,611,362,185 (94.37%)	54,371,226 (1.11%)	220,523,917 (4.51%)
To adopt the International Bonus Plan	Management	For	4,785,658,243 (97.94%)	10,942,029 (0.22%)	89,572,877 (1.83%)
To take appropriate measures to ensure workers in its supplier factories are guaranteed decent working conditions, a living wage, job security, freedom of association and of collective bargaining including, where available, the right to join a trade union of their choice.	Shareholders	Against	405,669,462 (8.30%)	543,341,796 (11.12%)	3,936,607,050 (80.58%)

Executive Remuneration and Tournament Theory

‘Money was never a big motivation for me, except as a way to keep score. The real excitement is playing the game.’

Donald Trump, ‘Trump: The Art of the Deal’ (1987).

5.1 Introduction

Economists and management scholars have given plenty of attention to the pay of top executives in recent years. However, the majority of empirical work has focused solely upon the remuneration of the Chief Executive (CEO) or Highest Paid Director (HPD). This is understandable as the CEO is the natural starting point for any examination under an agency framework. Moreover, the level of disclosure from public companies and the subsequent availability of data, has, in the past, forced studies to restrict their investigation to the pay of the Chief Executive.

However, in UK law, there is no legal distinction between the directors of a public company. Although each director is employed under their own service contract, and the terms of the CEO’s contract will differ from the other executive directors, all directors bear an equal fiduciary duty to their shareholders. Therefore, provided sufficient data is available, then there is no reason for remuneration studies within the principal-agent framework to restrict their attention to the CEO. Indeed, since the widespread adoption of the Greenbury Report (1995) recommendations, disclosure of executive directors’ remuneration from

UK listed companies has improved markedly.

Numerous prior studies using US or UK data have examined how CEO pay varies against a vast number of individual and firm-level characteristics. Characteristics of particular relevance to this thesis have included: performance and firm size (Jensen and Murphy, 1990; Main, Bruce, and Buck, 1996; Hall and Liebman, 1998; Conyon and Murphy, 2000; Tosi, Werner, Katz, and Gomez-Mejia, 2000; Gregg, Jewell, and Tonks, 2005); non-executive director independence; (Benito and Conyon, 1999; Core, Holthausen, and Larcker, 1999; Conyon and He, 2004; Gregory-Smith, 2007), CEO turnover (Coughlan and Schmidt, 1985; Barro and Barro, 1990; Hambrick and Finkelstein, 1995; Harris and Helfat, 1997; Jenter and Kanaan, 2006) and shareholder activism (Karpoff, 2001; Black, 1998; Romano, 2001b).

An extension of such studies to the pay of the whole board would be interesting in its own right. For example, Bonet and Conyon (2005) using a sample of 504 companies listed on the London Stock Exchange, focus on the composition of the pay setting committee and its influence on the pay arrangements for all executive directors. Prior investigations (Conyon and Peck, 1998; Daily, Johnson, Ellstrand, and Dalton, 1998; Newman and Mozes, 1999) have provided mixed evidence as to whether the insider presence on the committee inflated the remuneration of the CEO. By extending the dependent variable to the remuneration of all executive directors and controlling for the position of CEO, Bonet and Conyon (2005) found a positive relationship between the number of insiders serving on the remuneration committee and total executive remuneration. However, the study was limited by the data available and as a result was unable to control for certain factors that might be believed to be important in the determination of pay (e.g. company performance and specific executive roles such as the Finance Director). In addition, the authors did not have access to time series information on remuneration committee independence, precluding the use of a fixed effects estimator. Consequently, Bonet and Conyon (2005) use a random effects estimator which assumes no selection issues in the data (directors with particular unobserved attributes do not select companies with particular unobserved attributes and vice versa). This might be problematic given that committee independence is correlated with company size which is an important determinant of executive pay. If the no sorting bias assumption does not hold then the reported estimates of an insider effect would be unreliable. Indeed, the analysis that this thesis presents in chapter 2 suggests that the relationship between pay and remuneration committee independence is very sensitive to the econometric specification employed.

An examination of the whole board's pay, offers some unique opportunities for research which a study that examines only CEO pay cannot investigate; for example, the distribution of pay within the executive management team. Commercial remuneration surveys typically present their statistics by the position of the executive on the board (MM & K Ltd, 2007) so that practitioners can review pay on a like-for-like basis. Bebchuk, Cremers, and Peyer (2007) have begun to formalise the distribution of pay within the board, distinguishing between the boards where the CEO is a 'dominant player' (receives a large proportion of the whole board's pay) as opposed to a 'team player' (pay is more evenly distributed between board members). Bebchuk, Cremers, and Peyer (2007) find that the pay slice given to CEOs of US public companies has been increasing over the last decade and has a relationship with a number of governance variables, including performance and CEO turnover. Specifically, the CEO's slice of board pay is inversely related both to the performance of the company as measured by Tobin's Q and the sensitivity of CEO turnover to performance but positively related to the CEO's entrenchment¹ and lack of a large outside shareholder (blockholder). This suggests dominant CEOs are more common when performance is poor and the conditions for entrenchment are favourable.

Furthermore, Ryan and Wiggins (2004) examine how the remuneration of board directors varies according to CEO entrenchment and power. They find that firms who have entrenched and powerful CEOs also have board directors who are paid less than average and are less likely to be paid in equity. If the level of equity is a proxy for the directors' incentives to monitor effectively, it follows that powerful and entrenched CEOs occur in firms where the incentives to monitor the CEO from the board are weak. These findings are also consistent with the rents capture narrative being advanced by Bebchuk and Fried (2003, 2004).

Another avenue of research that becomes possible with data on the whole board is an examination of tournament theory. Tournament theory proposes that agents give up some remuneration in order to participate in a promotions competition with the prospect of winning the prize if victorious (Lazear and Rosen, 1981). Agents experience an incentive to exert effort to win the prize with success or failure determined by one agent's performance relative to his competitors. In the context of a firm hierarchy, success at one level allows the individual to enter the next promotion competition. At the highest level, the CEO

¹Entrenchment is measured by board characteristics such as a CEO who also serves as Chairman and external indices which rate companies in terms of their provision for shareholder rights. These are Investor Responsibility Research Center's (IRRC) EIndex and the GIndex as used by Gompers, Ishii, and Metrick (2003).

will command a prize that reflects their ultimate victory; being in excess of their marginal product but still economically efficient (Main, O'Reilly, and Wade, 1993). The argument of efficiency is made on the grounds that the tournament is self-financing; the prospect of winning the inflated ultimate prize induces players to accept pay less than their own marginal product (Rosen, 1986). As such, tournament theory provides a conceptually simple justification for the very large pay of the CEOs relative to their subordinates².

However, a tournament reward structure may not always be economically efficient. Milgrom and Roberts (1988) and Lazear (1989) suggest that as only relative and not absolute performance determines success in a tournament, workers could engage in 'influence activities' or 'destructive strategies' to win promotion competitions. This could extend as far as active sabotage against competing players (Dye, 1984). Drago and Garvey (1998) find evidence that when large benefits from promotion are present, workers were less likely to co-operate with each other, share equipment or tools. Further, Dye (1984) and Baker, Jensen, and Murphy (1988) argue that promotion competitions could invoke the Peter Principle; i.e. promotion competitions may not be efficient if the new role requires different skills to that which determined the winner of the preceding competition. Consequently, firms may prefer a more compressed reward structure, with more workers earning closer to their marginal products at each level of the hierarchy.

Clearly then, there is a role for empirical research to determine the extent to which firms operate tournaments. Lazear and Rosen's (1981) model generates four propositions which have been subject to empirical examination (see table 5.1). First, a larger difference between winning pay and losing pay leads to larger effort; second the prize should be increasing in the number of participants, since an increase in the number of players leads to a fall in the probability of winning and hence a fall in the expected return to a marginal increase in effort. Third, remuneration is increasing in organisational level. A firm hierarchy should exhibit exponential growth in remuneration from one level to the next as entering the 'advancement opportunities' of the next promotion competition is less valuable than lower down in the organisation. At the highest level, the difference between winning and losing must compensate for the fact that there are no further advancement opportunities. Finally, where performance is luckier, or less controlled by the agent, the prize needs to be increased to induce the same level of effort.

Tournament theory has often been subject to empirical examination in sporting contexts such as golf, bowling and tennis tournaments (Ehrenberg and Bognanno, 1990; Abrevaya,

²The ratio of CEO pay to average pay is thought to currently be between 200:1 and 300:1 (Baker, 2008).

Table 5.1: Tournament Theory: Propositions and Evidence

Prop-osition	Study	Finding	Comment
1	Ehrenberg and Bognanno (1990)	Effort increasing in prize money to pro golfers.	Incentives matter. Closed-form competitors
	Becker and Huselid (1992)	Higher prizes lead to faster driving in NASCAR.	
	Knoeber and Thurman (1994)	Higher prizes for chicken farmers result in fatter chickens	
2	Main, O'Reilly, and Wade (1993)	Each extra competitor increases prize by 3%. 210 US companies (1980-84).	Support for tournaments but external hires cause problems of identifying the number of players
	Canyon, Peck, and Sadler (2001)	Extra competitor increases total prize by 3.5%. 100 UK companies (1997-98).	
	Eriksson (1999).	Each extra competitor increases prize by 1.8%. 111 Danish companies (1992-95).	
	Bognanno (2001)	Prize increasing in players 600 US firms (1981-1988)	
3	Lambert, Larcker, and Weigelt (1993)	Convex relationship found together with 'extraordinarily' large difference between CEO and next position 303 US companies (1982-84).	Consistent with tournament theory and employee sorting.
	Main, O'Reilly, and Wade (1993)	Increasing ratio of pay at the highest levels.	
	Eriksson (1999)	Hierarchical pay differentials generally consistent with tournament theory predictions, except no exponential hike for top position.	
	Canyon, Peck, and Sadler (2001)	Broad support for convex relationship.	
	Canyon and Sadler (2001)	Pay-performance sensitivity is convexly increasing with job level. 100 UK Companies (1997).	
	Bognanno (2001)	Support for convex relationship Convexity reduced if long pre-promotion tenure	
4	Eriksson (1999)	Riskier environment leads to modestly greater prizes.	Consistent with tournament theory and risk aversion.

2002; Sunde, 2003). This is due, at least in part, to a lack of sufficient data on ‘players’ in corporations. Evidence broadly consistent with tournament theory has been presented. Effort was seen to increase with the value of the prize, particularly when the field of players were of a similar calibre (see table 5.1). However, two caveats to these findings should be highlighted. The first, as noted by Prendergast (1999), is that a prize-effort correlation is evidence that incentives matter but not that reward structures have been designed to elicit the responses predicted by tournament theory. Secondly, these settings constitute a closed-form competition in which only players in the tournament can win the prize. In contrast, employees in corporations are free to move between companies and as such the prize of being CEO can be won by an individual who was not internal to the firm. Indeed, 43% of CEOs hired in our sample were not on the company’s board prior to their appointment.

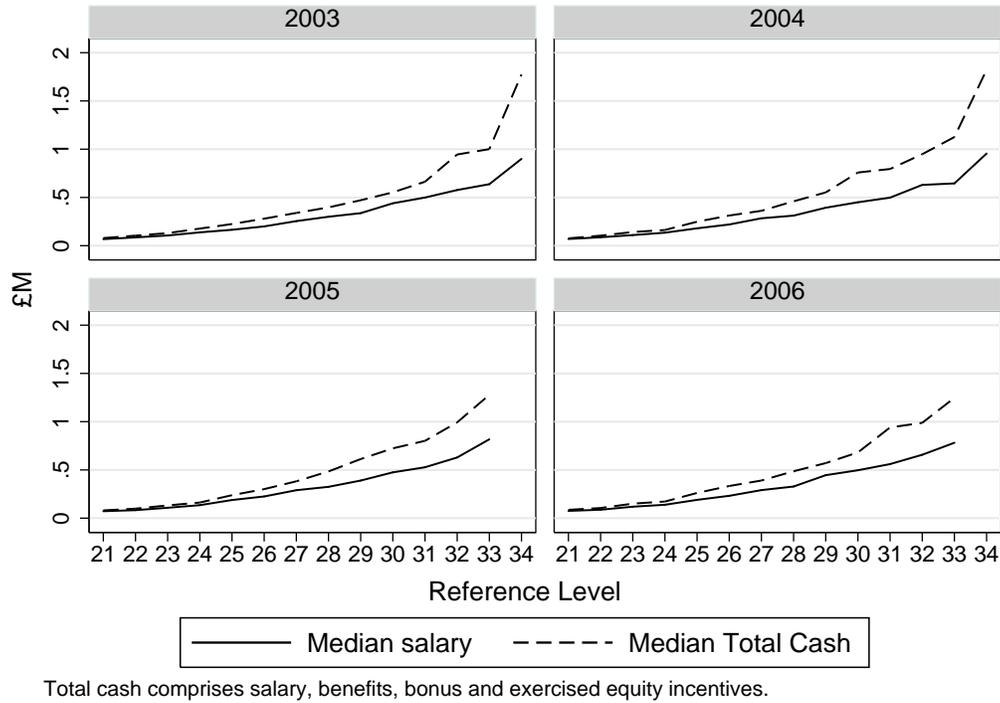
Moreover, Rees (1992) considers the time-frame over which the game is played. This may be important as, unlike a sports tournament, the rules at each level may change over the course of an employee’s career. Again, this might be a particular concern for our sample as a number of reforms in corporate governance and remuneration guidelines occurred. Rees (1992) also notes that the success of a manager in an organisation is also dependent on the effort of his subordinates, whereas the success in a golf tournament depends only of the performance of the player (and perhaps his caddie).

A few studies have data on individuals at different hierarchical levels within corporations. Of particular note in table 5.1 are the studies by Main, O’Reilly, and Wade (1993); Eriksson (1999) and Bognanno (2001). The strategy employed by these studies is to test several of the tournament theory propositions and in general they are supportive of the theory. Although each of the propositions in table 5.1 has an alternative non-tournament explanation³, support for a combination of the tournament propositions outlined above would be difficult to explain with a single alternative theory.

Main, O’Reilly, and Wade (1993), using panel data on US firms, found that the ratio of pay from one hierarchical level to the next increased in organisational level as envisaged by tournament theory. Consistent with this result, aggregated data on UK companies provided by Hay Group Inc, in figure 5.1, shows remuneration increasing exponentially through the job level. The levels are determined by Hay Group’s job evaluations which consider the job’s size, complexity and importance, prior to any assessment of individual

³For instance, Rosen (1986) advances a marginal productivity justification for the convexity of remuneration through job grades, on the reasonable assumption that the employee’s impact on value is exponentially greater at higher hierarchical levels.

Figure 5.1: Convexity of Remuneration Through Job Grades



performance. The reference levels have been used in discrimination court cases to determine equal pay for equal worth⁴. A CEO of a large international organisation will have a reference level towards the top end of the scale. A CEO of a smaller organisation and a senior executive of a larger organisation could have the same reference level. A lower level executive of a smaller company will be towards the beginning of the scale. Within a firm, a typical promotion is considered to be approximately 2 reference levels.

Main, O'Reilly, and Wade (1993) also found that the CEO prize is increasing in the number of vice presidents below the CEO. Here the prize is measured as the net present value of the pay differential over the whole of the expected CEO tenure. If one accepts that the number of vice presidents is a reasonable estimate of the number of players in the competition, this result is also consistent with the idea that the tournament is self-financing; i.e. as the chances of winning decrease, as estimated by the number of players, the prize should increase.

Eriksson (1999) finds broad support for the operation of tournaments using a panel of Danish firms, most of which are privately owned. Similarly to Main, O'Reilly, and Wade (1993) he finds a convexity of the reward structure through job grades and the prize in-

⁴See <http://www.haygroup.com/ww/services/index.aspx?ID=1529> for further details.

creasing in the number of players. In addition, he finds that prizes are higher in riskier environments, also consistent with tournament theory. Neither Eriksson (1999) nor Main, O'Reilly, and Wade (1993) consider the possibility that external hires might upset the operation of internal tournaments.

Bognanno (2001) is, perhaps, the most comprehensive test of tournament theory to date. Again, prizes are largely consistent with the convex structure predicted by tournaments and prizes are seen to increase in the number of participants. Yet Bognanno (2001) also found some anomalous evidence. For instance, the prize was not larger for promoted executives who had been in their prior position for longer. One might think this because the number of future promotion opportunities over the remainder of the executive's career will be less. Therefore, in order to adjust for the declining probability of success the prize must increase to maintain incentives. Moreover, the prize was decreasing in the square of the number of participants, albeit only nominally, suggesting that the overall response of the CEO prize was nearly linear in the number of participants. Nevertheless, the tournament model, under certain conditions, would have predicted a convex relationship between the prize and the number of participants rather than a linear one.

In addition, Bognanno (2001) considers the possibility that the winner of the tournament can be identified from their pay earlier in the contest. Indeed, Bognanno (2001) finds that the highest paid individual in the prior round is often the eventual winner. This is problematic for the operation of tournaments as if the winner can be predicted, then the incentive to compete is diminished.

Bognanno (2001) identifies the external hires in their dataset but only briefly considers how the presence of external hires might reduce the probability of winning for the tournament player. In this matter, Bognanno (2001) follows Chan (1996) who proposes that firms give preferential treatment to insiders to adjust for the reduced probability of winning if the firm hires from outside. This is preferred over the alternative of increasing the prize for insiders. The premise of a handicap is consistent with the frequency of external appointments in Bognanno (2001)'s data (only 17%) and the finding that new hires are paid 5% less after controlling for their individual characteristics (experience, education etc).

