ESSAYS ON EXECUTIVE PAY

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ABSTRACT

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The aim of this thesis is to investigate the effect of two specific external, to the principal-agent relationship, influences on executive pay practices in the UK, namely pay consultants and the introduction of the International Financial Reporting Standards (IFRS). The thesis consists of three essays.

In the first essay, I examine the role of pay consultants in UK CEO pay practices. The results illustrate that their role is not consistent with the predictions of the managerial power theory. More specifically, pay consultants do not try to help managers towards the expropriation of shareholders' wealth; on the contrary I show strong indications that pay consultants urge firms towards the adoption of more incentive based CEO compensation. Moreover, I report that economic characteristics (e.g. firm size, complexity of the contract) rather than CEO power explain the firm's choice to hire a compensation consultant. These results are robust to selection bias controls. The results of this essay indicate that pay consultants play a less "sinister" role than what the managerial power theory suggests and that their advice and expertise can assist firms design an optimal executive pay contract.

In the second essay, I examine the existence of managerial opportunism at the switch from UK GAAP to IFRS. I find strong indications that the restatements from UK GAAP to IFRS have not been manipulated by managers. I examine the existence of such behaviour under different specifications and for different types of CEOs that one would expect to engage in opportunistic behaviour to maximise the expected personal wealth. The research design that I adopt makes the results less prone to methodological issues common in studies in this area. Positive Accounting Theory literature has established that managerial opportunism seriously affects accounting choice. The results of this essay imply that with respect to IFRS restatements, where managers had strong incentives to manage future earnings, I find no signs of manipulation. This essay thus puts into question the Positive Accounting Theory Paradigm.

In the third essay, I examine the effect of IFRS on the use of performance measures for evaluating and rewarding managers. This essay illustrates that firms make less use of accounting based performance measures due to the introduction of IFRS. I explain these results based on the predictions of optimal contacting theory. I claim that IFRS adds unnecessary "noise" to accounting numbers not relevant to the managers' actions. This is mainly due to the adoption of "fair value" accounting, which makes accounting earnings more value relevant and therefore useful for firm valuation purposes; however, "fair value" accounting also makes accounting numbers more volatile and sensitive to market movements. If this increase in volatility is related to events outside the managers' control, this makes the use of accounting based performance measures less useful for evaluating and rewarding managers. The results of this essay imply that IFRS might have made accounting earnings more useful for stock market purposes, e.g. firm valuation, but this has happened at the expense of other purposes that accounting serves, e.g. contracting.

DECLARATION

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Acknowledgements

CHAPTER 1

Introduction

1.1. Motivation

The aim of this thesis is to investigate the effect of two specific external influences on executive pay practices in the UK, namely pay consultants and the introduction of the International Financial Reporting Standards (IFRS).

Recent changes in UK and US corporate governance regulations have put pay consultants in the spotlight and initiated a debate on whether their role is beneficial towards the design of an optimal managerial compensation contract or, on the contrary, they assist managers towards the expropriation of shareholders' wealth. The first essay in this thesis provides new evidence on this debate.

Based on European Union (EU) regulations, all UK listed firms were required to comply with the International Financial Reporting Standards (IFRS) after 2005. The introduction of IFRS is considered as one of the biggest accounting policy related "experiments" and provides significant opportunities for empirical research. From a managerial compensation point of view, it is interesting and timely to assess the implications of executive pay related incentives on firms' compliance with IFRS, as well as the impact of the introduction of IFRS on executive pay practices. The second and third essays in this thesis examine these two issues respectively.

1.2. Structure of the thesis

The empirical part of this thesis includes three autonomous essays in Chapters 2, 3 and 4 respectively. Each essay has a separate literature review, makes use of a different dataset and tries to answer unique research questions. Chapter 2 makes use of management compensation related data for a single year to examine the role of pay consultants in the

determination of executive pay and the factors that affect a firm's choice to hire a consultant. Chapter 3 uses data from UK GAAP to IFRS restatements to examine whether they are associated with managerial pay related incentives. Chapter 4 examines changes in executive pay related performance measures after the introduction of IFRS.

The integrating theme of the three topics is the potential interrelation of two external, to the agent-principal relationship, influences on executive pay practices. The first influence is an external agent, pay consultants: does the use of pay consultants affect firms' management compensation practices and what are the factors that drive firms to make use of their services (chapter 2)? The second influence is an externally imposed event, the introduction of IFRS: do executive pay related motives affect how firms implement the switch from local GAAP to IFRS (chapter 3) and what is the effect of IFRS on the use of managerial performance measures by firms (chapter 4)?

1.3. Relation to prior literature

1.3.1. Prior Research on Pay Consultants

1.3.1.1. Background

Based on the recommendations of the Combined Code on Corporate Governance (2003) UK firms need to disclose in their annual reports comprehensive details on the outside consultancy that their remuneration committees hire. Relevant information on the use of compensation consultants is also available for US firms since 2006, under new legislation (Securities and Exchange Commission 2006) which requires the introduction of a "Compensation Disclosure and Analysis" (CD&A) report in the firms' annual proxy

statements. The motive behind the introduction of these reports is to improve the level of disclosure in executive pay practices and, to a further extent, "promote confidence in corporate reporting and governance" (Combined Code on Corporate Governance 2003, p.1). Due to the introduction of these regulations new data on the use of compensation consultants by firms has become available and has initiated a debate on the effect of pay consultants on managerial pay contracts and firms' internal corporate governance mechanisms in general.

1.3.1.2. The role of Pay Consultants in Executive Pay Practices

A number of studies examine the arguments of the managerial power approach (Bebchuk et al. 2002) on the role of pay consultants: Powerful managers try to achieve higher levels of pay by expropriating shareholders' wealth in the form of rents; they hire pay consultants to help them "camouflage" and justify their pay. Indeed, empirical studies show that firms which make use of pay consultants have higher levels of pay (Conyon et al. 2009; Armstrong et al. 2010); however this is followed by higher levels in the equity based part of the compensation package (Conyon et al. 2009) and it can also be attributed to differences in corporate governance mechanisms between firms (Armstrong et al. 2010).

Other studies investigate the consultants' incentives and in particular whether it is likely they provide biased advice in the case of conflicting interests, i.e., when they offer additional services to the firm. The results in this case are mixed: Murphy and Sandino (2010) show that CEOs receive higher levels of pay when compensation consultants provide additional services to the firm. On the other hand, Cadman et al. (2010) do not find indications for such a difference; their results do not change significantly after controlling for potential selection biases.

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In chapter 2, I provide additional evidence regarding the role of pay consultants. I examine one of the main arguments of managerial power theory, namely that firms with more powerful managers are more likely to hire a pay consultant. I show that this is not the case; in contrast, other economic factors like the complexity of the pay package or specific corporate governance characteristics drive firms to hire a compensation consultant. I also make use of a more comprehensive sample for UK firms compared to previous relevant studies, which makes it more representative of the UK population.

In line with previous studies, my results indicate higher levels of CEO pay in firms that have hired a pay consultant. However, firms with pay consultants have higher levels of equity based and lower levels of cash (salary) based pay. Importantly, I control for selection biases in a more appropriate way than previous studies (Cadman et al. 2010) and the results do not change substantially. Chapter 2 shows strong indications that compensation consultants do not play a "sinister" role in the determination of CEO pay as managerial power theory implies; in contrast their role appears to be beneficial towards the determination of an optimal CEO pay contract.

1.3.2. Research on the informational properties of IFRS reconciliations and the role of incentives on accounting policy

1.3.2.1. Background

As part of the process of complying with IFRS, on the year of their introduction UK firms had to disclose a restated set of accounts from UK GAAP to IFRS for the year prior to

IFRS. In relation to the literature on accounting choice and accounting standard setting, the requirement to produce IFRS restatements created a novel data set, offering a number of interesting research opportunities.