Most recently, Kale, Reis, and Venkateswaran (2007) proxy the extent of tournament style promotion incentives to the vice presidents (VPs) of US organisations by measuring the pay differential between the CEO and the VP and the likelihood of promotion. Kale, Reis, and Venkateswaran (2007) also compare the significance of these tournament incentives

against equity based performance incentives. Kale, Reis, and Venkateswaran (2007) find a positive correlation between performance and promotion incentives which increases when the CEO is close to retirement. The relationship is weakened when the firm has a new CEO hired from outside the firm and when the firm belongs to a homogenous industry.

5.1.1 Compensation to Tournament Losers

As tournaments are thought to be self-financing, executive directors should accept pay less than marginal product for the chance of winning the CEO prize. Therefore, following a rival's promotion to CEO, the existing executive directors might expect compensation to the level of their marginal product if it is understood they are either too old or unsuited to participate in the next succession competition.

However, there may be practical difficulties in compensating losing directors. It may simply be socially unacceptable to increase a director's remuneration just because a rival has been promoted. If losing directors, for whatever reason, are not compensated they will experience a strong financial incentive leave the company and earn their marginal product elsewhere or join a new competition in another company. Furthermore, it might also be expected that the loser compensation/exit effect will be stronger for older directors as such directors are less likely to be around for the next CEO succession competition.

The need to compensate directors for the loss in promotion incentives may be counter-balanced by a reduction in external employment opportunities for losing directors. Given that a CEO succession is a public event, the market may reassess the director's quality in light of the fact that a company has invested a significant amount of resources in holding a succession competition and concluded that somebody else is better suited to the position of CEO. Therefore, the very act of being passed over may reveal previously hidden adverse information to the market regarding the competence or suitability of the director for the position of CEO. If this hypothesis holds true, then losing directors who are not compensated would not face a strong financial incentive to leave. Indeed, if the reduction in external employment opportunities is sufficiently severe, the losing directors may even be less inclined to seek employment elsewhere as it is well known that companies do not cut director's salaries except in truly exceptional circumstances⁵. Thus, by remaining in their current position the director may, in fact, be receiving more than their market wage.

⁵Directors of failing companies have been known to on occasions to offered to 'share the pain' with investors by refusing bonuses or freezing salary.

Again, it is reasonable to assume that this effect may be increasing in the director's age as older losing directors have less time to acquire the missing skills and/or experience which would make them suitable for a CEO position.

The need to compensate losing directors may also be moderated if the director has made investments of firm-specific or job-specific capital. For example, the director may have spent time and effort developing non-transferable skills and gaining experience that is only relevant to their current post. This capital is lost if the director seeks employment elsewhere. This firm specific investment by the director should be reflected in their current wage and hence even if the director loses the value of promotion incentives he may still be best off remaining in his current role.

The idea that employees might be compensated for losing a tournament has significance for employment contracts in which the company commits to promoting or firing the employee after a specified period (Sattinger, 1993; Gibbons and Waldman, 1999). From a tournament theory perspective, 'up or out' contracts have the potential to increase employee effort as the differential in prizes is greater than under standard employment contracts⁶. However, up or out contracts may not be appropriate in certain situations, for instance where large investments in firm-specific human capital are required (Ghosh and Waldman, 2006). An employee will be less willing to make firm-specific investments if exit is a near possibility. If compensation is provided to the losers of promotion competitions then the incentive to make firm-specific investments is further increased at the expense of reducing the prize differential⁷. Yet reducing the prize differential may not necessarily reduce the incentives to exert effort. A literature has started to emerge that allows second prizes to elicit effort from competition participants (Moldovanu and Sela, 2001; Clark and Riis, 1998; Szymanski and Valletti, 2005). Indeed, Szymanski and Valletti (2005) show that second prizes can be effort increasing if there is a contest between more than two players, particularly if one player is very strong relative to the others. Weak players will not exert effort for a first prize they cannot win but they will try to win the second prize, possibly to the point where the strong player also increases effort to counter the pressure from the weaker contestants. It is easy to imagine such a scenario occurring during a boardroom succession competition.

⁶Up or out contracts have also been proposed as tools for solving employee allocation problems in the presence of imperfect information (Kahn and Huberman, 1988).

⁷A similar tradeoff exists when considering the extent to which contracts should provide for compensation following termination. Institutional guidance in the UK recommends that contracts provide for no more than 12 months' salary and benefits (Combined Code, 2003).

An analysis of the compensation to competition losers potentially solves problems that arise from the incidence of external appointments in an empirical test of tournament theory. As eluded to above, the possibility that the firm will award the prize of CEO to somebody outside the company reduces the probability of an internal player winning the tournament but to what extent is unclear. Even if one observes an internal appointment it is difficult to know whether or not external candidates were considered for the post. The history of the firm's appointments could be examined for the frequency of external hires in order to arrive at an estimated probability of external hire. However, this is less than satisfactory as the firm's policy could vary between appointments or change going forward, perhaps inspired by a move in market conditions or governance environment both of which changed significantly during the period under review.

Under a tournament model, one would not expect the compensation paid to the losers or their likelihood of exit to differ when the CEO is appointed from inside or external to the company's current board of directors. However, a desire to capture the board may prompt externally appointed CEOs to pay-off the incumbent directors or replace them with their own, more friendly, directors. An internally promoted CEO is likely to already have formed relationships with the other directors and might be less likely to replace the incumbents or compensate them. Moreover, according to the philosophy of the institutional best practice (Combined Code, 2003), a CEO with a board of independent directors will have less control of the pay-setting and nominations process. The composition of the board is not relevant to the tournament model but under a rents capture model the ability of the CEO to bribe or oust the directors should be correlated with the independence of the directors, if we believe that independence is important. Therefore, information on the board composition and the origin of the CEO will be useful when seeking to distinguish between competing hypotheses.

This chapter will investigate the extent to which tournament remuneration structures occur within FTSE 350 companies by examining four related propositions. First, the CEO's remuneration both in absolute levels and as a proportion of boardroom pay is sufficiently greater than the other executive directors such that CEO remuneration represents a prize. Second, executive directors who lose a CEO promotions competition and do not participate in the next competition will either i) receive compensation or ii) leave. Third, the first proposition will be stronger for older winners and the second proposition will be stronger for older losers as the likelihood of participating in the next competition will be correlated with age.

The first and second propositions are also consistent with a rents capture model, but the third proposition is not. In addition, under a rents capture model we would expect the first and second propositions to diminish with the proportion of independent directors on the board. A loss of external employment opportunities that may result from being passed over may dominate the effect of the second proposition and it is expected this counteracting effect will be increasing with the director's age.

Section 5.2 will provide some summary statistics relating to the distribution of executive directors' remuneration. Section 5.3 will test the propositions above before section 5.4 concludes.

5.2 Descriptive Statistics

Summary statistics pertaining to the remuneration of executive directors in our sample are provided in table 5.2. Remuneration was calculated on an annualised basis with the requirement that a director served at least three months of the financial year. Emoluments comprise salary, benefits, bonus and any cash received through the exercise of share options or the vesting of long term equity incentives. Total remuneration comprises salary, benefits, bonus and an estimated fair value of the grants of options and equity incentives received during the financial year⁸. CEOs receive approximately 65%, 69% and 75% more salary, emoluments and total remuneration respectively than executive directors at the median. Mean levels are greater than the median due to the presence of a small number of extremely large values. Moreover, the variance of emoluments and total remuneration is much greater than salary, indicating a wide spread of values in these measures.

Consistent with other remuneration surveys (Gregg, Jewell, and Tonks, 2005) both CEO and executive director remuneration is found to have increased significantly in real terms over the period. At the median, executive directors receive an annual increase in total remuneration of 8.14% after adjusting for inflation. If the director is promoted to CEO, they receive an average increment of 28.9% in the year of their promotion. Losers of CEO competitions receive a median increase of 8.31%, in the year of their defeat, which is not materially above the average executive director's increment. However, there is a greater variation in the loser increments, reflected in the larger mean increment and larger standard deviation. Therefore it is possible that some companies may be compensating

⁸To provide a workable estimate, these are approximated at one third of their face value (see chapter 2 for justification).

Table 5.2: Summary Statistics

	Median	Mean	Standard Deviation	Growth 1995-2005
<i>Chief Executives</i>				
Salary	346,000	390,000	225,000	52.9%
Emoluments	555,000	884,000	1,383,000	131.0%
Total Remuneration	615,000	918,000	1,342,000	166.1%
Total Remuneration Relative Pay Slice	1.37	1.41	.381	7.13%
Age	51	50	6.55	-0.06%
Annual Increment	10.9%	33.8%	410%	
Increment: Year of Win	28.9%	50.2%	77.3%	
Tenure (years)	6.35			
Tenure of winners	3.91			
<i>Executive Directors</i>				
Salary	210,000	240,000	148,000	47.2%
Emoluments	328,000	494,000	670,000	125.7%
Total Remuneration	351,000	512,000	744,000	152.0%
Total Remuneration Relative Pay Slice	.856	.894	.345	-8.62%
Age	50	49	7.09	0.12%
Annual Increment	8.14%	23.4%	176%	
Increment: Year of loss	8.31%	32.0%	319%	
Tenure (years)	4.98			
Loser tenure	5.95			
TSR	10.9%	8.13%	43.3%	96.0%
Sales	2.00m	411m	3,070m	79.4%
Pre-tax profits	50.9m	275m	1,160m	8.48%
N (director years)		22,600		
<i>No. Directors</i>				
Combined Chair&CEO		94		
CEOs		974		
Chairman		307		
Finance Directors		1,066		
Executive Directors		3,092		
Players		2,382		
Winners		234		
External CEO Hires		834		

1. May 2006 prices.

2. TSR growth represents accumulated return at the mean.

3. Tenure is the median survival times by position. Therefore, for promoted CEOs, time at the same company prior to their promotion to CEO is not included. However, loser tenure includes the time as an executive director prior to the succession defeat.

the losers of CEO competitions. Of course, annual increments will depend on several factors such as performance and market conditions. Therefore, section 5.3 will test the compensation hypothesis more formally.

In terms of tenure, CEO's who are promoted from within the company have shorter median survival times than externally hired CEOs⁹. This reflects the incidence of interim appointments whereby an existing director assumes the role of CEO on a temporary basis following the sudden departure of the prior CEO. In addition, contracts for external hires typically contain a greater emphasis on lock-in provisions such as long term equity incentives and retention bonuses on appointment. Internal CEOs will already have part-fulfilled the vesting conditions on their incentives and, if on a defined benefit pension scheme, will have built up more years of service so reducing the cost of retirement. Moreover, the Company is more likely to hire a specialist from outside the existing board when a major change in strategic direction is required. Such specialists enjoy a honeymoon period during which dismissal is very unlikely because all parties understand that it takes time before the merits of the CEO's new strategy can be assessed.

Directors' who experience a CEO succession defeat during their tenure have a longer average tenure than those who do not. At face value, this is the opposite of what is expected under the up or out model. However, the possibility remains that some CEOs leave quickly after defeat because those with longer tenures are more likely to experience a succession competition in the first instance. Therefore the exit hypothesis will be tested by adopting a duration analysis framework and examining the impact of a rival's succession upon the directors' hazard rate¹⁰.

5.2.1 Regression Estimates

Table 5.3 estimates the following remuneration equation in which there may be a firm specific effect γ_i and an individual specific effect δ_j .

$$(\text{Remuneration})_{ijt} = \gamma_i + \delta_j + \alpha_t + \beta(\text{Position})_{ijt} + \lambda(\text{Controls})_{ijt} + \mu_{ijt} \quad (5.2.1)$$

Remuneration is measured as logged levels of salary, emoluments and remuneration¹¹.

⁹Mean survival times cannot be reported with accuracy due to censoring.

¹⁰See chapter 3 for an explanation of duration analysis.

¹¹Please refer to chapter 2 for further details of the measurement of the dependent variable.

Table 5.3: Remuneration Levels

	OLS						Fixed Effects					
	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem
<i>Executive Position</i>												
CH&CEO	0.4282*** (7.72)	0.3857*** (4.79)	0.3662*** (4.47)	0.5014*** (9.78)	0.4862*** (5.91)	0.5452*** (6.57)	0.3865*** (5.01)	0.3114*** (3.34)	0.4886*** (5.96)	0.3866*** (5.00)	0.3038*** (2.84)	0.5073*** (5.81)
CEO	0.4554*** (21.97)	0.4704*** (16.84)	0.4772*** (16.90)	0.4732*** (26.10)	0.4872*** (18.80)	0.5179*** (20.19)	0.2763*** (14.83)	0.2707*** (9.15)	0.3434*** (11.80)	0.2766*** (14.26)	0.2861*** (9.45)	0.3582*** (11.64)
Chair	0.2519*** (6.03)	0.1684*** (3.35)	0.1263** (2.49)	0.2616*** (6.99)	0.2160*** (4.26)	0.2412*** (4.67)	0.1631*** (3.35)	0.0678 (0.82)	0.2274*** (3.01)	0.2126*** (4.26)	0.1632* (1.88)	0.3304*** (4.02)
FD	-0.0196 (-1.13)	-0.0601** (-2.60)	-0.0412* (-1.75)	0.0403** (2.74)	0.0001 (0.00)	0.0165 (0.77)	0.0129 (0.46)	0.0452 (1.03)	0.0752** (1.97)	0.0141 (0.49)	0.0544 (1.16)	0.0770* (1.89)
<i>Age Group</i>												
50-55				0.0757*** (5.88)	0.0555*** (2.96)	0.0554*** (2.94)				-0.0137 (-1.43)	-0.0053 (-0.27)	0.0079 (0.48)
55-60				0.0996*** (5.72)	0.0494** (1.92)	0.0186 (0.73)				-0.0448*** (-3.22)	-0.0496* (-1.68)	-0.0338 (-1.35)
60-65				0.1113*** (3.29)	0.0332 (0.69)	-0.0092 (-0.20)				-0.0880*** (-3.23)	-0.1261** (-2.55)	-0.1531*** (-3.65)
>65				-0.0209 (-0.28)	-0.1167 (-1.13)	-0.1822* (-1.95)				-0.2399*** (-4.62)	-0.3509*** (-3.76)	-0.3819*** (-4.96)
Tenure				0.0047 (1.37)	0.0212*** (4.76)	0.0010 (0.23)				0.1546* (1.76)	0.5509*** (3.68)	0.3443*** (3.06)
Tenure ²				0.0000 (-0.32)	-0.0005** (-2.77)	0.0000 (-0.08)				-0.0004** (-2.49)	-0.0009*** (-4.30)	-0.0005*** (-3.20)
<i>Largest Non-CEO Owner</i>												
0%-5%				0.0030 (0.94)	0.0033 (0.72)	-0.0016 (-0.37)				0.0005 (0.36)	-0.0007 (-0.24)	-0.0047* (-1.88)
5%-25%				-0.0057*** (-4.60)	-0.0064*** (-3.43)	-0.0042** (-2.27)				-0.0009* (-1.74)	-0.0018 (-1.51)	0.0009 (0.92)
>25%				-0.0054*** (-4.56)	-0.0065*** (-3.77)	-0.0072*** (-4.31)				-0.0001 (-0.18)	0.0003 (0.28)	0.0010 (0.88)
No. EDs				0.0102*** (2.98)	0.0117** (2.44)	0.0176*** (3.68)				0.0009 (0.49)	-0.0177*** (-3.78)	-0.0048 (-1.20)
No. NEDs				0.1035*** (34.52)	0.1392*** (31.07)	0.1474*** (31.54)				0.0053** (2.42)	0.0054 (1.04)	0.0047 (1.04)
% Independent NEDs				0.1987*** (9.24)	0.0939*** (2.87)	0.1276*** (4.00)				-0.0103 (-0.86)	0.0394 (1.51)	0.0164 (0.77)
Sales				0.0388*** (19.74)	0.0365*** (13.56)	0.0411*** (15.07)				0.0497*** (7.02)	0.0655*** (4.08)	0.0664*** (4.17)
TSR				-0.0212** (-2.69)	0.1900*** (12.05)	0.0880*** (6.49)				0.0032 (0.72)	0.1447*** (10.32)	0.0701*** (6.50)
N	21486	21595	21627	15671	15734	15742	21486	21595	21627	15671	15734	15742
Groups	5198	5226	5234	4067	4078	4078	5198	5226	5234	4067	4078	4078
R-Squared	17.06	15.14	17.74	44.40	34.36	38.99	48.74	29.21	32.66	51.99	30.28	35.87

1. Year dummies included.

2. Dependent Variables and Sales in logarithms.

In chapter 2 it was shown that whilst incorporating prior period pay as an explanatory variable was desirable in estimation of CEO pay, the model failed the diagnostic test for the validity of the instruments when applied to the remuneration of the whole board. Again, when estimating the equation 5.2.1, we experimented with the instrument set but were unable to find valid instruments for prior period pay. Therefore, we proceed in this chapter by using the most robust and valid estimation strategy available but we are unable to control for prior period pay.

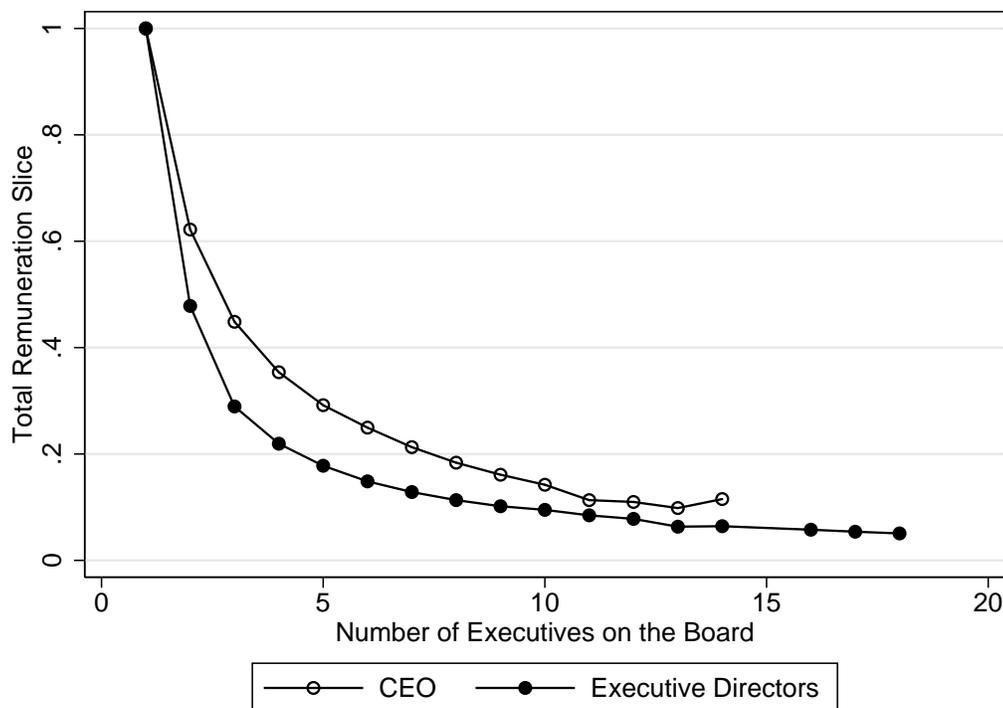
Executive Position represents four dummy variables: Chairman & CEO; CEO; Chairman; and Finance Director, with the base being the executive director. We control for age, tenure, outside equity, board composition, size and performance as measured by total shareholder return. As we will be interested in the interactions between age and other variables in this chapter, we use a series of age group dummy variables for greater flexibility. Also, following Bebchuk, Cremers, and Peyer (2007) we use a piecewise linear specification to capture the effect of the largest non-CEO shareholder, which we might expect to vary for different levels of equity.

If the director is the CEO, they earn around 50% more than executive directors *ceteris paribus*. Looking at the fixed effects results, if a director becomes CEO they earn around 30% more than they did as an executive director. If they become a combined Chairman and CEO they earn around 50% more in terms of total remuneration. Older directors generally receive greater salaries than their younger counterparts up to the age of 65, but this does not translate into greater levels of emoluments or total remuneration (holding tenure constant). At low levels, an increase in equity for the largest owner doesn't reduce director remuneration. However, beyond 5% an increase in the monitor's equity holding significantly reduces pay. Therefore, for monitoring to impact director remuneration, it appears that the monitor needs at least 5%. Here, monitors are defined as anybody other than the CEO¹².

The control variables for size and performance are consistent with results found in recent surveys (Bruce and Buck, 2005; Bonet and Conyon, 2005). A 1% increase in firm size, as measured by sales, leads to an increase in total remuneration of 4-6.5%. A 1% increase in total shareholder return leads to an increase in total remuneration of approximately 7%-8.8%. Salary is not positively correlated with performance. In fact, the OLS results

¹²Unfortunately, the identify of the monitor is not recorded, only that they are not the CEO. It is likely that different equity owners have varying impacts on governance and remuneration. An active investment fund may, for instance, be more vigilant at monitoring directors' remuneration than a trust fund controlled by members of the CEO's family.

Figure 5.2: Pay Slice by Number of Executives on the Board



suggest that increased salary may be a substitute for performance related remuneration. This accords with the claim that companies switch a greater proportion of the director's remuneration package to non-variable elements such as salary when performance conditions germane to incentive schemes are less likely to be satisfied. This may reflect an exercise of power and manipulation of the remuneration package by the directors themselves or an optimal response by the firm to retaining executive talent. A thorough exploration of this matter is not the focus of this chapter but is dealt in greater depth in chapter 2.

Remuneration is generally increasing in tenure, albeit the negative coefficient on tenure squared suggests that an additional year of tenure has a declining influence on remuneration as tenure increases. Our other control variables are consistent with standard results: remuneration is increasing in company size as measured by board size and sales; the independence of the non-executive directors does not reduce pay levels as found in chapter 2.

Table 5.4: Relative Pay Slice

	OLS						Fixed Effects					
	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem
<i>Executive Position</i>												
CH&CEO	0.5085*** (15.16)	0.4691*** (10.70)	0.4775*** (11.17)	0.4663*** (14.21)	0.4197*** (9.75)	0.4668*** (10.88)	0.3736*** (8.69)	0.3845*** (5.47)	0.4117*** (6.87)	0.3423*** (7.77)	0.3209*** (4.60)	0.4034*** (6.80)
CEO	0.4883*** (53.21)	0.5097*** (42.85)	0.5146*** (46.61)	0.4713*** (50.27)	0.4844*** (39.44)	0.5042*** (44.27)	0.3362*** (21.03)	0.3617*** (14.94)	0.3521*** (16.25)	0.3150*** (19.59)	0.3124*** (12.72)	0.3531*** (15.87)
Chair	0.2893*** (12.16)	0.2326*** (7.02)	0.2017*** (6.01)	0.2534*** (10.58)	0.1908*** (5.29)	0.2014*** (5.50)	0.1685*** (4.41)	0.1859*** (3.18)	0.1529*** (2.96)	0.1595*** (4.14)	0.1409** (2.38)	0.1848*** (3.58)
FD	-0.0223*** (-3.57)	-0.0423*** (-5.04)	-0.0328*** (-4.31)	-0.0194*** (-3.13)	-0.0368*** (-4.47)	-0.0326** (-4.25)	-0.0412** (-2.05)	-0.0909*** (-3.35)	-0.0263 (-1.10)	-0.0324* (-1.66)	-0.0733*** (-2.79)	-0.0254 (-1.07)
<i>Age Group</i>												
50-55				0.0242*** (3.89)	0.0326*** (3.70)	0.0261*** (3.23)				-0.0060 (-0.81)	0.0124 (1.04)	0.0176* (1.74)
55-60				0.0138 (1.58)	0.0217* (1.93)	-0.0040 (-0.38)				-0.0275** (-2.35)	0.0020 (0.11)	0.0008 (0.05)
60-65				0.0203 (0.99)	0.0164 (0.68)	-0.0250 (-1.07)				-0.0465* (-1.86)	-0.0262 (-0.78)	-0.0436 (-1.57)
>65				-0.1652*** (-4.38)	-0.1811*** (-3.93)	-0.2243*** (-5.22)				-0.1650*** (-2.98)	-0.1514** (-2.09)	-0.2074*** (-3.31)
Tenure				0.0069*** (3.78)	0.0134*** (6.02)	0.0023 (1.13)				0.0148*** (7.88)	0.0263*** (9.18)	0.0052** (2.12)
Tenure ²				0.0000 (-0.27)	-0.0002** (-2.09)	0.0001 (0.72)				-0.0005*** (-4.64)	-0.0008*** (-5.50)	-0.0004*** (-3.61)
N	21486	21595	21627	21098	21202	21234	21486	21595	21627	21098	21202	21234
Groups	5198	5226	5234	4936	4959	4967	5198	5226	5234	4936	4959	4967
R-Squared	37.35	21.86	26.18	39.41	23.90	27.49	37.08	21.36	25.98	35.04	21.38	22.58

1. T-stats in parentheses based on standard errors clustered around groups and robust to heteroscedasticity

5.2.2 Pay Slice

Following Bebchuk, Cremers, and Peyer (2007), this section presents data on the distribution of pay within the boardroom¹³. The pay slice of the each director relative to his colleagues is of interest in order to distinguish between movement in pay arising from changes to the budget for the whole board's remuneration from movement in individual pay arrangements. The pay slice is also of interest when considering the proportion of boardroom pay allocated to the CEO. High allocations of boardroom pay to the CEO could reflect the large contributions to productivity attributed to the CEO (the so-called 'star CEOs') or it may reflect dominance and an extraction of rents by the CEO. Alternatively, a high CEO pay slice might represent the prize for winning the promotions tournament.

Figure 5.2 shows the proportion of boardroom pay the CEO receives decreases exponentially with the number of executive directors on the board. Therefore, in order to present information that is comparable across boards of different sizes, the pay slice relative to board size will be used going forward¹⁴.

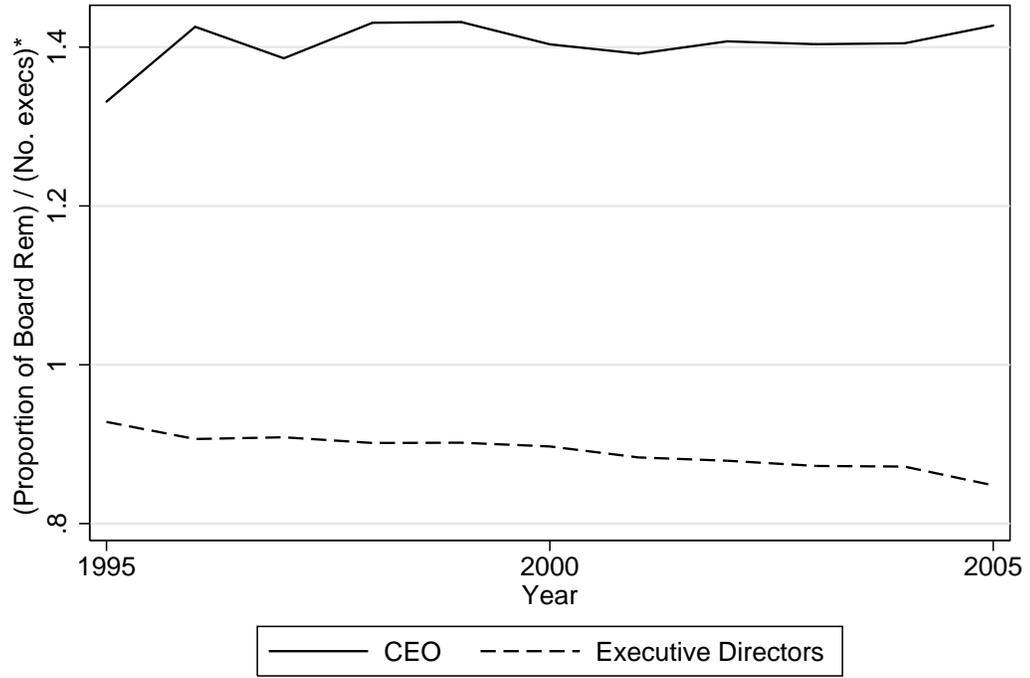
Figure 5.3 shows the movement in relative pay slices of CEOs and executive directors over the duration of the sample. The proportion of boardroom pay the CEO receives relative to the other executive directors is mostly stable with a slight increase at the beginning and ends of the sample period. The more demanding disclosure requirements and increased scrutiny from institutional investors of CEO pay has not compressed the pay distribution in the boardroom. If anything, consistent with the US market (Bebchuk, Cremers, and Peyer, 2007), the CEO's slice has increased. This is difficult to reconcile with a rents capture narrative unless one accepts that the reforming efforts of UK regulators have had, at best, no affect on CEO dominance and could even have served to enhance it. In terms of tournament theory, the movement in pay slice could be interpreted as a small increase in the prize differential.

Figure 5.4 and table 5.4 present the relative pay slice by role. Across all measures of remuneration, CEO's receive a substantially greater proportion of boardroom pay than executive directors. The combined Chairman and CEO role does not command a greater pay slice than just the single CEO role although executive chairmen do receive less, probably reflecting the presence of another lead executive on the board. Finance Directors

¹³Excluding non-executive director fees.

¹⁴i.e. For each executive director on the board, the pay slice is divided by the number of serving directors. A relative pay slice of 1 would be recorded for all directors if all members of the board were paid the same.

Figure 5.3: Relative Pay Slice by Year



*Relative Pay Slice. If =1, all directors paid equally

Figure 5.4: Relative Pay Slice by Position

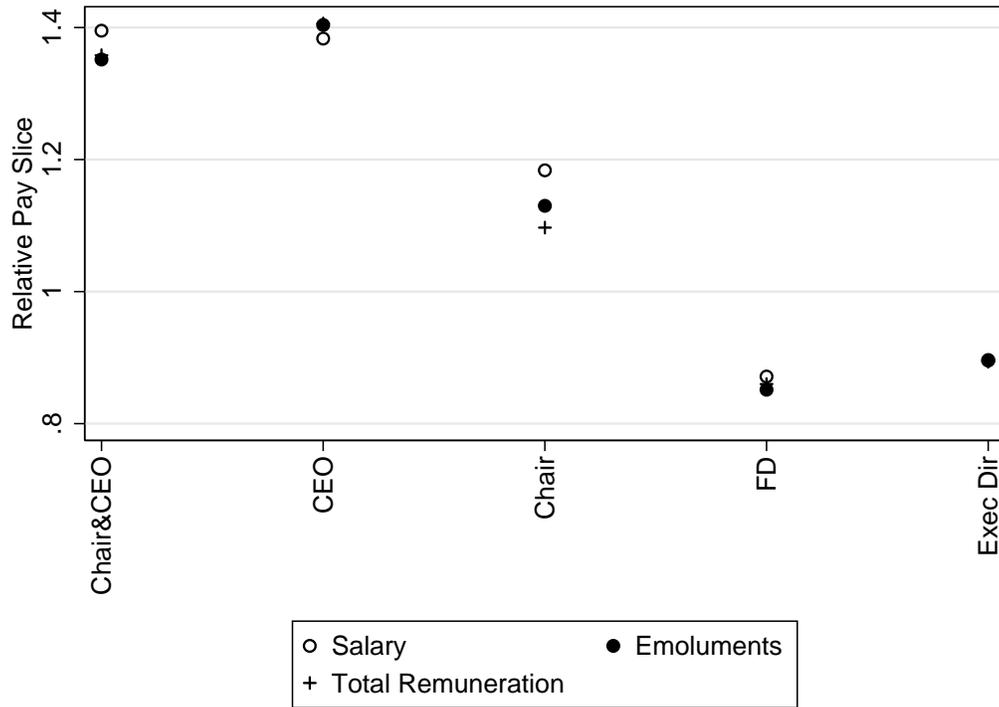
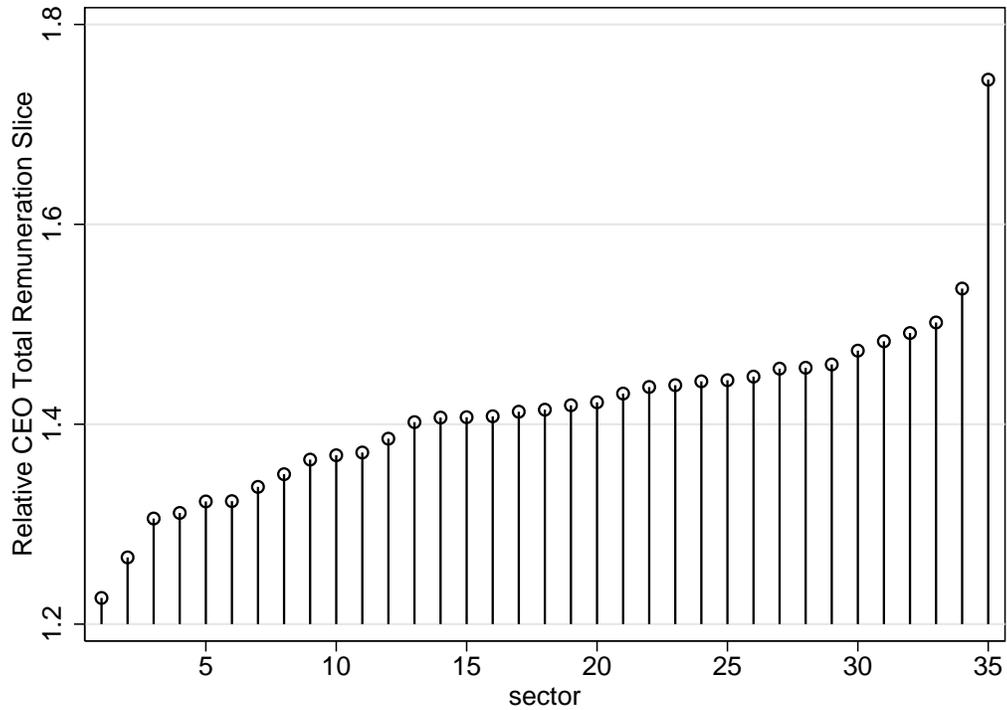


Figure 5.5: CEO Relative Pay Slice by Sector



receive a marginally smaller slice, on average, than other executive directors. This may be a reflection of the small number of times where the Finance Director is the only other executive director besides the CEO, whereas if there is an executive director it is more than likely that there will be a Finance Director as well. The variables for age group and tenure follow the same trend when explaining the pay slice that they do when explaining remuneration levels as in table 5.3.