Studies so far have investigated whether these reconciliations convey new value relevant information. Horton and Serafeim (2010) show evidence of market reactions to these reconciliations, which implies that they are useful for firm valuation purposes. Christensen et al. (2009) confirm this result and further illustrate that market reactions to the reconciliations are stronger for firms that face a debt covenant violation post IFRS. However to date there has been limited study of the accounting choices firms made in their IFRS reconciliations. This is the focus of chapter 3.

1.3.2.2. Executive pay incentives and accounting policy

Contractual related incentives, amongst others, affect to a significant degree a firm's accounting policy and financial reporting decisions (Fields et al. 2001; Beyer et al. 2010). In a seminal paper, Healy (1985) investigates specifically the role of executive pay related incentives in the accounting choices of a firm. He shows that managers opportunistically manage total accruals depending on the targets set in their bonus contracts, in order to increase personal wealth. When accounting based performance measures are included in their short-term bonus schemes and firm's earnings lie well above or well below the targets set, they defer the recognition of income to future periods. Earnings and accruals management related to executive pay incentives is also an issue extensively analysed in the extant literature (Bergstresser and Philippon 2006; Degeorge et al. 1999; Gaver et al. 1995; Holthausen et al. 1995; Dechow and Sloan 1991).

In chapter 3, I examine whether executive pay related motives are also associated with the implementation of IFRS at the time of their introduction. More precisely, I examine whether managers manipulate IFRS restatements to achieve personal wealth gains. Based on the prior performance of the firm, the size of equity based pay and the past history of the firm's earnings I investigate whether managers follow an income increasing or decreasing approach when they restate their accounts from UK to IFRS GAAP. I study the existence of such a practice conditional on the use of an accounting based vesting target in the firm's equity based pay packages. The main results of this chapter suggest that managers do not seem to manipulate these restatements for personal wealth increases.

I believe that the results of this chapter are very interesting and intriguing. I view the switch to IFRS as a "clean cut" experiment, where a major exogenous change is imposed on all firms in the sample. Using this research design opportunity, I test the existence of managerial opportunism in an accounting policy related choice, namely the restatements from UK GAAP to IFRS. The relevant literature in positive accounting theory has concluded that managerial opportunism plays an important role in firms' accounting choices (Watts and Zimmerman 1990). However, in a setting less prone to methodological issues common in accounting policy studies, e.g., inherent endogeneity of firm's accounting choices and self selection bias, I find results not consistent with the predictions of positive accounting theory. The results of this chapter hence put in question the general applicability of the Positive Accounting Theory paradigm.

1.3.3. Research on the use of Managerial Performance Measures and the informational properties of Accounting Earnings in the post-IFRS period

1.3.3.1. The use of Managerial Performance Measures and Optimal Contracting Theory

Based on optimal contracting theory managers are rewarded for their actions (i.e., contribution towards the firm's output) and not the firm's actual output (Lambert 1983). Therefore, the decision of the weight that market and accounting based performance measures receive in an executive pay contract depends on how informative they are about the manager's actions (Lambert 2001) or, in other words, the "signal to noise" ratio of each measure in relation to the manager's actions (Sloan 1993). Lambert and Larcker (1987) confirm this prediction by showing an inverse relationship between the weight that each type of measure (market and/or accounting based) receives and the amount of "inherent noise" it contains. Additionally, Sloan (1993) shows that accounting based performance measures are used to "filter out" the "noise" of market based measures due to stock market's informational inefficiencies. However, their use decreases if the "signal to noise" ratio reduces, thus making accounting figures less informative about the manager's performance.

1.3.3.2. The introduction of IFRS and the informational properties of Accounting Earnings

In recent years a stream of research examines the financial reporting consequences of IFRS and their effect on accounting earnings informational content. One initial distinction is between voluntary and mandatory adopters of the standards. Barth et al. (2008) show that for voluntary adopters, IFRS is associated with less earnings management and more informative accounting earnings, thus making accounting figures of higher quality and

more useful to investors and shareholders, i.e., valuation purposes. They claim that earnings post IFRS become more volatile and the recognition of large losses (small positive earnings) is more (less) frequent. Hung and Subramanyam (2007) also show similar results. On the other hand, Christensen et al. (2008) and Jeanjean and Stolowy (2008) show that this is not also the case for mandatory adopters who do not show strong signs of an improvement in accounting quality post IFRS. On the contrary, Horton and Serafeim (2010) and Christensen et al. (2009) show indications of more informative earnings for valuation purposes in the UK post IFRS, where firms were required to switch to them in 2005.

In chapter 4, I show that the introduction of IFRS causes a decrease in the use of accounting based performance measures. I interpret this phenomenon based on the predictions of optimal contracting theory (Lambert 2001; Holmstrom 1979). Mainly due to the use of "fair value" accounting, which IFRS highly advocate, accounting figures convey extra information and become more associated with market value. However, due to the switch to "fair value" accounting numbers also become more volatile and more sensitive to market movements. If this increase in volatility is due to events unrelated to the performance of the firms' managers then, based on the predictions of optimal contracting theory, this makes them less useful for evaluating managerial performance. This implies that IFRS decreases the "signal to noise ratio" of accounting earnings for the managers' performance. Accounting based performance measures thus become less informative about the managers' actions and their use for managerial contracting purposes declines.

I believe that the results of Chapter 4 are very interesting, especially at a time that the debate on the benefits of IFRS and the use of "fair value" accounting is growing in the accounting literature. Chapter 4 illustrates that post IFRS accounting numbers might have

become more useful for stock market purposes, e.g., valuation, but this has happened at the expense of their usefulness for other purposes, e.g., contracting.

1.4. Summary and Conclusions

Despite their widespread use by firms, the role of compensation consultants in the determination of executive pay is an issue that has not been thoroughly covered by the literature so far. I believe that this was mainly due to the unavailability of relevant data, something that is no longer an issue due to the recent changes in corporate governance regulations in the UK and US. Therefore, I believe that this is a topic that will emerge as an important stream in future executive pay related research.

Although there is a significant amount of research on the introduction of IFRS and their financial reporting and economic consequences, I believe that their interrelation with corporate contracting and executive pay is an area that has not yet been covered substantially by the extant literature. I also expect this to be a topical issue in the future, especially as the voices against IFRS and the debate on their benefits grows.

This thesis contributes to the emerging literature in the following ways:

1. It shows that the role of compensation consultants is not consistent with the predictions of managerial power theory; consultants can assist towards the design of an optimal executive pay package. It also illustrates that economic and corporate governance characteristics, rather that CEO power, explain a firm's choice to hire a compensation consultant (chapter 2).

2. It puts in question the applicability of the Positive Accounting Theory paradigm by demonstrating that managers do not opportunistically use UK GAAP to IFRS restatements based on pay related motivations (chapter 3).

3. It documents a decrease in the use of accounting based performance measures after the introduction of IFRS. Based on the predictions of optimal contracting theory, this is a strong indication that IFRS add unnecessary "noise" in accounting earnings, thus making them less informative about the manager's actions and therefore less useful for contracting purposes (chapter 4).

In the empirical chapters I make use of the term "we" rather than "I". This is to illustrate the fact that the second chapter is associated with a published paper in *Corporate Governance: An International Review*, while the third and fourth chapters are associated with working papers, all co-authored with my supervisors Konstantinos Stathopoulos and Martin Walker.