There is not a large amount of variance in the proportion of boardroom pay the CEO commands between sectors. Aside from Health, Investment Companies and Forestry sectors, the median relative CEO pay slice is in the range 1.3-1.5. This is shown in figure 5.5 and table 5.5.

Table 5.6 shows the positions held by the winners of the CEO succession competition in our sample, prior to their promotion. A higher proportion of chairmen succeed in becoming chief executives compared to finance directors or executive directors.

Table 5.5: Sector Definitions for Figure 5.5

Sector	Definition	Relative CEO Total Rem Slice	Sector	Definition	Relative CEO Total Rem Slice
1	Health	1.23	19	Banks	1.42
2	Investment Companies	1.27	20	Speciality & Other Finance	1.42
3	Software & Computer Services	1.31	21	Mining	1.43
4	Electronic & Electrical Equipment	1.31	22	Engineering & Machinery	1.44
5	Steel & Other Metals	1.32	23	Telecommunication Services	1.44
6	Transport	1.32	24	General Retailers	1.44
7	Insurance	1.34	25	Tobacco	1.44
8	Utilities - Other	1.35	26	Leisure & Hotels	1.45
9	Support Services	1.36	27	Oil & Gas	1.46
10	Pharmaceuticals & Biotechnology	1.37	28	Electricity	1.46
11	Real Estate	1.37	29	Food Producers & Processors	1.46
12	Information Technology Hardware	1.39	30	Aerospace & Defence	1.47
13	Chemicals	1.40	31	Beverages	1.48
14	Food & Drug Retailers	1.41	32	Household Goods & Textiles	1.49
15	Personal Care & Household Products	1.41	33	Media & Entertainment	1.50
16	Construction & Building Materials	1.41	34	Automobiles & Parts	1.54
17	Unclassified	1.41	35	Forestry & Paper	1.74
18	Life Assurance	1.41			

Table 5.6: Positions Leading to CEO

	Chairman	Finance Director	Executive Director	Total
Players	163	660	1,559	2,382
Winners	23	44	167	234
Success Rate	14.10%	6.66%	10.71%	9.82%

Players are defined as directors who experience a succession event at some point during their tenure.

5.3 Executive Remuneration Analysis

Descriptive statistics have been presented on both executive directors' pay levels and directors' relative pay slices. The following section will examine the determinants of salary, emoluments and remuneration. Firstly, an examination of the remuneration to players of CEO succession competitions will be undertaken. This will be assessed in terms of logged compensation levels and relative pay slices. Secondly, the remuneration of all directors will be analysed, again using both logged levels and relative pay slices but splitting the sample between CEOs (both external hires and internal winners) and executive directors (players, losers and those directors who did not compete).

5.3.1 Compensation for Tournament Players

Table 5.7 seeks to explain the logged levels of salary, emoluments and total remuneration of players of CEO promotion tournaments. A director is considered a player if a CEO succession occurred during their tenure, whether or not the successful candidate was an external hire or an internal promotion. Consistent with proposition one, upon winning a competition, the player is paid a significantly greater amount across all measures of

compensation. Table 5.8 also shows that the pay slice to winners is significantly greater than the pay slice of players and losers. However, it is difficult to distinguish between the extent to which this increase reflects a prize for winning a promotion's tournament and the increase that arises from the new position's greater responsibility, status, and presumably higher marginal impact on firm productivity. Therefore, to test the theory of tournaments, the impact to an executive director's remuneration package when somebody else is appointed to the position of CEO will be examined. A model with the following form is used to test this loser compensation hypothesis:

$$Remuneration_{ijt} = \beta(Loser)_{ijt} + \gamma(Controls_{ijt}) + \mu_{ijt} \quad (5.3.1)$$

where individual j is a board member in firm i . *Loser* is a dummy variable that equals one if the individual j has been passed over for promotion in firm i . We estimate the dependent variable in logs so that a unit change in our regressors corresponds to a percentage change in remuneration. We consider the possibility that unobserved time-invariant heterogeneity between groups might be correlated with our regressors by estimating equation 5.3.1 using a fixed effect methodology.

Table 5.7 provides mixed evidence of the loser compensation hypothesis. The estimated coefficients using Ordinary Least Squares suggest that losers earn more than other players, particularly in terms of salary (7.5%). However, after controlling for both individual and firm fixed effects along with other control variables¹⁵, the impact of losing a CEO succession competition is insignificant in terms of salary and even negative in terms of emoluments and total remuneration. Further, the proportion of boardroom pay allocated to players does not appear to increase when a rival is promoted to the position of CEO. Indeed, players receive a smaller slice of boardroom pay upon losing a CEO succession competition in terms of total remuneration. This may, in part, reflect the increase in total board pay that arises during a succession year owing to the fact that two individuals in that year command CEO level compensation. The CEOs in these years may receive compensation for loss of office and/or recruitment incentives which would also reduce the relative pay slice of losers. Nevertheless, given that the impact on logged levels is also negative for the fixed effects results, it does not appear that losers of CEO competitions are being compensated.

¹⁵Prior to including age groups and year dummies in the regression, the estimated coefficients on the loser dummy variable were strong (0.16-0.32) and significant.

Lower levels of remuneration may result from losing a CEO tournament if being passed over sends a negative signal of the director's quality to the market for executive hires. Given that the appointment of the CEO is a public event, a succession defeat could reveal information regarding the suitability of the director for a top job, that was previously only known within the firm. Optimal contracting theory would expect this reduced demand to be reflected in the director's remuneration package. Therefore, it is possible that any loser compensation effect is being dominated by the reduction in external employment opportunities for the director.

Under a tournament compensation framework, those who have a longer wait for promotion should receive a greater prize (Gibbs, 1995; Bognanno, 2001). The longer the director serves without being promoted to CEO, the less likely it will be that they will become CEO as there are fewer succession opportunities for that director prior to his retirement. Indeed, no director over 65 is promoted to CEO in this sample. Therefore, in order to preserve incentives a longer wait ought to be accompanied by a larger prize. Table 5.7 shows that older winners do indeed receive a greater prize than younger winners, albeit the estimated coefficients are short of significance except for emoluments¹⁶. In terms of pay slice, the older age group coefficients are mostly positive but are again short of significance.

Older losers who presumably have less chance of participating in a future succession competition do not receive more compensation than younger losers. Indeed, tables 5.7 and 5.8 show they receive less. This is the opposite of what would be expected under the loser compensation hypothesis. Rather, this is consistent with the negative signal effect and the resulting reduction in employment opportunities which would be magnified for older losers.

5.3.2 Compensation for Directors

Chief Executives

Table 5.9 shows the impact various predictor variables upon CEO salary, emoluments and total remuneration, while table 5.10 examines the CEO's relative pay slices. Consistent with the standard literature on CEO compensation, internally hired CEOs receive less than externally hired CEOs. Hired CEOs may sacrifice firm-specific human capital for

¹⁶Emoluments will mechanically be higher for older directors as emoluments includes the exercise of stock options and vesting of equity incentives which require the satisfaction of certain criteria which often takes at least three years.

Table 5.7: Remuneration of Players

	OLS						Fixed Effects					
	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem
Winner	0.4596*** (8.46)	0.4396*** (6.77)	0.4498*** (6.05)	0.4365*** (9.95)	0.3870*** (7.13)	0.4588*** (7.51)	0.2463*** (10.69)	0.1703*** (4.03)	0.2169*** (5.27)	0.2402*** (10.18)	0.1803*** (4.17)	0.2332*** (5.51)
Loser	0.0761*** (4.12)	0.0564** (2.21)	0.0407 (1.56)	-0.0440 (-1.20)	-0.0697 (-1.36)	-0.0745 (-1.45)	0.0138* (1.93)	-0.0248* (-1.63)	-0.0057 (-0.43)	-0.0221 (-1.29)	-0.1149*** (-2.89)	-0.0966** (-2.73)
<i>Age Group</i>												
50-55	0.1588*** (6.98)	0.1570*** (5.21)	0.1418*** (4.54)	0.0382* (1.78)	0.0090 (0.30)	0.0144 (0.47)	-0.0201* (-1.78)	-0.0116 (-0.51)	0.0200 (0.99)	-0.0158 (-1.27)	-0.0048 (-0.18)	0.0037 (0.17)
55-60	0.2786*** (7.93)	0.2794*** (5.66)	0.2405*** (4.73)	0.1173*** (3.78)	0.0652 (1.29)	0.0487 (0.96)	-0.0319* (-1.64)	-0.0969** (-2.54)	-0.0149 (-0.45)	-0.0234 (-1.24)	-0.0995** (-2.38)	-0.0454 (-1.25)
60-65	0.2989*** (4.61)	0.3353*** (3.87)	0.2701*** (3.19)	0.2436*** (3.51)	0.2609** (2.71)	0.2383** (2.46)	-0.1336** (-2.54)	-0.2690*** (-3.77)	-0.1733** (-2.48)	-0.1040** (-1.97)	-0.2462*** (-2.92)	-0.2005** (-2.37)
>65	0.3627*** (3.32)	0.2889* (1.70)	0.1074 (0.72)	0.2843** (2.48)	0.2943 (1.54)	0.1044 (0.66)	-0.2469** (-2.78)	-0.4181*** (-3.27)	-0.3605*** (-3.79)	-0.1468* (-1.69)	-0.2670* (-1.73)	-0.2678** (-2.32)
<i>Winner*Age</i>												
50-55	0.0496 (0.68)	0.1259 (1.36)	0.1590 (1.51)	0.0097 (0.17)	0.0612 (0.84)	0.0601 (0.74)	-0.0084 (-0.30)	0.0548 (1.08)	0.0944** (2.11)	0.0081 (0.25)	0.0405 (0.76)	0.0856* (1.91)
55-60	-0.0664 (-0.72)	-0.0001 (0.00)	-0.0295 (-0.22)	-0.0779 (-1.07)	0.0097 (0.10)	-0.0294 (-0.27)	-0.0029 (-0.07)	0.1271* (1.89)	0.0989 (1.58)	0.0095 (0.22)	0.1421** (2.06)	0.1119* (1.74)
60-65	0.0575 (0.40)	0.1162 (0.58)	0.0256 (0.12)	-0.0495 (-0.38)	0.0400 (0.23)	-0.0843 (-0.45)	0.1125 (1.23)	0.2941** (2.38)	0.2249* (1.93)	0.1054 (1.05)	0.3043** (2.07)	0.2113 (1.54)
>65	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
<i>Loser*Age</i>												
50-55	-0.0555* (-1.94)	-0.0633* (-1.63)	-0.0670* (-1.65)	-0.0229 (-0.90)	-0.0401 (-1.08)	-0.0335 (-0.88)	-0.0426*** (-4.27)	-0.0580** (-2.67)	-0.0748*** (-3.88)	-0.0300** (-2.80)	-0.0317 (-1.22)	-0.0319 (-1.48)
55-60	-0.0513 (-1.29)	-0.0561 (-1.00)	-0.0652 (-1.14)	-0.0417 (-1.23)	-0.0471 (-0.89)	-0.0385 (-0.72)	-0.0647*** (-4.12)	-0.0259 (-0.87)	-0.0593** (-2.16)	-0.0467*** (-3.12)	0.0266 (0.77)	-0.0074 (-0.23)
60-65	-0.1132 (-1.54)	-0.1386 (-1.47)	-0.1837* (-1.93)	-0.1537** (-2.36)	-0.2011** (-2.30)	-0.2264** (-2.40)	-0.0184 (-0.55)	0.0145 (0.28)	-0.0326 (-0.58)	-0.0047 (-0.15)	0.0369 (0.63)	0.0419 (0.58)
>65	-0.2487** (-2.52)	-0.3039* (-1.76)	-0.2575 (-1.56)	-0.2597** (-3.22)	-0.3898** (-2.27)	-0.2773* (-1.87)	-0.2051*** (-2.94)	-0.3018** (-2.33)	-0.2964*** (-3.76)	-0.1278** (-2.35)	-0.2310 (-1.40)	-0.1947** (-2.16)
Tenure				0.0108** (2.52)	0.0282*** (4.77)	0.0066 (1.15)				0.1566* (1.64)	0.3796** (2.26)	0.3125** (2.30)
Tenure ²				-0.0001 (-0.83)	-0.0007** (-2.76)	-0.0001 (-0.55)				-0.0006*** (-3.55)	-0.0012*** (-4.24)	-0.0009*** (-3.75)
<i>Largest Non-CEO Owner</i>												
0%-5%				0.0045 (1.12)	0.0021 (0.38)	-0.0014 (-0.26)				0.0009 (0.60)	-0.0041 (-1.15)	-0.0057** (-2.00)
5%-25%				-0.0069*** (-4.16)	-0.0056** (-2.28)	-0.0040* (-1.66)				-0.0010 (-1.39)	-0.0011 (-0.70)	0.0015 (1.21)
>25%				-0.0021 (-1.03)	-0.0058** (-2.30)	-0.0063** (-2.66)				0.0003 (0.41)	0.0004 (0.26)	0.0020 (1.11)
No. EDs				0.0118** (2.76)	0.0029 (0.51)	0.0103* (1.79)				-0.0004 (-0.15)	-0.0169** (-2.97)	-0.0075* (-1.55)
No. NEDs				0.1031*** (25.42)	0.1413*** (23.97)	0.1502*** (24.11)				0.0054** (2.02)	0.0057 (0.89)	0.0028 (0.53)
% Independent NEDs				0.1122*** (3.39)	0.0455 (0.90)	0.0947* (1.88)				-0.0241 (-1.28)	-0.0163 (-0.44)	-0.0310 (-1.03)
% Ind NEDs*Loser				0.1063** (2.44)	0.1255** (1.97)	0.1268** (1.99)				0.0298 (1.41)	0.0981* (1.89)	0.0855** (1.98)
Sales				0.0371*** (14.08)	0.0366*** (10.39)	0.0407*** (11.15)				0.0406*** (4.98)	0.0697** (2.76)	0.0691** (2.77)
TSR				-0.0368*** (-3.81)	0.1844*** (8.96)	0.0796*** (4.39)				-0.0096** (-1.78)	0.1270*** (7.27)	0.0505*** (3.70)
N	11863	11903	11917	9272	9296	9301	11863	11903	11917	9272	9296	9301
Groups	2356	2360	2361	2088	2092	2093	2356	2360	2361	2088	2092	2093
R-Squared	15.29	15.45	16.79	42.16	35.24	39.39	51.74	34.22	37.63	55.27	34.61	40.79

Table 5.8: Pay Slice to Players

	OLS						Fixed Effects					
	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem
Winner	0.4444*** (24.94)	0.4849*** (22.38)	0.4638*** (23.03)	0.4121*** (21.17)	0.4321*** (17.53)	0.4304*** (17.21)	0.3579*** (17.01)	0.4111*** (14.90)	0.3714*** (14.11)	0.3074*** (13.63)	0.3216*** (9.38)	0.3107*** (9.71)
Loser	-0.0083 (-1.46)	0.0014 (0.18)	-0.0430*** (-6.26)	-0.0130* (-1.88)	-0.0034 (-0.34)	-0.0357*** (-4.13)	-0.0009 (-0.19)	0.0175** (2.34)	-0.0384*** (-5.44)	-0.0188*** (-3.11)	-0.0222** (-2.21)	-0.0497*** (-5.68)
<i>Age Group</i>												
50-55				0.0196** (1.90)	0.0273** (2.08)	0.0220* (1.75)				-0.0154* (-1.64)	0.0079 (0.51)	0.0080 (0.61)
55-60				0.0260* (1.60)	0.0361* (1.65)	0.0180 (0.89)				-0.0415** (-2.46)	-0.0368 (-1.45)	-0.0265 (-1.22)
60-65				0.1318** (2.77)	0.1322** (2.63)	0.0926* (1.79)				-0.0224 (-0.47)	-0.0446 (-0.77)	-0.0792 (-1.41)
>65				0.0830 (1.31)	0.0482 (0.58)	-0.0331 (-0.49)				-0.0156 (-0.21)	-0.0086 (-0.07)	-0.1117 (-1.30)
<i>Winner*Age</i>												
50-55				-0.0043 (-0.15)	-0.0016 (-0.04)	0.0366 (0.93)				0.0194 (0.65)	0.0166 (0.33)	0.0726 (1.80)
55-60				-0.0169 (-0.36)	0.0027 (0.05)	-0.0085 (-0.17)				0.0393 (0.87)	0.0719 (1.24)	0.0762 (1.39)
60-65				0.1042 (0.91)	0.1603 (1.27)	0.1016 (0.86)				0.1145 (0.88)	0.1656 (1.00)	0.1196 (0.78)
>65				(dropped)	(dropped)	(dropped)				(dropped)	(dropped)	(dropped)
<i>Loser*Age</i>												
50-55				-0.0359** (-2.82)	-0.0517*** (-3.02)	-0.0480*** (-3.06)				-0.0008 (-0.09)	-0.0197 (-1.25)	-0.0155 (-1.11)
55-60				-0.0342* (-1.83)	-0.0555** (-2.23)	-0.0352* (-1.55)				-0.0069 (-0.53)	0.0004 (0.02)	0.0079 (0.42)
60-65				-0.1051** (-2.18)	-0.1151** (-2.09)	-0.0895 (-1.46)				-0.0399 (-0.98)	-0.0437 (-0.83)	0.0162 (0.24)
>65				-0.1408** (-2.42)	-0.1456 (-1.47)	-0.1161 (-1.58)				-0.1480** (-2.72)	-0.1741 (-1.53)	-0.1321** (-2.16)
Tenure				0.0114*** (5.35)	0.0177*** (6.80)	0.0066*** (2.85)				0.0210*** (8.36)	0.0322*** (9.18)	0.0164*** (5.44)
Tenure ²				-0.0001 (-0.62)	-0.0003** (-2.35)	0.0000 (0.26)				-0.0008*** (-5.18)	-0.0010*** (-5.24)	-0.0007*** (-4.15)
N	11913	11953	11967	11863	11903	11917	11913	11953	11967	11863	11903	11917
Groups	2375	2379	2380	2356	2360	2361	2375	2379	2380	2356	2360	2361
R-Squared	13.58	8.31	10.35	19.94	12.4	12.43	13.56	8.24	10.35	15.70	8.41	8.08

1. T-stats in parentheses based on standard errors clustered around groups and robust to heteroscedasticity
 2. Dependent Variables and Sales in logarithms.

which they require compensation (Topel, 1991; Harris and Helfat, 1997) in addition to the physical costs of relocation (Hambrick and Finkelstein, 1995).