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CHAPTER 2

Compensation Consultants and CEO Pay: UK Evidence

2.1. Introduction

Compensation consultants play a significant role within a corporation's governance structure. Their widespread use seems to indicate that firms recognise there is value in the services offered by them. Policy makers also appear to acknowledge the importance of pay consultants and have recently called for more information disclosure regarding their role within organisations. Even though market participants agree that pay consultants have now become key players for firms' internal corporate governance strategies, their effect on the pay contracts remains ambiguous and highly contested. The debate turns on whether consultants either enhance the ability of shareholders to offer optimal pay contracts or collude with the management to allow the latter to expropriate shareholders' wealth. This chapter offers evidence regarding this debate. We investigate the effect consultants have on both the levels and structure of CEO pay. We also examine whether it is CEO power or other economic reasons that determine the choice of hiring a compensation consultant.

From an optimal contracting perspective an efficient managerial compensation contract should assure the alignment of interests between risk averse managers and the shareholders of the firm. However, the determination of the level and structure of an executive pay package is a process which is complicated and requires expert knowledge. One might expect firms to hire expert outsiders to offer their advice on this process. With the use of a number of tools (surveys, valuation methods) and their expert knowledge on market-wide compensation practices, pay consultants can help firms determine an optimal executive compensation package and avoid costly mistakes.

Recent studies though offer an alternative explanation for the use of pay consultants. The managerial power approach (MPA) (Bebchuk et al. 2002) argues that compensation

consultants help the management team of a company camouflage the extraction of rents, i.e. excessive pay. Consultants, who are considered by the markets to be independent of the company, offer legitimacy to sub-optimal compensation plans and allow managers to expropriate shareholders' wealth by awarding themselves above optimal levels of pay. This happens for two reasons. First, managers, especially CEOs, have mutually supportive relationships[1] with their boards of directors, which allow them to gain power within the firm. CEOs may abuse this power and, among other things, try to control the design of the compensation package in order to achieve excessive pay in the form of rents. Second, consultants are influenced by the intra-company power relationships and try to please the CEO and not the shareholders, since they understand the CEO has more influence in the hiring decision than shareholders.

In this study, we find that CEOs of companies that employ compensation consultants enjoy higher levels of total compensation but we also demonstrate that this is due to a higher proportion of performance-related, equity based compensation. This result shows that even though the existence of a consultant is indeed related with higher levels of top-executive pay, this extra pay is incentive related. In addition, we model the choice of hiring a pay consultant. Based on the MPA, one would expect more powerful CEOs to increase the likelihood of the firm hiring a pay consultant. We find no evidence to support this argument. In particular, more entrenched CEOs either have no effect or decrease the likelihood of firms hiring pay consultants. Other "rational" economic determinants, e.g. corporate governance and ownership structure among others, help explain the hiring choice. Finally, we examine whether the effect of compensation consultants on CEO pay

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[1] According to the MPA these relationships arise when nominally independent directors are connected to members of the management team by bonds of interest, collegiality, or affinity.

still exists after incorporating the selection issue in our initial analysis, thus controlling for potential selection biases. Our results cast doubts on the managerial power perspective on the role of compensation consultants and in particular on the claim that powerful CEOs hire consultants to help them extract rents.

This chapter contributes several original findings on the relationship between CEO compensation and the use of compensation consultants. First, using a more comprehensive sample compared to prior UK studies in the area, we find an increasing effect of consultants on total CEO pay; this finding is consistent with the "ratcheting-up" effect predicted by the MPA. We find this effect, unlike prior UK studies, because we use a larger sample which is more representative of the UK population. This allows more variation both in the levels of CEO pay and in the choice of hiring a consultant. Second, our analysis shows that compensation consultants have an increasing effect on the equity based portion of compensation. However, in contrast to other studies we show that they also have a decreasing effect on the salary portion of top-executive pay contracts. This result is important because it indicates that compensation consultants have an effect on the structure of CEO compensation, which is consistent with the calls from market participants for more pay for performance. We appropriately control for potential selection bias issues and our results remain statistically significant.

Finally, our study contributes new insights into the selection process of consultants and the reasons that drive firms to hire them. Different proxies of CEO power appear to be insignificantly or even negatively related to the probability of hiring a pay consultant. In contrast, we show that the complexity of the pay package is a significant factor in the decision to hire a consultant. These results point towards the conclusion that compensation

consultants are not considered as part of the agency problem, as argued by the MPA, but as part of the solution, i.e. contribute towards the achievement of an optimal contract.

2.2. Prior Research

The majority of the relevant literature studies the role of compensation consultants on the determination of the levels and structure of executive pay. Bebchuk et al. (2002) provide a "managerial power" perspective on the determination of executive pay, where consultants play a sinister role. Company executives achieve excessive remuneration in the form of rents, based on the power that they have within a firm and consultants are hired to assist them to "camouflage" (p.791) and justify their pay. This camouflage comes mostly through the use of tools that consultants are using for the determination of executive pay, e.g. remuneration surveys and compensation peer groups, as a number of studies claim (Baker et al. 1988; Bizjak et al. 2008; Murphy 1998; Wade et al. 1997).

There are only a few studies examining empirically this line of argument. In the US, managerial compensation levels are higher for firms that use consultants compared to those that do not, after controlling for other economic determinants of executive pay (Conyon et al. 2009; Armstrong et al. 2010). However, this result does not seem to hold for UK firms (Conyon et al. 2009). Moreover, compensation consultants have an increasing effect on the equity based part of executive pay both in the US and the UK (Conyon et al. 2009). With the use of matching pairs for economic and corporate governance characteristics, Armstrong et al. (2010) show that the higher pay in firms with consultants can also be attributed to differences in corporate governance and not solely to the choice of hiring a consultant. Finally, Kabir and Minhat (2010) examine the practice of firms hiring multiple

compensation consultants on CEO pay and find that CEOs receive higher equity-based pay in firms with multiple compensation consultants. Moreover, the market shares of compensation consultants are positively related to CEO compensation.

An issue that has also concerned two studies is the incentives of compensation consultants and whether their advice could be biased in the presence of potential cross-selling interests. Cadman et. al (2010) find that firms which hire consultants with higher conflicts of interest (i.e. consultants that also offer non-compensation related consultancy services to their clients) do not have higher levels of total pay or lower pay performance sensitivity. Their results do not change significantly after controlling for selection biases. Unlike Cadman et al. (2010), Murphy and Sandino (2010) find some evidence that CEO pay is higher in US firms which have hired compensation consultants firms for extra services. Their results are stronger for Canadian firms.

To our knowledge, this is the first study that directly tests the arguments of the MPA regarding the role of compensation consultants and in particular, the relationship between CEO power and the consultant choice. Other studies test different arguments of the MPA as developed by Bebchuk et al. (2002). Conyon and He (2004) show evidence that the inclusion of insiders or other firms' CEOs in the compensation committee does not increase CEO pay or decrease the use of equity based incentives. Moreover, Hall and Murphy (2003) argue that rent-seeking CEOs will not prefer option-based to cash payments for "camouflaging" reasons, since Securities and Exchange Commission (SEC) rules make the cost of options very transparent to the shareholders. There is a number of studies that examine different arguments of the MPA and their results, similarly to ours, collectively put its predictions in serious doubts (Murphy 2002; Holmstrom and Kaplan 2003; Perry and Zenner 2001; Gabaix and Landier 2008).

Using a more comprehensive sample of UK firms from the FTSE 100, 250 and Small Cap indexes of the London Stock Exchange compared to other studies (Conyon et al. 2009), we investigate the whole structure of UK CEO pay. As we show later in our chapter, there is a significant clustering of pay consultants in the UK market and this implies that a large sample of firms is needed in order to draw safe conclusions- a fact that has been overlooked by prior UK studies. More importantly, we also test for biases in the consultant selection process in a more appropriate way compared to Cadman et al. (2010). Overall, we believe that our study gives a more comprehensive and to a certain extent different perspective of the relationship between CEO compensation and pay consultant selection. In effect, our MPA based approach to the consultant selection issue and the mixed evidence we get on the impact of pay consultants on equity and cash based CEO pay reflects a different perception of the role of compensation consultants in the CEO pay determination process.

2.3. The UK Setting

There are a number of reasons why a study of the use of consultants by UK firms is interesting. The level of disclosure in executive compensation practices by UK firms is unique in Europe and can only be compared with that of the US market (Bauwhede and Willekens 2008). The remuneration committee reports in UK firms' annual reports provide not only detailed information on the levels and structure of executive pay, but also comprehensive details on the outside consultancy that the committee hires. This information has been available for US firms under legislation introduced in as late as 2006 (Securities and Exchange Commission 2006), which requires the provision of a "Compensation Disclosure and Analysis" (CD & A) report in the annual proxy statements

of firms that also includes the disclosure of the use of compensation consultants. For the UK market, detailed corporate governance information has been available since the introduction of the initial Combined Code on Corporate Governance (1998), and sufficient details on compensation consultants are available since 2003. Apart from the similarity in disclosure requirements and hence information availability, the two markets, i.e. US and UK, differ significantly.

Even though the UK has a stock market based economy, like the US, it arguably has a number of features that distinguish it from the US economy. Bush (2005) argues that UK shareholders are more powerful than US shareholders and that there are significant differences in their rights and responsibilities. Institutional ownership in the UK is far more concentrated compared to the US. UK institutional shareholders hold a much higher collective percentage of shares of quoted companies, compared to their US counterparts (Mallin 1996) . Moreover, the UK corporate governance framework is mainly based on codes of good practice and recommendations, while the US one entails more legislative features. In addition, although very similar in many aspects, there are significant executive pay differences between the UK and US that are mainly attributed to cultural disparities (Conyon and Murphy 2000). For example, there is a higher degree of tolerance for highly paid executives in the US compared to the UK. All these parameters can have important implications for the intra-company power sharing as well as the CEO's ability to extract "rents", as defined by Bebchuk et al. (2002). Thus, the investigation of the managerial power predictions in the UK is not only important but gives indirect evidence on the effect of market-wide governance systems on firm specific issues.

2.4. Theoretical Development

2.4.1. The Role of Pay Consultants under a Managerial Power Perspective

All our main hypotheses are related to the predictions of the MPA, as developed by Bebchuk et al. (2002). The MPA should not be viewed as a new theory, but rather as an extension of the classic agency theory model. It attempts to explain executive pay related practices that do not seem to be in accordance with optimal contracting. Although the underlying assumptions of agency theory still hold under the MPA, there are different assertions regarding which side, i.e. CEO or shareholders, the power lies within the pay determination process. Under a managerial power perspective, powerful CEOs hire compensation consultants to help them receive and "camouflage" excessive pay packages. The pay consultants appreciate the intra-company power relationships and align their interests with those of the entrenched CEOs and not the shareholders. As Bebchuk et al. (2002) speculate, the threat of CEO involvement in the consultant selection process is sufficient enough to incentivize pay consultants to act at the CEO's interest.

One of the main flaws of MPA, as also pointed out by some of its contenders (Murphy 2002; Weisbach 2007), is the fact that it is difficult to test empirically. However, many studies take its predictions for granted when testing various relationships within corporations (e.g.,Grinstein and Hribar 2004; Hanlon et al. 2003). Our setting provides a unique opportunity to test some of the main predictions of the MPA regarding the level and structure of CEO pay as well as the role of pay consultants in this pay determination process. We examine two central empirical issues capable of shedding light on the MPA, namely that compensation consultants have a direct effect on the structure of the CEO pay contract since they help the CEOs justify rent extraction, for example by increasing the

cash compensation of CEOs (Bebchuk et al. 2002, p. 790); also that powerful CEOs wish to employ consultants in order to facilitate the above process (p. 789).

We first investigate the effect of consultants on the levels and structure of CEO pay. A "ratcheting-up" effect of consultants on the total levels of pay would be in line with the MPA, since it would be an indication that pay consultants are being hired by CEOs to assist them with the justification of excessive pay. In the same context, any such rent extraction should be mainly driven from an increase in the levels of the non-incentive (salary) part of pay, since it is this part of compensation that does not require any additional effort from the CEO, as opposed to incentive based compensation (short-term bonuses, options and LTIPs) which is normally tied to firm performance. Therefore, if the MPA is correct, we should expect a positive effect of pay consultants on the salary component of total CEO compensation.

If the MPA is correct, we would not expect rent extraction by managers to be channeled through an increase in the levels and proportions of incentive based compensation. Empirical evidence that consultants influence firms towards the choice of more incentive based forms of pay, would raise doubts about the MPA. Incentive-based executive pay plans facilitate a risk shifting from shareholders to risk-averse managers. There have been cases of mistreatment of such plans with the use of schemes which are less sensitive to firm performance, for example the options backdating scandal (Bernile and Jarrell 2009). Still, under the MPA, CEOs, like any utility maximizing agent, would prefer to achieve their "excessive" compensation through an increase in their basic (salary) part of pay, which is broadly insensitive to performance, and not via an increase in their incentive based compensation, even if the latter is less sensitive (than optimal) to performance. This is because risk-averse agents would prefer to minimize the risk shifting from shareholders

to them. According to Hall and Murphy (2002), managers require a premium to exchange their cash compensation for stock options, even for in-the-money ones. This implies that an element of risk shifting is present in any form of equity based pay, even the sub-optimally set ones. In addition, we believe that such practices are the exceptions to the rule, as amply illustrated by the extent of the above mentioned scandal. In markets with high levels of transparency, like the US and the UK, these practices are not expected to be widespread and systematic. The recent financial crisis, which has put managerial compensation in the spotlight, has illustrated that it is systematic widespread errors on incentive setting, rather than issues of "camouflaging" that can cause havoc in the markets. The emphasis on short term, market share growth incentives, which lead to excessive managerial risk-taking, is highlighted as one of the main reasons for the recent crisis (Bebchuk and Fried 2010).

Therefore, we argue that a positive relation between equity based pay and the use of pay consultants would serve as an indication that consultants urge firms to use pay plans that tie managers' pay to shareholders' wealth.

More formally, our three main hypotheses are:

Hypothesis 1: *Pay consultants have an increasing effect on the levels of total CEO pay.*

Hypothesis 2: *Pay consultants have an increasing effect on the salary level and proportion of CEO pay.*

Hypothesis 3: *Pay consultants have a non-positive effect on the level and proportion of incentive based CEO pay.*

Empirical evidence on the decision to hire a compensation consultant is also potentially relevant for assessing the MPA. The notion of CEO power is extremely important in the MPA. According to Bebchuk et al. (2002), in all firms with dispersed ownership the CEO

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has a certain degree of power which provides opportunities for rent extraction. However, depending on the combination of specific firm/CEO characteristics (e.g. CEO ownership and tenure, board independence, existence of large institutional shareholders) the power of the CEO can vary. Ceteris paribus CEOs achieve higher levels of rent extraction in firms where their power is higher. However, a serious impediment to their ability to extract rents is the potential outrage costs that their behavior may generate. CEOs thus need the pay consultants to offer "legitimacy" to the pay practices adopted by the firm (Bebchuk et al. 2002). Since pay consultants potentially play an important role in the rent extraction process, the MPA would predict that powerful CEOs will try to be "heavily involved" in the decision to hire a consultant to assist them in the justification of their excessive pay.