Consistent with Conyon (1997), the combined Chairman-CEO role is generally not associated with higher levels of remuneration compared to other CEOs. Although the sample is restricted to FTSE 350 companies, it is possible that this is picking up a size effect as smaller companies are more likely to have a combined Chairman-CEO role¹⁷. However, controlling for company size in the form of logged sales, together with other control variables and firm and individual fixed effects, a 10% combined Chairman-CEO salary premium is reported but there is no statistically significant premium in terms of emoluments or total remuneration. The Chairman-CEO salary premium is replicated in terms of the pay slice but combined Chairman-CEOs do not receive a greater proportion of boardroom emoluments or total remuneration.

Older internal promotees to CEO receive a greater remuneration and a greater slice of boardroom pay than younger promotees consistent with a tournament compensation structure. CEOs with large equity holdings do not appear use their control rights associated with equity to secure larger remuneration packages for themselves. If anything, equity appears to be a substitute for remuneration.

In order to maintain incentives, the tournament model predicts that the prize is increasing in the number of players. In terms of the pay slice, an increase in executive directors does increase the prize both in the OLS and the fixed effects regressions. However, in terms of remuneration levels, CEO salary, emoluments and total remuneration are not found to be increasing in the number of executive directors. However, as discussed above, due to the unknown number of external candidates, the true number of players may not be well defined by the number of executive directors.

Executive Directors

Table 5.12 examines the relative pay slice to all executive directors and table 5.11 the levels of remuneration. Prior to controlling for fixed effects and other control variables, directors who have been passed over for CEO do appear to earn more than other executive directors. However, after controlling for fixed effects and other control variables only the coefficient for salary is positive and only marginally significant. In terms of the pay slice, losers generally appear to earn less not more than other executive directors. As such

¹⁷Even within the FTSE350 there is significant variation in company size.

Table 5.9: Remuneration of Chief Executives

	OLS						Fixed Effects					
	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem
Chair & CEO	-0.0751 (-1.25)	-0.1242 (-1.49)	-0.1249 (-1.46)	0.0678 (1.38)	0.0488 (0.63)	0.0756 (0.97)	0.0537 (1.18)	-0.0869 (-0.78)	-0.0131 (-0.13)	0.0990* (1.85)	-0.0181 (-0.13)	0.0755 (0.66)
Internal	0.0775 (1.26)	0.0075 (0.10)	0.0165 (0.20)	-0.0132 (-0.28)	-0.1332** (-2.07)	-0.0822 (-1.20)	0.0522 (0.30)	-0.4317* (-1.76)	-0.2395 (-1.27)	-0.0999 (-0.94)	-0.6260** (-2.61)	-0.4327** (-2.31)
<i>Age Group</i>												
50-55	0.2443*** (7.02)	0.2272*** (4.73)	0.2102*** (4.34)	0.1146*** (3.72)	0.0574 (1.23)	0.0558 (1.24)	0.0234 (1.09)	0.0064 (0.14)	0.0194 (0.48)	0.0228 (0.87)	0.0146 (0.26)	0.0160 (0.37)
55-60	0.2962*** (7.29)	0.2869*** (4.99)	0.2082*** (3.62)	0.1020** (2.81)	0.0232 (0.41)	-0.0387 (-0.71)	-0.0209 (-0.73)	-0.0246 (-0.41)	-0.0557 (-1.04)	0.0027 (0.08)	0.0092 (0.13)	-0.0343 (-0.60)
60-65	0.1517** (2.03)	0.0273 (0.26)	-0.0377 (-0.38)	0.0822 (1.31)	-0.0609 (-0.58)	-0.1066 (-1.08)	-0.0865 (-1.95)	-0.1164* (-1.38)	-0.1728** (-2.36)	-0.0450 (-0.88)	-0.0371 (-0.82)	-0.1758** (-2.20)
>65	0.1789 (1.05)	0.3283 (1.15)	0.2819 (1.06)	-0.0163 (-0.13)	0.0774 (0.39)	0.1156 (0.64)	-0.1893 (-1.22)	-0.0897 (-0.27)	-0.2288 (-0.81)	-0.2802** (-2.04)	-0.2698 (-0.82)	-0.4441* (-1.59)
<i>Winner*Age</i>												
50-55	-0.0420 (-0.53)	0.0501 (0.49)	0.0846 (0.75)	-0.0910 (-1.52)	-0.0206 (-0.25)	-0.0131 (-0.15)	0.0020 (0.04)	0.0881 (1.08)	0.0702 (1.25)	0.0333 (0.56)	0.1004 (1.26)	0.1034 (1.79)
55-60	-0.0861 (-0.90)	-0.0057 (-0.05)	0.0044 (0.03)	-0.0674 (-0.95)	0.0472 (0.47)	0.0490 (0.47)	0.0833 (1.36)	0.1980* (1.84)	0.1896** (2.33)	0.0958 (1.43)	0.1956* (1.83)	0.1860** (2.16)
60-65	0.1973 (1.28)	0.4186* (1.93)	0.3188 (1.46)	0.0816 (0.63)	0.3326* (1.80)	0.2145 (1.14)	0.1004 (1.23)	0.3996** (2.34)	0.2969*** (2.92)	0.1123 (1.29)	0.3864** (2.01)	0.2657** (2.41)
>65	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
Tenure				-0.0060 (-1.13)	0.0056 (0.71)	-0.0109 (-1.35)				0.1587 (1.10)	0.5652 (1.36)	0.4564** (1.94)
Tenure ²				0.0003** (1.97)	0.0000 (-0.06)	0.0004 (1.40)				-0.0001 (-0.30)	-0.0001 (-0.31)	0.0003 (1.19)
<i>CEO Equity</i>												
0-3%				-0.1190*** (-6.04)	-0.0914** (-2.76)	-0.1110*** (-3.69)				-0.0076 (-0.53)	-0.0318 (-0.78)	-0.0032 (-0.14)
3-15%				0.0039 (0.40)	-0.0188 (-1.24)	-0.0111 (-0.75)				0.0104 (1.39)	0.0087 (0.65)	0.0048 (0.49)
>15%				0.0047 (1.28)	0.0112** (2.14)	0.0118** (2.20)				-0.0012 (-0.45)	-0.0008 (-0.23)	-0.0008 (-0.16)
<i>Large Non-CEO Owner</i>												
0-5%				0.0116 (1.45)	0.0106 (0.95)	0.0073 (0.66)				-0.0009 (-0.34)	-0.0048 (-0.60)	-0.0108* (-1.83)
5%-25%				-0.0066** (-2.59)	-0.0062 (-1.56)	-0.0040 (-1.02)				-0.0016 (-1.57)	-0.0002 (-0.06)	0.0027 (1.17)
>25%				-0.0016 (-0.66)	-0.0065* (-1.95)	-0.0083** (-2.65)				0.0018 (1.13)	0.0019 (0.51)	0.0010 (0.30)
No. EDs				0.0288*** (3.37)	0.0131 (1.09)	0.0209* (1.79)				0.0019 (0.41)	-0.0190* (-1.77)	-0.0043 (-0.49)
No. NEDs				0.1044*** (16.60)	0.1551*** (14.44)	0.1638*** (14.39)				0.0051 (1.05)	0.0086 (0.70)	0.0177* (1.80)
% Independent NEDs				0.1999*** (4.29)	0.1461** (2.18)	0.1384** (2.18)				-0.0008 (-0.03)	0.0522 (0.91)	0.0173 (0.42)
Sales				0.0399*** (9.38)	0.0406*** (6.69)	0.0442*** (7.33)			0.0756*** (4.71)	0.0743*** (2.85)	0.0839*** (3.48)	0.0839*** (3.48)
TSR				0.0187 (1.10)	0.2348*** (6.98)	0.1139*** (4.17)				0.0089 (1.01)	0.1367*** (4.72)	0.0714*** (3.17)
N	4374	4397	4407	3171	3186	3188	4374	4397	4407	3171	3186	3188
Groups	1086	1094	1097	877	880	880	1086	1094	1097	877	880	880
R-Squared	11.62	12.07	13.84	42.12	34.68	40.23	49.86	27.99	31.10	50.14	27.09	34.20

Table 5.10: Pay Slice to Chief Executives

	OLS						Fixed Effects					
	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem
Chair & CEO	-0.0129 (-0.38)	-0.0692 (-1.57)	-0.0451 (-1.07)	-0.0211 (-0.59)	-0.0730* (-1.63)	-0.0442 (-1.07)	0.0730 (1.31)	-0.0246 (-0.22)	-0.0442 (-0.49)	0.1524** (2.24)	0.0458 (0.33)	0.0376 (0.33)
Internal	-0.0227 (-0.96)	-0.0384 (-1.30)	-0.0527* (-1.80)	-0.0469* (-1.91)	-0.0808** (-2.40)	-0.0738** (-2.35)	-0.2632 (-1.57)	-0.3700** (-2.39)	-0.3647** (-2.27)	-0.2504 (-1.06)	-0.5380** (-2.59)	-0.3545* (-1.63)
<i>Age Group</i>												
50-55	0.0706*** (3.99)	0.0760*** (3.30)	0.0713*** (3.44)	0.0532** (2.61)	0.0494* (1.70)	0.0515** (2.11)	0.0153 (0.71)	0.0349 (1.08)	0.0318 (1.06)	0.0108 (0.43)	0.0087 (0.20)	0.0071 (0.21)
55-60	0.1065*** (5.37)	0.1126*** (4.44)	0.0585** (2.50)	0.0574** (2.72)	0.0555* (1.87)	0.0100 (0.40)	-0.0160 (-0.53)	0.0159 (0.34)	-0.0101 (-0.24)	-0.0186 (-0.58)	-0.0113 (-0.19)	-0.0211 (-0.45)
60-65	0.0853** (1.99)	0.0721 (1.36)	-0.0008 (-0.02)	0.0056 (0.13)	-0.0058 (-0.10)	-0.0725 (-1.29)	-0.0762 (-1.49)	-0.0739 (-1.00)	-0.1239** (-1.96)	-0.0274 (-0.51)	-0.0473 (-0.52)	-0.1271* (-1.80)
>65	0.0167 (0.20)	0.0739 (0.76)	0.0092 (0.09)	-0.0698 (-1.04)	-0.0152 (-0.17)	-0.0536 (-0.50)	-0.3360** (-1.98)	-0.3399* (-1.68)	-0.4591** (-2.50)	-0.1557* (-1.76)	-0.1846 (-1.02)	-0.3992*** (-3.27)
<i>Winner*Age</i>												
50-55	-0.0492 (-1.46)	-0.0433 (-0.89)	-0.0130 (-0.30)	-0.0567* (-1.64)	-0.0415 (-0.82)	-0.0316 (-0.71)	0.0129 (0.30)	-0.0301 (-0.35)	0.0384 (0.83)	0.0079 (0.18)	0.0365 (0.48)	0.0535 (1.08)
55-60	-0.0578 (-1.26)	-0.0270 (-0.50)	-0.0182 (-0.37)	-0.1005** (-2.52)	-0.0591 (-1.10)	-0.0522 (-1.08)	0.0873 (1.44)	0.0965 (0.89)	0.1393** (1.97)	0.0673 (1.09)	0.1465 (1.46)	0.1211* (1.67)
60-65	0.1949* (1.65)	0.2743** (2.10)	0.2220* (1.89)	0.1736 (1.31)	0.2550* (1.73)	0.1881 (1.42)	0.1298 (1.22)	0.2512 (1.49)	0.2210** (2.31)	0.1177 (1.33)	0.2989* (1.68)	0.1778* (1.68)
>65	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
Tenure				-0.0009 (-0.30)	0.0040 (0.74)	-0.0068 (-1.26)				0.0439 (0.34)	0.0092 (0.05)	-0.1065 (-0.73)
Tenure ²				0.0002** (1.99)	0.0001 (0.32)	0.0003 (1.40)				-0.0002 (-1.16)	-0.0002 (-0.49)	0.0002 (0.73)
<i>CEO Equity</i>												
0-3%				-0.0287** (-2.01)	-0.0397** (-2.03)	-0.0246 (-1.37)				-0.0236 (-1.42)	-0.0594*** (-2.89)	-0.0382** (-2.21)
3-15%				0.0019 (0.31)	-0.0029 (-0.40)	-0.0034 (-0.44)				0.0115* (1.64)	0.0133 (1.46)	0.0185** (2.40)
>15%				-0.0049** (-2.08)	-0.0037 (-1.18)	-0.0024 (-0.62)				-0.0047** (-2.58)	-0.0045 (-1.41)	-0.0097*** (-2.84)
<i>Largest Non-CEO Owner</i>												
0-5%				0.0055 (1.23)	0.0061 (0.92)	0.0087 (1.51)				0.0005 (0.15)	-0.0031 (-0.50)	-0.0028 (-0.62)
5%-25%				-0.0007 (-0.48)	-0.0010 (-0.47)	-0.0013 (-0.67)				-0.0002 (-0.15)	-0.0005 (-0.24)	0.0014 (0.70)
>25%				0.0006 (0.48)	0.0000 (-0.01)	-0.0015 (-0.74)				0.0009 (0.45)	0.0030 (1.15)	-0.0011 (-0.28)
No. EDs				0.0460*** (8.48)	0.0440*** (6.86)	0.0456*** (7.86)				0.0397*** (6.36)	0.0500*** (5.00)	0.0469*** (5.85)
No. NEDs				0.0050 (1.23)	0.0109* (1.77)	0.0124** (2.38)				-0.0128** (-2.26)	-0.0124 (-0.95)	-0.0090 (-1.08)
% Independent NEDs				0.0497 (1.55)	0.0457 (1.11)	0.0076 (0.21)				-0.0352 (-1.13)	0.0498 (0.81)	-0.0193 (-0.48)
Sales				0.0067*** (3.00)	0.0063** (2.09)	0.0035 (1.30)				-0.0019 (-0.14)	0.0246 (1.10)	0.0016 (0.09)
TSR				0.0125 (1.05)	0.0211 (1.22)	0.0267* (1.92)				0.0115 (1.17)	0.0088 (0.42)	0.0230* (1.61)
N	4374	4397	4407	3171	3186	3188	4374	4397	4407	3171	3186	3188
Groups	1086	1094	1097	877	880	880	1086	1094	1097	877	880	880
R-Squared	4.55	2.59	2.08	14.03	7.27	8.32	5.61	3.03	2.67	7.37	4.04	4.54

1. T-stats in parentheses based on standard errors clustered around groups and robust to heteroscedasticity
 2. Dependent Variables and Sales in logarithms.
 3. Year Dummies

the results appear to broadly favour the premise that reduced employment opportunities dominant the loser compensation effect.

5.3.3 Duration Analysis

The results in section 5.3.1 do not find categorical support for the loser compensation hypothesis. However, if social or other reasons prohibit the increased compensation of directors purely for being passed over for the top job, it may be more acceptable for all parties if the director leaves the company. Such an outcome remains consistent with the tournament model as the losing director, who previously accepted a remuneration package worth less than their marginal product in order to participate in the promotions tournament, will have a strong incentive to leave. Alternatively, if the loss of the CEO succession competition reduces the external employment opportunities, it may be that no compensation is necessary to retain the director, in which case the director has no financial incentive to leave.

This section will explore the director's likelihood of exit with particular regard to the effect of a CEO succession defeat. Consistent with the methodology of chapter 3, a semi-parametric duration analysis framework is employed to determine the likelihood of exit which will vary throughout the directors' tenure. Specifically, it will be interesting to understand how an executive director's hazard rate reacts to the succession of a rival. For the purposes of constructing the hazard, the failure event is considered to be the end of the executive directors' tenure as an executive director. As in chapter 3, directors who remain on the board at the end of 2005 are right censored. A promotion to CEO or change in the director's position does not constitute a failure event, provided the director continues as a full time executive at the same company.

Further to the descriptive statistics presented in section 5.2, figure 5.6 shows the hazard to any exit state for CEOs and executive directors in our sample. CEOs have a lower hazard throughout, reflecting their longer median tenures. The movement of the underlying likelihood of exit over the directors tenure is strikingly similar for CEOs and executive directors. Both groups experience a low initial hazard, identified as a the monitoring period in chapter 3, which rises until the 5th year and then levels off (declines for the CEO) before rising rapidly due to the increased frequency of retirements. The leveling off (or decline) in hazard after the fifth year of tenure was the subject of investigation in chapter 3 where two possible explanations for the observed phenomenon were offered. Firstly,

Table 5.11: Remuneration of Executive Directors

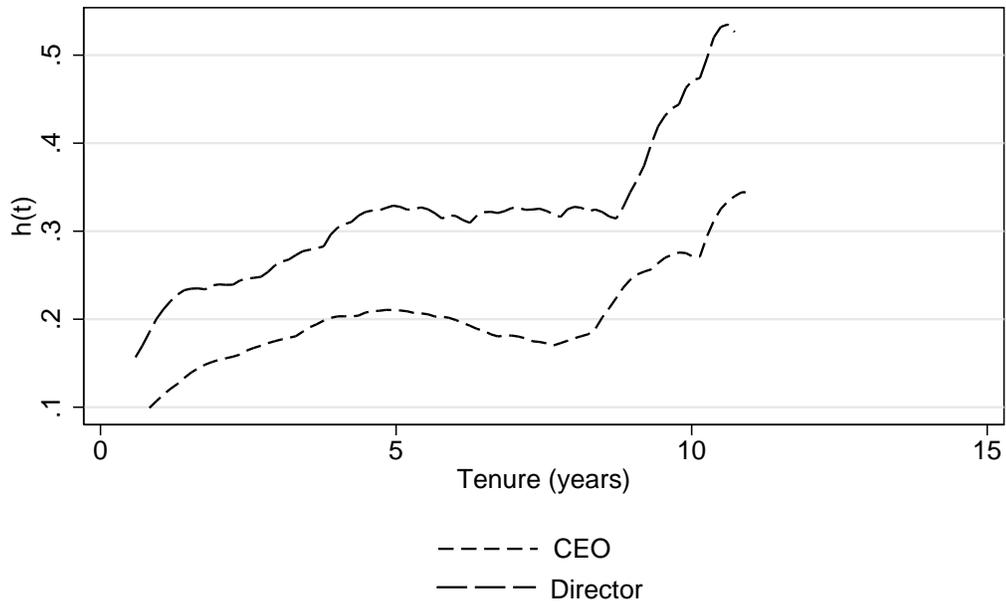
	OLS						Fixed Effects					
	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem
loser	0.0975*** (5.45)	0.0701*** (2.84)	0.0557** (2.21)	0.0477 (1.34)	-0.0356 (-0.70)	-0.0347 (-0.69)	0.0226*** (3.16)	-0.0125 (-0.82)	0.0201 (1.50)	-0.0193 (-1.20)	-0.1046** (-2.66)	-0.0693** (-1.99)
<i>Age Group</i>												
50-55	0.1591*** (9.04)	0.1875*** (7.97)	0.1547*** (6.50)	0.0704*** (4.25)	0.0713*** (2.92)	0.0651** (2.68)	-0.0131 (-1.42)	-0.0179 (-0.87)	0.0134 (0.74)	-0.0029 (-0.27)	0.0005 (0.02)	0.0019 (0.10)
55-60	0.2569*** (10.46)	0.2704*** (8.29)	0.2146*** (6.43)	0.0983*** (4.42)	0.0530 (1.58)	0.0281 (0.84)	-0.0434*** (-2.84)	-0.0719** (-2.16)	-0.0178 (-0.62)	-0.0236 (-1.47)	-0.0552 (-1.47)	-0.0376 (-1.21)
60-65	0.2781*** (6.84)	0.2343*** (4.31)	0.1551*** (2.93)	0.1381*** (3.29)	0.0519 (0.89)	0.0255 (0.45)	-0.1387*** (-4.24)	-0.230***5 (-4.40)	-0.1743*** (-3.70)	-0.0800** (-2.37)	-0.1814*** (-2.91)	-0.1932*** (-3.45)
>65	0.1696* (1.90)	0.0117 (0.11)	-0.0877 (-0.83)	-0.0022 (-0.03)	-0.1278 (-1.04)	-0.1998* (-1.84)	-0.2824*** (-4.80)	-0.4518*** (-5.14)	-0.3662*** (-5.18)	-0.1740*** (-2.90)	-0.3253*** (-3.07)	-0.3479*** (-4.33)
<i>Loser*Age</i>												
50-55	-0.0521* (-1.90)	-0.0898** (-2.39)	-0.0735* (-1.89)	-0.0513** (-2.17)	-0.1094*** (-3.08)	-0.0900** (-2.51)	-0.0452*** (-4.62)	-0.0503** (-2.30)	-0.0634*** (-3.23)	-0.0351*** (-3.29)	-0.0275 (-1.08)	-0.0193 (-0.91)
55-60	-0.0350 (-0.95)	-0.0554 (-1.10)	-0.0517 (-1.02)	-0.0398 (-1.31)	-0.0665 (-1.52)	-0.0542 (-1.24)	-0.0489*** (-3.51)	-0.0424 (-1.48)	-0.0517** (-1.99)	-0.0359** (-2.47)	0.0017 (0.05)	-0.0075 (-0.25)
60-65	-0.1012 (-1.43)	-0.0468 (-0.51)	-0.0825 (-0.89)	-0.1078* (-1.83)	-0.0631 (-0.80)	-0.0912 (-1.12)	-0.0227 (-0.78)	0.0058 (0.12)	-0.0206 (-0.40)	-0.0191 (-0.69)	0.0208 (0.38)	0.0477 (0.77)
>65	-0.0698 (-0.49)	-0.0524 (-0.29)	-0.0844 (-0.46)	-0.1466 (-1.26)	-0.1396 (-0.86)	-0.1533 (-1.04)	-0.1843*** (-3.02)	-0.2814** (-2.40)	-0.2865*** (-3.87)	-0.0843* (-1.72)	-0.1718 (-1.16)	-0.1345* (-1.88)
Chair				0.2540*** (6.69)	0.2021*** (3.94)	0.2270*** (4.36)			0.2185** (2.19)	0.3268** (2.39)	0.4761*** (3.54)	
FD				0.0335** (2.31)	-0.0038 (-0.18)	0.0134 (0.64)			0.0383 (1.01)	0.0919 (1.51)	0.1039** (1.97)	
Tenure				0.0082** (2.01)	0.0277*** (5.16)	0.0066 (1.32)			0.2417** (2.49)	0.5550*** (3.41)	0.3412** (2.63)	
Tenure ²				-0.0001 (-0.81)	-0.0007*** (-2.98)	-0.0002 (-0.77)			-0.0007*** (-4.87)	-0.0013*** (-4.94)	-0.0008*** (-3.93)	
<i>CEO Equity</i> 0-3%				-0.0954*** (-8.65)	-0.0771*** (-4.30)	-0.1182*** (-7.07)			0.0087 (1.45)	0.0329* (1.84)	0.0218* (1.84)	
3-15%				0.0083* (1.81)	-0.0058 (-0.77)	0.0009 (0.13)			-0.0028 (-0.93)	-0.0086 (-1.14)	-0.0128** (-2.20)	
>15%				0.0081*** (3.26)	0.0142*** (4.51)	0.0150*** (4.73)			0.0030** (2.16)	0.0049* (1.69)	0.0078*** (3.07)	
<i>Largest Non-CEO Owner</i> 0-5%				0.0054 (1.56)	0.0059 (1.19)	0.0017 (0.36)			0.0010 (0.67)	0.0007 (0.22)	-0.0042 (-1.61)	
5%-25%				-0.0049*** (-3.52)	-0.0057** (-2.74)	-0.0032 (-1.56)			-0.0008 (-1.34)	-0.0023* (-1.60)	0.0009 (0.83)	
>25%				-0.0068*** (-5.07)	-0.0077*** (-3.98)	-0.0084*** (-4.42)			-0.0005 (-0.92)	0.0003 (0.21)	0.0012 (0.93)	
No. EDs				0.0087** (2.43)	0.0120** (2.40)	0.0181*** (3.61)			-0.0002 (-0.09)	-0.0174*** (-3.38)	-0.0048 (-1.08)	
No. NEDs				0.0994*** (30.79)	0.1323*** (27.52)	0.1387*** (28.50)			0.0060** (2.63)	0.0050 (0.87)	0.0023 (0.46)	
% Independent NEDs				0.1787*** (6.65)	0.0538 (1.31)	0.0906** (2.27)			-0.0348** (-2.28)	-0.0186 (-0.59)	-0.0125 (-0.49)	
Ind NEDs*Loser				-0.0029 (-0.07)	0.0802 (1.28)	0.0802 (1.29)			0.0392** (2.00)	0.1078** (2.13)	0.0869** (2.07)	
Sales				0.0358*** (16.77)	0.0339*** (11.66)	0.0379*** (12.78)			0.0379*** (5.30)	0.0599*** (2.97)	0.0569*** (2.89)	
TSR				-0.0280*** (-3.15)	0.1795*** (9.87)	0.0847*** (5.31)			-0.0011 (-0.23)	0.1400*** (8.79)	0.0683*** (5.54)	
N	16724	16805	16827	12500	12548	12554	16724	16805	16827	12500	12548	12554
Groups	4258	4276	4282	3514	3523	3524	4258	4276	4282	3514	3523	3524
R-Squared	9.63	10.52	12.54	37.70	29.38	34.45	43.25	26.29	28.5	47.38	27.56	31.18

Table 5.12: Pay Slice to Executives

	OLS						Fixed Effects					
	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem	Sal	Emol	Rem
Loser	0.0048 (0.70)	0.0236** (2.19)	-0.0215** (-2.28)	-0.0020 (-0.10)	0.0190 (0.61)	-0.0276 (-0.95)	-0.0021 (-0.35)	-0.0028 (-0.27)	-0.0310*** (-3.47)	-0.0196 (-1.41)	-0.0233 (-0.81)	-0.0629** (-2.46)
<i>Age Group</i>												
50-55	0.0565*** (6.64)	0.0828*** (6.72)	0.0558*** (4.82)	0.0220** (2.51)	0.0501*** (3.49)	0.0319** (2.39)	-0.0051 (-0.61)	0.0171 (1.16)	0.0155 (1.30)	-0.0088 (-1.02)	0.0189 (1.05)	0.0110 (0.79)
55-60	0.0723*** (6.19)	0.0972*** (5.95)	0.0448*** (2.93)	-0.0055 (-0.44)	0.0253 (1.38)	-0.0144 (-0.84)	-0.0349** (-2.58)	-0.0069 (-0.29)	-0.0135 (-0.73)	-0.0280** (-2.16)	0.0108 (0.40)	-0.0143 (-0.70)
60-65	0.1427*** (5.14)	0.1383*** (4.38)	0.0676** (2.37)	0.0121 (0.42)	0.0048 (0.14)	-0.0339 (-1.05)	-0.0634** (-1.96)	-0.0340 (-0.77)	-0.0481 (-1.34)	-0.0216 (-0.94)	-0.0081 (-0.19)	-0.0583 (-1.35)
>65	0.0505 (0.92)	-0.0076 (-0.14)	-0.0676 (-1.26)	-0.1894*** (-3.60)	-0.2124*** (-3.31)	-0.2640*** (-5.04)	-0.1403** (-2.65)	-0.1418* (-1.82)	-0.1649** (-2.83)	-0.0676 (-1.26)	-0.0847 (-0.93)	-0.1628** (-2.49)
<i>Loser*Age</i>												
50-55	-0.0551*** (-4.54)	-0.0852*** (-4.88)	-0.0711*** (-4.51)	-0.0444*** (-3.71)	-0.0867*** (-4.30)	-0.0676*** (-3.70)	-0.0119 (-1.39)	-0.0302* (-1.92)	-0.0227* (-1.67)	-0.0049 (-0.53)	-0.0117 (-0.61)	-0.0055 (-0.34)
55-60	-0.0368** (-2.06)	-0.0657*** (-2.86)	-0.0332 (-1.57)	-0.0160 (-0.96)	-0.0556** (-2.21)	-0.0148 (-0.64)	-0.0183 (-1.51)	-0.0307 (-1.45)	-0.0048 (-0.27)	-0.0104 (-0.85)	-0.0054 (-0.22)	0.0160 (0.76)
60-65	-0.0578 (-1.43)	-0.0609 (-1.25)	-0.0206 (-0.38)	-0.0435 (-1.07)	-0.0474 (-1.00)	-0.0012 (-0.02)	-0.0347 (-1.01)	-0.0694 (-1.47)	-0.0142 (-0.24)	-0.0079 (-0.38)	-0.0265 (-0.62)	0.0594 (0.85)
65	0.0171 (0.22)	0.0156 (0.15)	0.0130 (0.15)	-0.0189 (-0.26)	-0.0264 (-0.24)	-0.0227 (-0.27)	-0.1646*** (-3.59)	-0.1794* (-1.90)	-0.1301** (-2.28)	-0.0609 (-1.50)	-0.0749 (-0.53)	-0.0221 (-0.33)
Chair				0.2538*** (9.40)	0.1830*** (4.04)	0.2099*** (4.53)				0.1447* (1.70)	0.2775** (2.19)	0.3041*** (2.96)
FD				-0.0071 (-1.01)	-0.0275** (-2.83)	-0.0180** (-2.02)				-0.0196 (-0.82)	-0.0331 (-1.10)	0.0053 (0.20)
Tenure				0.0097*** (3.62)	0.0184*** (5.77)	0.0062** (2.23)				0.0000 (0.00)	-0.0268 (-0.22)	-0.0002 (0.00)
Tenure ²				-0.0001 (-0.84)	-0.0003** (-2.30)	0.0000 (-0.30)				-0.0007*** (-7.33)	-0.0010*** (-5.03)	-0.0005*** (-3.57)
<i>CEO Equity</i>												
0-3%				-0.0025 (-0.40)	-0.0013 (-0.12)	-0.0042 (-0.49)				0.0007 (0.16)	0.0075 (0.73)	0.0147* (1.86)
3%-15%				0.0012 (0.44)	0.0042 (1.03)	0.0036 (1.01)				-0.0006 (-0.26)	0.0012 (0.23)	-0.0020 (-0.57)
>15%				0.0004 (0.22)	0.0000 (0.01)	0.0003 (0.14)				-0.0002 (-0.21)	0.0002 (0.09)	0.0009 (0.46)
<i>Largest Non-CEO Owner</i>												
0-5%				0.0005 (0.27)	-0.0003 (-0.10)	0.0003 (0.10)				0.0010 (0.84)	0.0025 (1.00)	0.0013 (0.75)
5-25%				-0.0005 (-0.82)	-0.0004 (-0.37)	-0.0007 (-0.74)				-0.0002 (-0.45)	-0.0009 (-0.97)	-0.0002 (-0.28)
>25%				0.0000 (0.03)	0.0006 (0.32)	0.0005 (0.26)				-0.0009 (-1.56)	0.0000 (-0.04)	0.0004 (0.45)
No. EDs				0.0087*** (4.24)	0.0082* (1.92)	0.0109** (2.61)				0.0082*** (4.69)	0.0086** (2.53)	0.0095*** (3.35)
No. NEDs				0.0003 (0.19)	-0.0004 (-0.12)	-0.0018 (-0.62)				-0.0030* (-1.63)	-0.0024 (-0.59)	-0.0051 (-1.57)
% Independent NEDs				-0.0237 (-1.54)	-0.0105 (-0.41)	-0.0188 (-0.77)				-0.0251** (-2.06)	-0.0210 (-0.96)	-0.0408** (-2.30)
Ind NEDs * Loser				-0.0046 (-0.19)	-0.0077 (-0.19)	0.0100 (0.26)				0.0093 (0.55)	-0.0016 (-0.04)	0.0298 (0.92)
Sales				-0.0018 (-1.47)	-0.0013 (-0.76)	-0.0007 (-0.45)				-0.0208*** (-4.14)	-0.0139 (-1.55)	-0.0214*** (-2.90)
TSR				-0.0089 (-1.55)	-0.0129 (-1.36)	-0.0068 (-0.81)				-0.0102*** (-2.62)	-0.0160 (-1.56)	-0.0071 (-0.98)
N	16724	16805	16827	12500	12548	12554	16724	16805	16827	12500	12548	12554
Groups	4258	4276	4282	3514	3523	3524	4258	4276	4282	3514	3523	3524
R-Squared	2.46	1.55	1.25	13.73	6.51	5.51	2.48	1.63	0.96	4.5	3.03	2.16

1. T-stats in parentheses based on standard errors clustered around groups and robust to heteroscedasticity
 2. Dependent Variables and Sales in logarithms.
 3. Year Dummies Included.

Figure 5.6: Hazard to Any Exit



by year five, shareholders have acquired sufficient information as to the competence of the CEO to be willing to stick with them even if performance is mediocre. Secondly, a reduction in the hazard after year five may be the end result of actions taken by the CEO designed to entrench themselves in their position. The results of chapter 3, albeit not entirely conclusive, favoured the entrenchment hypothesis. The evidence presented here, that the CEO's hazard declines but the executive director's hazard does not, may also be suggestive of CEO entrenchment. The CEO is better positioned to capture the nominations process than executive directors, whereas one would presume that a performance revelation effect would apply to CEOs and executive directors alike.

Figure 5.7 shows the impact of winning or losing a CEO succession competition¹⁸. Unsurprisingly winning a succession competition reduces the hazard of exit. However, being passed over for promotion is associated with a dramatic increase in the hazard, particularly if the defeat occurs during the early years of their tenure. Such a pattern is consistent with the 'up or out' employment model. Upon experiencing a succession defeat, it appears a significant number of directors are either persuaded to leave or are unwilling to wait around for the next succession competition and immediately seek employment else-

¹⁸An executive director is identified as a winner or loser once the succession is announced. Prior to this or if no succession competition took place then both loser and winner variables will equal zero.