Although the decision to hire a consultant in the UK is taken by the compensation committee, which consists of non-executive, independent directors, a powerful CEO will indirectly control the consultant hiring choice "given the considerable influence of the CEO and the CEO's management team over the board…" (Bebchuk et al. 2002, p. 785). The CEO will then use the pay consultant as an additional "tool" for the design and validation of a pay package that will serve her personal interests. Therefore, we would expect that the probability of hiring a pay consultant increases with CEO power. As Bebchuk et al. (2002, p.789) report there is only "anecdotal" evidence that CEOs play an important role in the choice of a consultant. Therefore, our setting gives us a unique opportunity to empirically test for this fundamental argument of the MPA.

So our fourth hypothesis is:

Hypothesis 4: The probability of a firm hiring a pay consultant increases with CEO power.

2.5. Research Design

2.5.1. Main Models

We test for the effects of compensation consultants on CEO pay with the use of the following regression models:

$$Level\ of\ CEO\ Pay = \beta_0 + \beta_1 * consultant\ dummy +$$

$$\beta_2 * other\ compensation\ related\ variables + \varepsilon_i \qquad (2.1)$$

$$Proportion\ of\ CEO\ Pay = \beta_0 + \beta_1 * consultant\ dummy +$$

$$\beta_2 * other\ compensation\ related\ variables + \varepsilon_i \qquad (2.2)$$

In total we run seven different regressions. The first four refer to the levels of CEO pay (equation 2.1), and the dependent variables are total CEO pay, salary, bonus and equity based compensation levels. The remaining three refer to the proportions of CEO pay (equation 2.2) where as dependent variables we use three different ratios: salarymix which is calculated by dividing salary compensation to total pay, a bonusmix ratio which is equal to cash bonus divided by total pay and finally an equitymix ratio which is derived by dividing equity based pay (options and LTIPs) to total compensation. Our main independent variable is a consultant dummy, which takes the value of one when a firm has hired a consultant and the value of zero when it has not hired one. Apart from the compensation consultant dummy, we also use variables that control for firm and market characteristics that the literature has shown as having an effect on executive compensation. Extra attention is paid to the definition of the variables that proxy for CEO power and board independence since they have an important role in the managerial power framework.

For the effect of CEO power on the choice of hiring a pay consultant we run the following probit model where the main dependent variable is the consultant dummy previously described:

$$Consultant\ Dummy = \delta_0 + \delta_1 * CEO\ power +$$

$$\delta_2 * other\ selection\ related\ variables + \varepsilon_i \qquad (2.3)$$

We measure CEO power using variables mentioned in Bebchuk et al. (2002) (i.e. CEO ownership and tenure). We additionally control for firm specific characteristics that, based on prior literature, we expect to have an impact on CEO power, e.g. corporate governance mechanisms, ownership structure. This gives us the opportunity to explicitly test for the conditions that can tilt the power balance between the CEO and the shareholders within a firm's environment. Moreover, we identify, mainly from the auditing literature, a number of additional variables that could have an effect on the choice of hiring a consultant.

2.5.2. Data

For this study we collect data on UK firms for the year 2006. The existing regulatory framework provided the opportunity to have all the necessary information needed for our study. According to the Combined Code on Corporate Governance (Financial Reporting Council 2003), firms should inform investors about the levels and structure of executive compensation and also about the compensation consultants that are hired to assist the compensation committee.

Our full database consists of 500 firms from the FTSE 100, 250 and Small Cap Indices. FTSE 100 represents the 100 firms with the highest capitalisation in the London Stock Exchange, FTSE 250 the 101st to the 350th largest firm, while FTSE Small Cap consists of 300 firms outside the 350 companies included in FTSE 100 and 250. We exclude from our sample investment trusts and a small number of firms for which we could not find detailed compensation data (in total 150 firms). For executive compensation and consultants' data we use the BoardEx database and we also hand-collect a number of data items from company annual reports. The compensation data contains the levels of salary, bonuses, long term incentive plans (LTIPs, commonly used in the UK instead of share option schemes) and executive stock options. LTIP and option values are taken from BoardEx. For the valuation of LTIPs, BoardEx assumes a 100% realization of the maximum award of the LTIP schemes whether cash, equity, equity matched or option based. Options are calculated based on the latest closing stock price using the Black and Scholes (1973) option pricing model. For other accounting and market variables we use the Datastream, Thomson One Banker and Fame databases.

2.5.3. Other Pay Related Variables

Firm Size. Firm size has proved to be a factor that significantly affects executive pay. Murphy (1985; 1998) shows that firm size is positively correlated with executive compensation. This is quite reasonable: The best and most highly paid executives will be attracted by bigger firms. Moreover, Aggarwal and Samwick (1999) show that in bigger firms, the marginal value of the managerial output is higher. As a proxy for firm size we use the book value of the firm's total assets for 2006.

Firm Risk. According to agency theory managers will receive lower incentives (lower pay performance sensitivity) the greater the variance in firm performance (Harris and Raviv 1979; Lambert 1983). However, whilst a number of studies have found evidence consistent with this negative relationship (Aggarwal and Samwick 1999; Lambert and Larcker 1987) other studies have taken a managerial ownership view to the issue: The riskier the firm environment, the higher the information asymmetry between the managers and shareholders and, thus, shareholders need to provide managers with higher incentives so as to act for their interests (Core and Guay 1999). So they predict a positive rather than a negative correlation between firm risk and managerial incentives. For this reason it is rather hard to predict the effect that firm risk will have in our models. To control for firm risk we include the volatility of the firm's stock returns and dummies for the industry in which the firm operates. Volatility is taken from Datastream; it is calculated as the standard deviation of the weekly stock price returns during the previous 12 months.

Firm Performance. The performance of the firm has also proved to have a marked effect on executive compensation. From an agency theory perspective, the objective of executive pay is the alignment of interests between managers and shareholders, so as to ensure that managers act to increase shareholders' wealth. Many studies have tried to calculate to what degree executive pay changes after a change in firm performance. Jensen and Murphy (1990) calculate pay performance sensitivities, whereas Murphy (1986) calculates pay performance elasticities. However, "neither the sensitivity nor elasticity approach strictly dominates the other" (Murphy 1998, 31) as each one proxies for different things. Although both market and accounting based variables have been used in other studies to proxy for firm performance, as Conyon et al. (2000) point out, a market based measure is more insightful. Therefore, we include in our model the annual stock return calculated using data retrieved from Datastream. The choice of the compensation measure for the calculation of

the changes in executive pay is another issue of debate. A number of studies only use changes in the cash part of compensation (salary and bonus), ignoring the long term emoluments of a manager, while other studies use changes in total compensation. As Conyon et al. (2000) point out, the use of changes in cash based compensation could be reasonable for previous decades where the cash component was the most important part of executive pay. However, the equity based part of compensation has increased enormously in recent years. In order to test these different lines of argument we test the relationship of all different types of compensation, i.e. cash and equity based, to firm performance.

Corporate Governance Variables. Based on agency theory, we should expect large external shareholders to affect the determination of executive compensation, so as to make sure that managers act in their interests. Studies in this issue are quite limited in number and their results are contradictory: Hartzell and Starks (2003) show that institutional investors have a positive effect on pay performance sensitivity and a negative effect on the levels of compensation. This indicates that their monitoring role has a positive impact on minimizing the agency problems between managers and shareholders within a firm. On the other hand, Stapledon (1996) shows that institutional investors are not generally concerned with the total levels of executive pay and they prefer to affect firm decision making on a private rather than a public level. As a proxy for the influence of large shareholders we include in the model a variable (named Institutional Shareholders), which is defined as the sum of the levels of ownership for institutional investors with a stake above 10%. [2]

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[2] We have also tested different ownership thresholds, i.e. 5% and 7.5%, and the results remain qualitatively the same.