Figure 5.7: Hazard to Any Exit



where. If the loss occurs after the fifth year of the director's tenure, then the effect reduces. It is possible that directors who have had a longer wait and then are passed over send a stronger signal about their suitability for a top job. In which case, these directors may have less external promotion opportunities and are consequently more willing to stay on as executive directors. It is also possible that these directors have built up more equity incentives with vesting conditions during their tenure and are therefore less inclined to leave until they have satisfied their vesting conditions and realised their equity.

Table 5.13 describes the results of a Cox (1972) regression for all executive directors. It shows the significance of the executive's position in the determination of the likelihood of exit. Against the base of the executive director, CEOs, chairmen and finance directors all experience lower hazards. Combined Chairman & CEOs experience the lowest hazard rates, less than half the likelihood of exit than executive directors. Older directors generally experience larger hazard rates than younger directors, albeit directors over 65 do not have higher hazards than directors 60-65. In addition, directors of smaller companies within the FTSE 350 and better performing companies are shown to have lower hazard rates.

The blockholder variable marginally increases the hazard at levels of blockholder equity

between 5% and 25%. Nevertheless, the monitoring effect measured by this variable is not as strong as expected. A stronger effect might be captured if the identity of the blockholder was able to be determined as different types of owners might well use their control rights in very different ways (E.g. a venture capitalist may be a more vigilant monitor than a trust fund controlled by the CEO's family). Unfortunately, this information is not available without considerable further research.

Directors with a small number of rivals, as measured by the number of executive directors serving on the board, have significantly lower hazard rates. The number of non-executive directors marginally increases the hazard. However, the independence of non-executive directors is largely inconsequential which, again, is surprising given the importance attributed to the independence of directors both in the academic literature (Bebchuk and Fried, 2004) and the reform of best practice (Combined Code, 2003).

Although the difference in quartiles is not as large as in chapter 3, the hazard responds to relative performance as measured by annual FTSE 350 TSR quartiles. Here, the move out of the bottom quartile causes the most significant reduction in the hazard but there is no reduction in hazard from moving from the second to the top quartile. The weaker effect can be attributed to the hazard comprising all exit states, some of which would become more likely following good performance (e.g. headhunted). It is also possible that a CEO, being the agent most responsible for delivering shareholder value, is judged on TSR performance to a greater extent than his executive subordinates, who are more likely assessed on operating or divisional performance.

Impact of CEO Succession

In order to explore the impact of CEO succession competitions on the likelihood of exit, tables 5.14 and 5.15 split the sample into executive directors (including finance directors and chairman) and CEOs. For the purposes of constructing the failure event for executive directors any director promoted to CEO is considered to be right censored, otherwise the failure event occurs when they are no longer serving on the board.

Table 5.14 confirms the graphical analysis of figure 5.7 that when a rival is promoted to the position of CEO a dramatic increase in the likelihood of exit occurs. The interaction with age and the loser variable are interesting. It appears that older losers are less at risk of exit than younger losers. If age was a good proxy for the probability that the CEO would be around for the next succession round we would expect older directors to be

Table 5.13: Hazard to Any Exit - All Positions

	<i>1</i>		<i>2</i>	
<i>Position</i>				
Chairman & CEO	0.510***	(-4.93)	0.499***	(-4.68)
CEO	0.647***	(-9.01)	0.604***	(-9.06)
Chairman	0.693***	(-5.10)	0.642***	(-5.29)
Finance Director	0.778***	(-7.25)	0.667***	(-7.80)
<i>Age Group</i>				
50-55	1.061	(1.37)	1.044	(0.93)
55-60	1.547***	(10.20)	1.509***	(8.67)
60-65	2.369***	(13.63)	2.364***	(11.82)
>65	1.801***	(4.96)	1.890***	(4.44)
<i>Largest Non-CEO Owner</i>				
0%-5%			0.992	(-0.65)
5%-25%			1.006*	(1.66)
>25%			1.001	(0.25)
No. EDs			0.840***	(-14.48)
No. NEDs			1.022**	(2.06)
% Independent NEDs			1.015	(0.19)
lnsales			1.125***	(20.98)
<i>Total Shareholder Return</i>				
LQ-Median			0.769***	(-5.78)
Median-UQ			0.656***	(-8.77)
UQ			0.675***	(-8.00)
N	21451		15950	
No Directors	4945		4068	
No. Failures	3676		2969	
Wald χ^2	476.2		1087.9	

1. T-statistics reported in the parentheses.

2. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.

3. Year dummies included.

more likely to move on if, as suggest by the results in section 5.3.1, they are not being compensated. Instead the reverse effect is found; older losers are less likely to exit. This suggests that the reduction in external employment opportunities associated with both age and being passed over for the top job dominate the need to be compensated for previously sacrificing compensation in order to participate in a CEO promotion competition. The remaining variables are broadly consistent with the results presented in table 5.13.

For completeness, we measure the impact of our main variables on the CEO's hazard rate in table 5.15. Internally promoted CEOs have a marginally higher hazard than external hires, albeit the estimated coefficients are short of significance. There is an interaction effect between internally promoted CEOs (winners) and directors aged 60-65, suggesting these CEOs are at particularly high risk, beyond that which arises naturally from being old and internally promoted. One factor that might contribute to this is the practice of appointing an experienced director on a short-term basis when the company is in a period of transition or crisis. An increase in CEO equity at low levels is important in reducing the hazard for the CEO, whereas an increase in equity above 3% appears inconsequential. In addition, our blockholder variable is stronger for the CEOs than for the executive directors. The effect is to reduce the hazard at low levels of blockholder equity but to increase it at levels beyond 5%, albeit beyond 5% the effect is only marginally significant.

As suggested above, there is a greater response in the hazard to TSR performance for CEOs than for executive directors. The effect of increasing the number of executive directors is broadly similar to that for executive directors, with more executive director being associated with lower hazards. However, for CEOs, an increase in non-executive directors also reduces the hazard, whereas for executive directors the hazard was increased. This, together with the finding that the independence of the directors appears relatively unimportant, implies that the process of reform which has seen boards comprise a greater proportion of independent non-executive directors has put CEOs under greater risk. However, again it should be stressed that these findings should be considered with the fact that the hazard is for all exit states, not just the hazard of forced departure. Indeed, in chapter 3 evidence was presented that an increase in independent non-executive directors did result in a higher hazard of forced departure for CEOs.

Table 5.14: Hazard to Any Exit - Executive Directors

	<i>1</i>		<i>2</i>	
Loser	7.3908***	(2.92)	4.2278*	(1.86)
<i>Age Group</i>				
50-55	1.1018	(1.48)	1.0365	(0.48)
55-60	1.7343***	(8.52)	1.6530***	(6.64)
60-65	2.9836***	(12.35)	2.7050***	(9.27)
>65	1.8910***	(4.61)	1.9262***	(4.12)
<i>Loser*Age</i>				
50-55	0.9396	(-0.68)	0.9440	(-0.58)
55-60	0.8366**	(-1.95)	0.7984**	(-2.22)
60-65	0.5715***	(-4.05)	0.6511**	(-2.84)
>65	0.9165	(-0.37)	0.9601	(-0.13)
Chair			0.6675***	(-4.58)
FD			0.6570***	(-8.07)
<i>CEO Equity</i>				
0-3%			0.9239*	(-1.63)
3-15%			1.0061	(0.29)
>15%			1.0021	(0.17)
<i>Largest Non-CEO Equity</i>				
0-5%			1.0021	(0.16)
5-25%			1.0058	(1.41)
>25%			1.0005	(0.12)
No. EDs			0.8537***	(-12.25)
No. NEDs			1.0318**	(2.76)
% Independent NEDs			0.8522	(-1.42)
Ind NEDs * Loser			1.2685	(1.47)
Sales			1.1074***	(16.50)
<i>Total Shareholder Return</i>				
LQ-Median			0.8326***	(-3.72)
Median-UQ			0.6964***	(-6.82)
UQ			0.7900***	(-4.44)
N	16961		12685	
No. Directors	4280		3532	
No. Failures	3038		2458	
Wald	630.0		1120.9	

1. T-statistics reported in the parentheses.

2. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.

3. Year dummies included.

Table 5.15: Hazard to Any Exit - CEOs

	<i>1</i>		<i>2</i>	
Winner	1.108	(0.88)	1.179	(1.28)
Chairman & CEO	0.991	(-0.06)	1.077	(0.50)
<i>Age Group</i>				
50-55	1.030	(0.28)	0.982	(-0.16)
55-60	1.595***	(4.69)	1.502***	(3.72)
60-65	2.299***	(5.88)	2.327***	(5.54)
>65	1.592	(1.22)	1.852	(1.54)
<i>Winner*Age</i>				
50-55	1.079	(0.42)	1.387	(1.13)
55-60	0.668**	(-2.32)	0.959	(-0.16)
60-65	0.713	(-1.26)	1.920**	(2.25)
>65				
<i>CEO Equity</i>				
0-3%			0.731**	(-2.76)
3-15%			1.045	(1.04)
>15%			0.992	(-0.36)
<i>Largest Non-CEO Holdings</i>				
0-5%			0.946**	(-2.03)
5-25%			1.013*	(1.65)
>25%			1.001	(0.10)
No. EDs			0.852***	(-5.46)
No. NEDs			0.955*	(-1.73)
% Independent NEDs			0.894	(-0.61)
Ln Sales			1.129***	(9.94)
<i>Total Shareholder Return</i>				
LQ-Median			0.648***	(-4.49)
Median-UQ			0.594***	(-5.07)
UQ			0.512***	(-6.18)
N	4490		3265	
No.Directors	1111		893	
No. Failures	770		623	
Wald	101.5		341.7	

1. T-statistics reported in the parentheses.

2. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.

3. Year dummies included.

5.4 Conclusions

This chapter has sought to provide an overview of remuneration arrangements of, not just the CEO, but all executive directors. This has allowed an exploration of certain topics beyond the scope of pay studies that limit their investigation to the CEO. In particular, this chapter has presented data on the levels of remuneration associated with each executive position together with the distribution of pay within the executive management team. Furthermore, this chapter has approached tournament theory from a new perspective by investigating the effects of CEO succession events on the remuneration and likelihood of exit of executive directors.

If, as posited under tournament theory, CEO competitions are self financing with directors accepting smaller remuneration packages relative to their marginal product in exchange for the prospect of winning the prize, then it might follow that on losing the competition pay will increase to compensate the director for the absence of a future promotion opportunity. Further, one might expect that this compensation effect to be particularly important to older CEOs as younger CEOs may still be able to participate in the next CEO competition. However, after controlling for fixed effects and standard wage control variables executive directors do not appear to receive additional remuneration when somebody else is appointed to the position of CEO. Moreover, the compensation effect is not stronger for older directors. As such, the findings of this chapter do not support the loser compensation hypothesis.

There may be a number of factors at play resisting a loser compensation effect. It could simply be socially unacceptable for directors to receive additional compensation for losing a promotions competition. The author knows of no anecdotal evidence where a company has admitted to undertaking a remuneration review just because a CEO succession has occurred. It is unlikely that such a review would be welcomed by shareholders. Remuneration reviews are often undertaken following a change in strategy, which may involve a change in CEO, but the justification for the review is typically based around the new strategy rather than the change in personnel. If it is just a social convention that prevents the compensation of losers then a succession defeat should generate a strong financial incentive for the director to leave the company for greater reward elsewhere.

Alternatively, it is possible that the reduced employment opportunities associated with being passed over for the top job counteract the loser compensation effect. If being passed over for the top job reveals some adverse information regarding the director's suitability

for a CEO position, then the director may experience a contraction in external employment opportunities. Consequently, compensation to retain the CEO would not be necessary in which case a succession defeat would not result in a higher likelihood of exit. Indeed, older directors who experience a succession defeat receive less compensation than other directors which could suggest that the negative signal is magnified for older directors.

In order to distinguish between these competing explanations of the absence of a loser compensation effect, the impact of succession defeat on the likelihood of exit was explored. The promotion of a rival to CEO dramatically increases the directors exit likelihood. This is consistent with the idea that lack of compensation for being passed over, prompts directors to seek employment elsewhere. However, older directors who experience a succession defeat experience a lower likelihood of exit than younger directors who experience a succession defeat. This suggests that the financial incentive to leave to organisation is reduced for these older losers. This is consistent with the negative signal effect which is presumed to be more significant for older directors as the signal is stronger for these directors.

The analysis of compensation upon exit likelihood is worthy of further exploration. An obvious, albeit labour intensive extension, would be to distinguish between the exit types and adopt a competing risks framework as in chapter 3. This would allow a more precise estimate of the impact of the variables of interest upon different exit states. The adoption of a parametric form, in addition to the semi-parametric method employed here would also be an interesting accompaniment to the results presented in this chapter. Moreover, the implementation of a frailty model in order to control for unobserved individual heterogeneity would also be a worthwhile extension.

Like the majority of published work on executive remuneration, a shortcoming of this investigation is the absence of data concerning directors' pensions. Executive directors of public companies typically enjoy company pension contributions or belong to a defined benefit scheme with accrual rates of up to $\frac{1}{30}^{th}$ of final salary per annum. These pension benefits are not insignificant. Lord Browne, left BP plc with a pension pot worth approximately £20M. Further, anecdotal evidence suggests that losers of CEO promotion competitions are compensated in the form of additional pension benefits. Unfortunately, for the majority of our sample years, UK public companies were not required to disclose information on the executive directors' pensions. However, since the introduction of the Directors' Remuneration Report Regulations (2002) companies are obligated to disclose pension contribution to directors and valuations of define benefit schemes. Therefore,

there is certainly scope for further research in establishing whether losers of CEO promotion competitions receive additional pension benefits. Such a study would provide a more complete picture of the compensation to executive directors, following the promotion of a rival to the position of CEO.

Appendix

5.A Hay Group

Hay Group performs job evaluations for both publicly traded and privately owned companies. Each job is assigned a reference level on the basis of the job's size, complexity and importance. The reference level is determined prior to considering the performance of individual employees. The reference levels have been used in discrimination court cases to determine equal pay for equal worth. A CEO of a large international organisation will have a reference level towards the top end of the scale. A CEO of a smaller organisation and a senior executive of a larger organisation could have the same reference level. A lower level executive of a smaller company will be towards the beginning of the scale. Within a firm, a typical promotion is considered to be approximately 2 reference levels.

CHAPTER 6

Conclusion

‘There is widespread concern that inappropriate remuneration schemes, particularly but not exclusively in the areas of investment banking and trading, may have contributed to the present market crisis.’

Financial Services Authority ‘Remuneration Policies’ 13 October 2008.

6.1 Overview

This thesis has sought to contribute to the body of applied microeconomic research that has investigated the extent to which existing remuneration and governance arrangements facilitate the delivery of shareholder value. This fundamental question remains the motivation behind much of the current research in corporate governance. In pursuit of an answer, the existing theoretical and empirical literatures have explored several topics. These include questions over the alignment of managerial incentives with shareholder interests (Conyon and Murphy, 2000; Jensen, Murphy, and Wruck, 2004); (for instance provided by stock options (Bettis, Bizjak, and Lemmon, 2005; Hall and Liebman, 1998; Hall and Murphy, 2003)); the, perhaps undue, influence that CEOs are able to exercise of the pay-setting process (Bebchuk and Fried, 2004) and their own likelihood of exit (Hermalin and Weisbach, 2003; Weisbach, 1988); the importance of shareholder rights (Gompers, Ishii, and Metrick, 2003) and the extent to which monitoring by active shareholders reduces agency problems (Karpoff, 2001; Becht, Franks, Mayer, and Rossi, 2008) but potentially reduces firm-specific investment by the executives themselves (Burkart, Gromb, and Panunzi, 1997); the influence of shareholder voting (Kerr Christoffersen, Geczy, Reed, and Musto, 2007); and the extent to which competition for promotion to CEO elicits effort

from board members (Lazear and Rosen, 1981; Bognanno, 2001).

This thesis has focused upon the contemporary academic debates surrounding the independence of the pay setting process; the extent to which the turnover of CEOs responds to firm performance; the impact of shareholder activism; and the remuneration of executive directors. Data from Manifest Information Services Ltd on FTSE 350 companies 1995-2005 was used to conduct four empirical investigations into corporate governance and executive remuneration. This research was, perhaps, better positioned than the extant empirical literature to explore these issues as our sample contains important details missing from prior studies. Manifest's database was designed in 1995 and took advantage of the regulation introduced at the time (Greenbury, 1995) which vastly improved the disclosure of executive remuneration, particularly in respect of bonus arrangements, executive stock option schemes and long term incentive plans. Manifest's database records detailed information on all aspects of executive remuneration on an individual basis. Each director's service dates are recorded and an assessment of every non-executive director's independence from their firm and the executive management team is undertaken. In addition, Manifest logs every resolution proposed for shareholder approval at company meetings and, where disclosed by the company, the poll results associated with each resolution. In structuring the research project, consideration was given how to maximise the potential of the dataset and optimise the resulting contribution to the literature. For this reason, the thesis was structured around four quite separate empirical investigations, albeit on the related themes of governance and managerial incentives.

This chapter will provide a summary of the research objectives of this doctoral project, reiterating why they are relevant to the contemporary academic debates and why they are useful for practitioners. Further, this chapter will assess the extent to which these objectives have been satisfied during this project. The contribution of the project predominately lies within the empirical testing of important existing theories associated with executive remuneration and corporate governance. Common to all the theories examined in this thesis is how far the observed arrangements serve to add shareholder value and therefore the extent to which the underlying processes that generate the observed arrangements are operating efficiently.