CEO tenure is another factor that can affect executive compensation. Murphy (1986) shows that the relationship between CEO compensation and stock return declines with CEO tenure. This result can be viewed from two perspectives: From an agency theory viewpoint, this can mean that as time elapses, firms increase their trust in CEOs and it is easier for them to evaluate their productivity, so it is no longer necessary to base their pay on accounting and market targets. However, from a managerial power view this could mean that CEOs increase their power within the firm as time goes by, so they change their pay structure to suit their own preferences. In line with this argument, Fredrickson et al. (1988) use, among other variables, CEO tenure as a proxy for the power that the CEO has within the firm. For tenure, we have collected the number of years that a CEO is in that position through BoardEx and firms' annual reports.

Board characteristics. Two main features of a firm's board have been identified by previous studies as significant in the determination of executive pay; the existence and the membership of a compensation committee and the proportion of non-executive directors in the firm's board. A number of studies (Main et al. 1995; Newman and Mozes 1999) show that the inclusion of an executive director in the remuneration committee leads to higher levels of pay. The results by Conyon and Peck (1998) point in the same direction. In our data collection we find that a very small number of firms, following the recommendations of the Combined Code (Financial Reporting Council 2003), have an executive director on their compensation committee, therefore we only include in our model the number of compensation committee members. Based on the literature on the relation between board, and other committees' size and their effectiveness (Carcello and Neal 2000; Raheja 2005), we cannot be certain that a larger compensation committee is more effective because of the potential existence of bureaucratic and free rider problems. However, given that the compensation committee members are all non-executive, it is more likely that a larger

compensation committee would have a broader range of opinions and consist of members with greater/more diverse corporate experiences.

An internal control mechanism for the managers of the firm is the board of directors which should act as the shareholders' representative (Fama and Jensen 1983). Greater independence of the board leads to increased monitoring of the CEO's actions. Therefore, it is vital that we control for the board composition in our analysis. There have been a number of studies that examine the role of the board of directors in the determination of executive pay. Finkelstein and Hambrick (1989) have shown that the monitoring by the board tends to reduce CEO pay, a result supported by Boyd (1994). To proxy for the board independence we include in our analysis a ratio of the number of non-executive directors divided by the total members of the board.

Growth Opportunities. Based on Smith and Watts (1992), firms with higher growth opportunities (defined by the book to market ratio as an inverse proxy for them) are expected to have higher levels of managerial compensation and use more incentive based plans. In these firms, managers cannot be easily monitored and they also operate in riskier environments, hence the need for greater alignment of interests. Moreover, firms with high growth potential are expected to have lower dividend yield, since they have more investments and lower free cash flow (Jensen 1986). Therefore, we expect that dividend yield to have a negative correlation with the levels of executive pay and equity based plans. Thus, we include in our analysis both the book to market ratio and dividend yield. Both variables are calculated using data collected from Datastream.

Leverage. According to John and John (1993), leverage is a factor that affects managerial compensation. In levered firms an optimally designed executive pay package minimizes

not only the agency costs of equity, but also the agency costs of debt. In their theoretical model they predict a negative correlation between leverage and pay performance sensitivity. Moreover, higher growth firms have less debt (Myers 1977) and thus lower leverage. As previously analyzed this leads to lower levels of compensation and pay performance sensitivity. Therefore, we expect a negative correlation between the level of, as well as the portion of incentive based, executive pay and leverage.

2.5.4. Consultant Selection Related Variables

For the consultant selection model, we use a number of additional exogenous (non-CEO pay related) variables, apart from the ones described in the previous part of this chapter.

CEO Power. This effect is of major concern in the selection model. Therefore, in addition to CEO tenure, and in order to further control for the effect of CEO power on the decision to hire a consultant we include an alternative proxy for it, namely CEO ownership stake, following Bebchuk et al. (2002, p. 785). They predict that the higher the CEO's shareholdings the higher their power, e.g. greater influence on the appointment of other directors, greater ability to thwart/discourage a hostile takeover. We control for this effect by including in our analysis the percentage of the firm's outstanding shares in the hands of the CEO in 2006.

Pay Package Complexity. We believe that the complexity of a compensation package is an important reason for firms to hire an outside consultant to assist them. For this reason, we include the number of equity based plans (options and LTIPs) awarded to the CEO for the year as a proxy for a firm's CEO pay complexity. The higher the number of plans

awarded to the CEO for the year, the more complex their contract is; therefore, the higher the probability of hiring a compensation consultant.[3]

Fees and Location. Based on the auditor independence literature (Abbott et al. 2003) we use a number of variables that are indicative of the willingness of a firm to seek outside consultancy and of the degree of activism of the board of directors, since a more active board of directors will have a lower need for outside consultants.. Thus, we include the value of audit fees and a ratio of non-audit services fees to total fees. Moreover, the location of a firm can have an effect on the fees charged by pay consultants and consequently this could affect the choice of a firm to hire a consultant. Unfortunately, data on the fees charged by pay consultants are not disclosed. However, we believe that a firm that is located outside London is less likely to hire a compensation consultant, since the majority of consultants are based in London. Therefore, we include in our model a dummy for the location of the firm (whether it is located in or outside London). The values of audit and non-audit fees, and the location of the firm are taken from FAME database.

Industry Competition. Finally, we believe that companies that operate in competitive industries will hire a consultant to create optimal contracts in order to increase the

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[3] The possibility that it is the consultants who might drive the overall number of option and LTIP schemes has concerned us while trying to model this selection process. However, we believe that this decision is mostly based on long-term firm practices and can only be marginally affected by the current consultant. From an about 10% random sample of our data, we have observed that the number of equity based plans does not substantially change over the years, so this decision does not seem to be seriously affected by pay consultants. In other words, the current consultants might introduce new schemes while allowing prior ones to be phased out (i.e. will not automatically cancel previous schemes). This is also argued by Conyon et al (2011).; firms with higher complexity in their pay packages are more likely to hire a pay consultant (p. 8)

likelihood that they retain their CEOs. This means that in more competitive and homogeneous industries the probability of hiring a consultant is higher. To control for this effect we use the correlations of the stock returns of firms operating in the same industries; a high correlation indicates a homogeneous, thus more competitive, industry (Lang and Stulz 1992).

2.6. Selection Bias

A key issue in modelling the effects of compensation consultants on CEO pay is the need to test whether the systematic differences in CEO compensation between those firms that have hired a pay consultant and those that have not still exist after controlling for potential selection bias in the decision to hire a consultant. We need to control whether CEO pay between firms is different due to the use of a pay consultant, after taking into account the fact that firms could have hired them for reasons not necessarily relevant to CEO pay. Thus, to test the robustness of our results, we incorporate the consultant selection model previously analyzed into our CEO pay models.

The choice of the right selection modeling technique to control for selection bias in this case needs to be thoroughly considered. The use of a Heckman (1979) two-step estimator as in other relevant studies (Cadman et al. 2010) is not appropriate. This is because there is no self-selectivity problem in our (different) settings. In other words, even though we agree that the two subsamples, i.e. firms with consultants and firms without consultants, are not randomly chosen, i.e. selection-bias, we can still observe the CEO packages of firms without a consultant. A Heckman (1979) estimator would be correct only if we wanted to identify the economic determinants of CEO pay in firms with consultants and the CEO pay arrangements in firms without consultants were unobservable. This is clearly not the case

in our setting. We do observe the pay packages of CEOs in firms with no compensation consultants. We simply want to address the non-random selection process. Therefore, although we believe that the choice of our exogenous variables is appropriate, if we use the Heckman (1979) two-step estimator, the results of the second stage equation would only refer to the firms that have hired a consultant and will not answer our research questions.