This research has also explored new areas and has taken advantage of econometric techniques that have, hitherto, not been exploited in the existing literature. This has resulted in a number of exciting preliminary findings that warrant further examination. Each chapter also identifies the shortcomings and limitations of the investigations, together with areas

which require further exploration. This chapter will collate these opportunities for future research and make further suggestions as to worthwhile areas for related projects to explore. Final thoughts are presented in section 6.4.

6.2 Research Objectives and Principal Findings

This research has sought to make a contribution to knowledge in the field of applied microeconomics by engaging existing theories associated with executive remuneration and corporate governance with evidence. By applying sophisticated econometric techniques to previously unexamined data it was envisaged that significant and meaningful insights into competing theories being advanced in the literature could be made. While the competing theories are not entirely incompatible with each other there are certain aspects of theories which are mutually exclusive. The resolution of these incompatible explanations of remuneration and governance arrangements was the first objective of this research project.

However, this research also had other objectives. Our sample permitted the application of certain econometric methods that had not been fully exploited in the existing literature. Certain insights have been made into the topics that would have been difficult to achieve with standard methods. Furthermore, following the exploratory work in this thesis it is hoped that future research might be guided along new lines of inquiry. Finally, this thesis was designed to be a useful resource for practitioners and policy makers in the governance and remuneration industries. Consequently, an overview of UK remuneration and governance arrangements was provided in the introduction and each chapter presented summary information and descriptive statistics where appropriate¹.

6.2.1 Academic Contribution

Chapter 2 sought to assess two competing theories concerning the determination of chief executive remuneration; ‘optimal contracting’ and ‘rent extraction’. If remuneration contracts are determined optimally, the structure and composition of the remuneration committee responsible for creating, observing and reviewing those pay arrangements should also be the optimal arrangement for the firm. Consequently, the proportion of indepen-

¹Following completion of this thesis, the author intends to present the findings to organisations in the corporate governance industry.

dent directors serving on the board or the remuneration committee would be the optimal arrangement for the firm. Therefore we would not expect any difference between those companies with lots of independent directors and those with none. However, if unresolved agency problems are embedded in the operation of public companies, as posited by the rent extraction theory, CEOs can be expected to capture the pay setting committee and inflate their own remuneration. Under such circumstances, independent directors should be more resilient to capture and therefore an increase in independent directors on the board or the remuneration committee might be correlated with an reduction in CEO remuneration.

The empirical testing of the above propositions is not as straight forward as might appear at first glance. Chapter 2 demonstrated that there were numerous issues related with accurate data measurement and correct econometric specification. The chapter conducted a thorough examination of how the results were sensitive to each methodological choice. Such an exercise is well suited to a chapter of a thesis which is not restricted by the same space requirements imposed on journal articles. Indeed, while the final preferred estimator of chapter 2 tended to favour the optimal contracting view of pay setting arrangements, perhaps the more important contribution of chapter 2 was the demonstration of which econometric specifications are likely to produce the most robust tests of the propositions.

Following on from chapter 2, we were keen to explore CEO turnover along similar lines. Again, two competing theories were examined, this time concerning the extent to which the threat of CEO dismissal is an effective discipline or whether unresolved agency problems allow CEOs to capture the process and entrench themselves in their organisations. Again, the extent to which the directors were independent was examined in order to help judge between these hypotheses.

While independence of the directors appears relatively unimportant in the capture of remuneration, chapter 3 did find some evidence for the entrenchment of CEOs and some success of independent directors in reducing this entrenchment. However, once again an important contribution of the chapter lies within the application of an econometric method not previously applied to CEO turnover. By using duration analysis to analyse the time to different exit states a clear narrative emerged concerning the movement of the hazard over the course of the CEO's tenure. It is unlikely that we would have been able to explore the concepts of entrenchment and performance revelation by using standard binary regression models. In addition, it is hoped that the application of this technique will guide future research to new areas².

²Some possibilities are discussed in the section below.

Chapter 4 undertook a different approach. Here, the objective was to contribute to the debate regarding shareholder activism and its importance in the creation of shareholder value. Much of the existing literature suspects that direct intervention by shareholders is at best inconsequential and their interference could even be damaging. Therefore, in addition to measuring the impact on returns, we were interested to ascertain whether activism influenced any other aspect of corporate governance, particularly, given the subject matter of the earlier chapters, the remuneration and turnover processes. For the first time, data on the votes cast at shareholder meetings were used as a proxy for activism. Consistent with the extant literature, shareholder voting did not appear to influence future shareholder returns, rather shareholder voting appeared to reflect prior unresolved under-performance. Shareholder voting on remuneration arrangements and the election of CEOs also reflected performance and also governance best practice in terms of the composition and independence of board committees. However, despite anecdotal evidence to the contrary, no evidence of a relationship between dissent at shareholder meetings and future remuneration arrangements was found, nor was any relationship uncovered between shareholder voting and the likelihood of forced departure. It appears that voting against violations of best practice does not translate into the adoption of best practice or removal of the CEO.

In light of this finding it was important to consider the incentives for shareholder activism. Much has been made in literature of the lack of adequate incentives to activism, as activism constitutes a public good with the associated free-rider problems. Moreover, given the absence of any relationship with voting, it is possible that the influence of activism occurs prior to the meeting takes place, in which case dissent through voting would only capture the unresolved matters of shareholder concern. However, in the same way that there is pressure to vote with management in order to preserve the reputation of the company, shareholder efforts to discipline managerial behaviour are only credible if incentives for doing so are consistent with improving shareholder returns. Furthermore, the measurement of activism is itself difficult, as many instances of shareholder engagement are outside of the public domain. While we can not observe the shareholder engagements themselves we can observe the actions that they achieve. Therefore an analysis of the market's reaction to the most significant governance event - the dismissal of the CEO - provided an insight into the influence that shareholders are able exercise over the companies that they own. While the market reacts negatively on the day of the announcement of the CEO's dismissal, the action does appear to significantly improve the fortunes of the company, suggesting that shareholders do potentially possess a credible threat with which

to discipline managerial behaviour. The extent to which the forced departure is the result of direct shareholder engagements requires further investigation.

Chapter 5 was designed to provide an overview of all executive directors' remuneration, together with an insight into the distribution of pay between board members. This led naturally to an analysis of tournament theory; that is the extent to which large pay differentials between the CEO and the other executive directors are used to motivate executive directors to compete for the CEO's job in the next promotion tournament. Empirically testing tournament theory is difficult as large pay differentials are compatible with other theories of executive remuneration. In light of this, chapter 5 focused on the compensation for executive directors who are in office when somebody else is promoted to the position of CEO. One possible implication of a self-financing tournament is that directors who are passed over for the position of CEO might require compensation to adjust for the loss of promotion incentives, otherwise they face a financial incentive to leave.

Again the importance of econometric method was reinforced, as at first glance there appeared to be a large compensation effect for the losers of CEO tournaments. Yet, after controlling for individual fixed effects and other control variables the impact on remuneration was statistically insignificant. To test whether the absence of a compensation effect increased the likelihood of exit (as expected if remuneration is structured in a manner consistent with tournament theory), the duration analysis framework undertaken in chapter 3 was exploited again. If no increase in exit likelihood occurred then the absence of a loser compensation effect could be the result of a loss in external employment opportunities arising from being passed over. However, a significant increase in the likelihood of exit was found when executive directors were passed over for promotion, consistent with the tournament model.

6.2.2 Contribution to Practice

This research has the potential to serve as a resource for practitioners and policy makers of best practice and may serve to inform future decisions made in the corporate governance and executive remuneration industries. For example, discerning between the optimal contracting and the rents capture model of executive pay determination is very relevant to the ongoing debate regarding the reform of UK corporate governance. Conventional wisdom has it that more independent directors achieve a better alignment of CEO pay packets and with the interests of shareholders. However, if no relationship between pay and the

independence of the directors is found then no matter how independent your directors, the efficiency of the CEO's remuneration contract will be unaffected. As such, reforming efforts might be best directed elsewhere.

Likewise, the extent to which CEOs face a threat of dismissal has direct implications for policy makers of best practice. The majority of reform efforts have sought to improve disclosure and transparency in the audit, internal control and pay-setting processes. Yet relatively little attention has been given to the threat of dismissal and its potential to discipline the behaviour of the CEO. If agency problems can be sufficiently mitigated via the threat of dismissal, then policy makers may be prompted to focus their efforts less on remuneration and more on CEO turnover. Indeed, the findings of this research tentatively suggest that there is more entrenchment in the dismissals process than there is capture of the pay-setting process.

The call for greater shareholder activism has also been a prominent characteristic of the reform era. Over our sample, a number of organisations have emerged, including Manifest, that offer shareholders proxy voting and related services for institutional shareholders. Policymakers have sought to encourage institutions to vote their shares in an attempt to raise overall governance standards. While voting levels have increased, chapter 4 was unable to identify any causal link between voting and any aspect of governance or performance. In contrast, the dismissal of the CEO under pressure from shareholders did have a major impact on the future direction of the company. Consequently, shareholder institutions and policymakers might be better off focusing their attention on how to maximise the return of direct engagements, rather than increased voting levels.

Further knowledge of the distribution of pay within the board should empower practitioners and policy makers with a greater understanding of the key issues when setting remuneration policies. The investigation of chapter 5 into tournament theory might be particularly useful for policymakers. Tournament theory provides a justification for the large pay differentials observed between employees at different levels within a company's hierarchy. Viewing the CEO's remuneration as a prize, internal competition for this prize helps to elicit effort from the executive directors.

Yet UK policymakers are either unaware or have chosen to ignore the potential of promotion incentives. The combined code (2006) makes no reference to tournament theory, limiting the role of remuneration to 'attract, motivate and retain' only the director who is being remunerated³. Therefore, the main incentive device proposed by institutional

³Perhaps it is difficult for companies to convince their shareholders that CEOs get paid 'more than they

guidance is performance-related pay through long term equity incentives. However, these incentives are costly as large grants are necessary to motivate risk averse agents. However, if incentives can be provided by having the CEO's remuneration constitute a prize then the need for costly equity incentives might be reduced. It may be cheaper and more efficient to re-balance the CEO's remuneration in the direction of non-variable elements if its function is to act as a prize for the other directors.

6.3 Suggestions for Future Research

As stated in the conclusion to each chapter, there is scope within each empirical investigation for further exploration. This section will briefly highlight these suggestions for future related research but will also suggest more general new avenues for research in executive remuneration and corporate governance.

While the evidence presented in chapter 2 does not generally support a rents capture model, it would be wrong to dismiss the model outright. Accusations of capture are often directed at the specific details of pay arrangements, such as annual bonus arrangements or the nature of the performance conditions associated with the vesting of equity incentives. While this study examined impact of independence on total remuneration, it remains possible that an independent pay-setting committee may be important in the design and monitoring of these incentive schemes. In the context of the present financial crisis, it would be worth exploring how governance factors influence the extent to which incentive schemes reward luck rather than genuine performance. One possibility is a comparison of the incentive schemes that pay-out against peer group performance against those that reward against absolute earnings. Also, given that the strongest variable that determined current pay was prior period pay, it may be worth exploring the factors that cause pay from prior periods to persist into current remuneration arrangements. If a faster rate of adjustment is associated with a more efficient pay-setting process more independence in the pay-setting process might be associated with faster adjustment rates.

Chapter 3 applied a semi-parametric method as nothing was known about the underlying distribution of the hazard. It would be worth exploring the potential in adopting a full parametric form which assumes a distribution for the baseline hazard. This would result in more efficient estimates, provided the assumed distribution is a fair representation of

deserve', i.e. more than their marginal contribution to productivity.

the underlying hazard. Further, while adjustments for unobserved individual effects were made to the standard errors used for inference on the hazard ratios it might be worth modeling these effects directly applying a ‘frailty’ model. Together, these adjustments would provide an interesting comparison to the results presented in that chapter.

An extension of the work in chapter 3 that explored the impact of governance reforms would also be of interest. Ideally, to identify the precise impact of the reforms one would desire two groups of similar companies, except that one group was not subject to the reforms. This would enable the application of difference-in-difference methods in order to distinguish between the impact of the reforms and the changes that occurred due to other factors. The collection of this sample would be difficult as the reforms apply to all large UK listed companies. However, some companies listed on the Alternative Investment Market (AIM) are broadly similar to the smaller companies listed on the FTSE All Share. AIM companies are exempt from the combined code and the directors’ remuneration report regulations and therefore might constitute an appropriate control group.

Chapter 4 might be extended by attempting to capture the effect of behind the scenes negotiations with management. Obviously, given the hidden nature of these engagements acquiring sufficient data to perform a quantitative experiment might prove difficult. However, as Becht, Franks, Mayer, and Rossi (2008) have shown, access to data is not impossible. If a casual link between the engagements of shareholders and shareholder returns could be established it would have wide ranging implications for the operation of corporate governance and the direction of future research.

An obvious but important extension to chapter 5 is the collection of data on the executive directors’ mode of exit. Chapter 3 showed that different modes of exit for the CEO should be modelled differently. Therefore, the adoption of the competing risks framework for executive directors would provide more accurate results as to the impact of a CEO succession event upon the existing executive director’s likelihood of exit. In addition, to the acquisition of pensions data, which is now publicly disclosed in public companies’ annual report and accounts, would aid the calculation of total executive remuneration.

Whilst it certainly appears that a CEO succession event has implications for the other executive directors, further theoretical work would also increase our understanding of exactly what to expect. This would provide a more complete framework for future empirical work. For example, it would be interesting to understand how existing remuneration levels might moderate the extent to which the likelihood of exit increases when a rival is promoted. It would also be useful to have a better understanding of how the prospect

of the CEO being hired externally might disrupt tournament incentives for the existing directors.

During the implementation of this research, a number of issues have been left unresolved due to the complexity of the processes underlying the observed arrangements. As such this research project might be complemented by a qualitative investigation on broadly similar themes. For example, a shortcoming of chapter 2 is that it is difficult to know whether directors who satisfy the criteria of independence are indeed independent in character and judgement. While Manifest's assessment is the best available large sample information on the matter, if one was able to actually sit in remuneration committee meetings it might be possible to determine whether the criteria for independence, as laid out in the Combined Code (2003), actually translate into real independence of character and judgement. Gaining access to remuneration committee meetings would be difficult to negotiate in practice but it is not beyond the realms of possibility. Roberts, McNulty, and Stiles (2005) undertook interviews with 40 directors as part of the Higgs (2003) review into the role and effectiveness of the non-executive director. Their research was able to identify ways in which non-executive directors have the potential to perform duties outside of their monitoring role envisaged by agency theory by, for instance, making contributions to strategy.

6.4 Final Conclusions

Popular interest in executive remuneration and corporate governance appears universal and robust to the prevailing economic climate. During years of economic growth, the business press highlights the remarkable levels of pay earned by top executives whereas in less plentiful years accusations of rewards for failure and a lack of accountability are restated. Since the onset of the present financial crisis commentators are calling for an overhaul of regulation in the financial services industry. Remuneration arrangements, in particular, annual bonuses have once again have been criticised (FSA, 2008)⁴. Subsequent attempts by policymakers to reform the existing framework will, no doubt, provide opportunities for further related research.

However, academic research in executive remuneration and corporate governance should not just respond to the latest headlines. Corporate governance and executive remuneration

⁴Note that uncapped bonuses for investment companies had been highlighted as issues for shareholder concern by institutional guidance (ABI, 2003) and companies such as Manifest long before the present financial crisis. Bruce, Skovoroda, Fattorusso, and Buck (2007) also examined the issue of bonuses and firm performance.

have evolved to become mainstream disciplines for academic inquiry. Murphy (1999) identified the explosion of academic work published in executive remuneration from the 1980's to 1990's. Since the turn of the millennium, this trend has continued, or even gathered pace, with voluminous material being produced on the subjects. Undoubtedly, the wide interest in the subjects has stimulated the academic inquiry but it is more the resolution of outstanding academic questions that is central. We are far from a complete understanding of governance and pay arrangements. Incompatible theories of governance and remuneration continue to be advanced by different parties which demand resolution through empirical testing.

The emergence of new major economic territories such as China and India provides an exciting new avenue of research for all applied microeconomists but particularly for scholars interested in executive remuneration and corporate governance. Incumbent companies in such territories have their own governance tradition, about which little is known⁵. The implications of Chinese or Indian style governance regimes for delivering shareholder value, operational performance or efficient remuneration contracts are undocumented. The lack of access to data in such territories, remains a significant obstacle to effective research in this area but given these territories are becoming more open to investment from outside it may not be long before a meaningful attempt at an empirical study into such countries is possible. Outside investors bring with them their own standards and expectations of good governance which may bring them into conflict with the status quo in those countries. Corporate governance agencies, such as Manifest, already provide coverage of stocks on a global basis.

In summary, academics interested in executive remuneration and corporate governance have never been better placed to conduct research. Given the level of popular interest, together with the development of the topics into credible subject matter for research and improving availability of data it should not be difficult to win funding for research and publish the output. Many of the theoretical debates remain unresolved and prior empirical studies require further development. Research that results in a greater understanding of how to design and operate efficient corporate governance arrangements should assist the creation of shareholder value, which is the stated objective of every public company in the UK.

⁵Even the extent to which the government retains influence over these companies is unclear.

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