Another solution would be to run a first stage (probit or logit) selection model and use the predicted probabilities as an independent variable to the second stage main regressions. However, this technique leads to a miscalculation of the standard errors, so our results will not be robust (Heckman and Urzúa 2010). The model we apply is a switching regression model, where we have two different regression equations and a criterion function – equation 2.6, which determines the system of equations to be used (Lee 1978; Maddala 1986).

In our setting, we have a consultant dummy C_i and two forms of pay related variables: P_{ci}, for firms with consultants, and P_{ni} for firms without consultants. The equations for these three variables are:

$$P_{ci} = \theta_{c0} + \theta_{u1}X_{ci} + \varepsilon_{ci} \qquad (2.4)$$

$$P_{ni} = \theta_{n0} + \theta_{n1}X_{ni} + \varepsilon_{ni}$$

$$(2.5)$$

$$C_i = \delta_0 + \delta_1 X_i + \delta_2 Z_i + \varepsilon_i \qquad (2.6)$$

where $X_i^{'}$ is the vector of all pay related variables discussed in the previous section and $Z_i^{'}$ is the vector of the exogenous variables related to the consultant selection (i.e.fee ratio, complexity).

In any case, we can observe the consultant variable C_i and the limited dependent variable P_{ci} or P_{ni}. The observed pay related variable depends on the existence of a consultant, so we can observe:

$$P_{ci} \text{ when } C_i=1 \text{ and}$$

$$P_{ni} \text{ when } C_i=0, \text{ but never both.}$$

Therefore, we have a simultaneous equations model. An issue with this model, as Lee (1978) shows, is that the pay related equations cannot be consistently estimated using ordinary least squares. The problem is that

$$E(\varepsilon_c|I_i=1) \neq 0 \text{ and } E(\varepsilon_n|I_i) \neq 0.$$

Lee (1978) proposes the following solution to this problem. We first run equation (6) to estimate δ_0, δ_1, δ_2 as a normal probit model and get the consistent estimators $\hat{\delta}_0, \hat{\delta}_1, \hat{\delta}_2$. Conditional on the choice of a consultant the pay related equation for firms with consultants is:

$$P_{ci} = \theta_{c0} + \theta_{c1} X_{c1} + \sigma_{1\varepsilon}\left(-\frac{f(\Psi_i)}{F(\Psi_i)}\right) + \eta_c \tag{2.7}$$

where $E(\eta_c|I_i) = 0$, $\Psi_i = \gamma_0 + \gamma_1 X_i + \gamma_2 Z_i$. F is the cumulative distribution of a standard normal random variable and f is its density function. Similarly, conditional on the choice of not hiring a consultant the pay related equation for firms without a consultant is:

$$P_{ni} = \theta_{n0} + \theta_{n1} X_{n1} + \sigma_{2\varepsilon}\left(-\frac{f(\Psi_i)}{1-F(\Psi_i)}\right) + \eta_n \tag{2.8}$$

, where $E(\eta_n|I_i) = 0$.

The parameters (θ_{cj}) can be estimated by regressing the pay related variable P_{ci} on X_{ci} and

, where $\hat{\Psi}_i = \hat{\gamma}_0 + \hat{\gamma}_1 X_i^{'} + \hat{\gamma}_2 Z_i^{'}$. In the same way we estimate the parameters

(θ_{nj}). With this two stage estimation, which Lee (1978) shows it gives consistent

estimations, we can find the average differences in the levels and the structure of executive

pay between firms that have a consultant and those that do not; we also control whether

these differences are significant. We do this by using the predicted values $\hat{P}_{ci}$ and $\hat{P}_{ni}$ for

each of the pay related variables:

$$\hat{P}_{ci} = \hat{\theta}_{c0} + \hat{\theta}_{c1} X_{c1} \text{ , for firms with consultants and}$$

$$(2.9)$$

$$\hat{P}_{ni} = \hat{\theta}_{n0} + \hat{\theta}_{n1} X_{n1}, \text{ for firms without consultants.}$$

(2.10)

The differences are derived by subtracting the predicted values from equations (2.9) and

(2.10). If we find them to be significant, then this will indicate that the effect of a

consultant on CEO pay still exists, after correcting for selection biases.

2.7. Results

2.7.1. Descriptive Statistics

Table 2.1 reports descriptive statistics on the number of firms using compensation

consultants. Almost 75% of the firms in our dataset have hired one or more compensation

consultants. By index, 86% of the FTSE 100, 88% of the FTSE 250 firms and 52% of the

Small Cap firms have one or more consultants. Thus, we observe, as expected, that small

firms are less likely to hire a compensation consultant. This highlights the need for the examination of many data points of the firm size distribution; a small cross-section, based on bigger market capitalization firms, e.g. FTSE 100 or FTSE 250, would ignore this size effect.

From the 366 firms in our sample that do have a consultant, 22% hired two or more. This practice is more pronounced in FTSE 100 and FTSE 250 firms, where one out of three and a quarter of the firms respectively, hired more than one compensation consultant. On the other hand, only 6% of the Small Cap firms hired two or more remuneration consultants. This result is an indication of the complexity of executive pay determination in bigger firms, compared to smaller firms. It also shows that better resourced firms have the opportunity to employ more expert opinions.

Insert Table 2.1 about here

In Table 2.2, we focus on individual compensation consultants. The first and second columns show the number of the firms and their percentages in relation to the total number of observations (so, for example, for firms with two consultants we have two observations).

We observe a very high market share for New Bridge Street consultants. Almost half of the firms in our sample have chosen New Bridge Street as their compensation consultant. Towers Perrin seem to be the second most dominant "player" in the pay consultant market but, as we point out below, with a portfolio of customers of very high quality which comprises mostly of firms from the FTSE 100 index. Watson Wyatt, Deloitte & Touche and Kepler Associates follow with lower market shares.

Insert Table 2.2 about here

Table 2.3 presents an analysis of the portfolio of customers for each consultant. As previously mentioned, we find that Towers Perrin is in the first position among FTSE 100 firms with New Bridge Street coming second. This indicates that Towers Perrin has a focus on bigger clients. New Bridge Street, on the other hand, has a different client-targeting approach focusing primarily on smaller clients. As reported in the table, almost 50% of the FTSE 250 and 56% of the FTSE Small Cap firms have chosen New Bridge Street as their compensation consultant. This result is indicative of a clustering effect and it shows that specific compensation consultants aim at specific segments of the UK cross-section.

Insert Table 2.3 about here

Table 2.4 reports descriptive statistics on the variables used in our analysis, while Table 2.5 shows the correlations between these variables. We observe that the average total CEO pay in our sample is more than 3.0 million USD. Moreover, the average equity based pay (options and LTIPs) is more than double the average salary pay at almost 1.6 million USD. The average number of option and LTIP packages (CEO pay complexity in the table) is 1.6. For the quartile of firms with the highest CEO pay the average complexity increases to 2.51, while for the ones in the lowest pay quartile decreases to 0.72 (untabulated results). All our variables are positively skewed, while the kurtosis in the pay variables and total assets is relatively high.

Insert Table 2.4 about here

2.7.2. Main Results

Table 2.6 shows the results of our main multivariate regressions on the levels of top-executive pay. Column 1 illustrates the relationship between the total levels of CEO compensation and compensation consultants. The coefficient of the compensation consultant dummy is positive and highly statistically significant (t = 2.23, $p<.05$). This result is consistent with the "ratcheting up" effect of consultants on CEO pay that other studies have shown for US firms (Cadman et al. 2010; Conyon et al. 2009; Murphy and Sandino 2010) and thus we confirm Hypothesis 1. We note that Conyon et al. (2009) did not find this result for their UK sample. The difference between their results and ours may be explained by our use of a larger and more comprehensive sample. Our result indicates that firms that hire compensation consultants in the UK, as in the US, are more likely to have higher CEO compensation levels than those that have not hired a consultant.

Columns 2, 3, and 4 of table 2.6 show the effect that pay consultants have on the levels of different components of the top executive pay package. While US studies (Cadman et al. 2010) show that firms with pay consultants have higher levels of salaries, bonuses and equity based compensation we do not find this to be the case for UK firms, where it appears that consultants have no statistically significant effect on the level of the CEO's salary. This result contradicts the findings of Wade et al. (1997) and the relevant prediction of the MPA (Bebchuk et al. 2002) that CEOs, with the help of pay consultants, are using the non-incentive part of their pay to increase their emoluments. Thus we are unable to confirm Hypotheses 2 and 3 in terms of salary and incentive-based pay levels respectively, thereby raising doubts about the predictions of the MPA.

Table 2.7 reports the relationship between compensation consultants and the salary, bonus and equity based proportions of CEO pay. The coefficients on compensation consultants are also highly significant in these specifications. Compensation consultants have a negative effect on the salary mix ($t = -3.04$, $p<.01$) and a positive effect on the equity mix ($t = 2.51$, $p<.05$). Therefore, we reject Hypotheses 2 and 3 in terms of non-incentive and equity based proportions of CEO pay respectively, thereby raising further doubts about the predictions of the MPA. This result indicates that compensation consultants have an increasing effect on pay performance sensitivity, since equity based compensation, which typically generates the majority of managerial incentives in a pay package, is increased under the advice of a consultant. Our results also show that the increase in the total levels of CEO pay that we previously analysed is driven by an increase in incentive based compensation and not by salaries. This demonstrates that, after controlling for firm size, firm risk, firm performance and corporate governance effects, compensation consultants influence firms to choose forms of CEO pay that incentivise managers to act in the shareholders' interests. We also observe that consultants have no effect on the proportion of short-term incentive based compensation in the CEO pay package, i.e. cash bonuses as a proportion of total pay.

Tables 2.6 and 2.7 also confirm a highly significant firm size effect on the levels and structure of CEO compensation. Larger firms have higher levels of CEO pay ($t = 5.04$, $p<.01$) and higher proportions of long-term equity based pay ($t = 4.41$, $p<.01$). On the other hand, large firms have lower salary and short-term incentive based proportions of CEO compensation. This result indicates that larger firms have a greater preference for long term incentive based forms of managerial compensation, most probably because they can bare their cost. Dividend yield is negatively correlated with total pay and the proportion

and level of bonuses, while book-to-market is positively associated with salary; these results are consistent with the predicted effects of firm growth opportunities and free cash flow issues discussed in the previous part of this chapter. Leverage has a negative effect on the levels of total pay and on the proportion of short term incentive based pay. The existence of a higher number of non-executive directors is positively correlated with the levels and proportions of equity based pay and negatively with the proportions of salary and bonuses, which highlights the push of non-executive directors for more equity based pay-performance sensitivity. Moreover, an increase in the number of members of the compensation committees drives total CEO pay to higher levels but again this is mainly due to higher equity based compensation. Finally, as expected, an improvement in firm performance results in higher (short-term performance related) bonuses (both in level and as a proportion of CEO pay).

Insert Table 2.6 about here

Insert Table 2.7 about here

2.7.3. Consultant Selection and Selection Bias

Table 2.8 reports the results of the consultant selection models. In Column 1, both proxies of CEO power, i.e. CEO tenure and ownership, are not significantly related to the probability of hiring a consultant. This is direct evidence against the predictions of the managerial power hypothesis and leads us to reject hypothesis 4. Moreover, we observe that complexity, proxied by the number of stock option and LTIP schemes awarded to the CEO during the year, is positive and highly significant ($t = 3.07$, $p<.01$), which shows that the more complex the compensation package the more likely the firm is to hire a

consultant. From Column 1, we also observe that the level of the audit fees and the fee ratio are positively correlated with the probability of a firm hiring a consultant. This confirms our expectations that firms with higher propensity to hire outside consultants will also hire a compensation consultant for advice on the determination of the CEO pay package. Moreover, we observe that firms with a higher proportion of non-executive directors in their board and a higher number of compensation committee members are more likely to hire a compensation consultant to advise them about the CEO pay package.

Table 2.8 also shows the results of the models we have run to control for selection bias. We only focus on total levels and the salary and equity proportions of pay as they have been our main focus in this study. Columns 2, 4 and 6 show the results for firms that have hired a consultant and columns 3, 5 and 7 for firms without a compensation consultant. The selectivity correction coefficients are highly significant in all models, which confirms the need to correct for selectivity bias. Moreover, we do not observe any other significant changes in our results.

The next step is to subtract the relevant predicted values from the regressions we run and check whether the average differences between firms with and without a consultant are significant (so we subtract the predicted values for columns 2&3, 4&5 and 6&7). This is what we do in Table 2.9 where we see that the average differences are significant at the 1% level. More importantly, we show that there is a positive difference in the total levels of pay and the proportion of equity based compensation and a negative difference in the salary proportion between firms with and without a pay consultant. This confirms our result that the "ratcheting-up" effect of pay consultants on the levels of CEO pay is driven by an increase in the portions of incentive based compensation and a decrease in the salary percentage of pay.

Insert Table 2.8 about here

Insert Table 2.9 about here

In Table 2.10, Column 1, we report separate results of the selection model for the top quartile of our firm sample in terms of total CEO compensation. We show that corporate governance variables have a significant effect on the decision to hire a pay consultant for the top quartile of our sample. In the case of firms with the highest CEO compensation levels, which typically are the largest ones from the FTSE 100 and 250 indices, institutional shareholders demand the hiring of a compensation consultant. This is an important result, as it indicates that in large firms where corporate governance mechanisms are strong and effective, compensation consultants are viewed by shareholders as a control mechanism for managers. We believe that this finding is consistent with the UK setting where, as previously analysed, institutional shareholders are regarded as relatively more powerful than their US counterparts. This result becomes even stronger if we take into account the negative and statistically significant correlation between CEO ownership and the decision to hire a consultant. This indicates that entrenched CEOs with high ownership levels try to avoid the use of pay consultants, while shareholders tend to support it. Our findings here suggest that consultants are viewed by shareholders as a positive influence against rent extraction by managers. Finally, Column 1 shows that leverage is positive and statistically significant. This is consistent with the view of debtholders as a monitoring and disciplining force within a corporation. These results again suggest that the hiring of consultants is positively associated with indicators of strong governance in firms where total compensation is high. This is inconsistent with the predictions of the MPA.

The second and third columns, regarding firms in the lowest quartile in terms of total CEO compensation and FTSE Small Cap firms respectively, show that fee ratio and audit fees are highly statistically significant, which indicates that one of the main reasons for smaller firms to hire a consultant, is their tendency to generally hire outside consultancy. In addition, when the pay package is more complex, smaller firms are more likely to hire a pay consultant. Finally, we show that for smaller firms an increase in the number of compensation committee members or in the proportion of non-executive directors makes the hiring of a pay consultant more probable. This indicates that in small firms with stronger corporate governance mechanisms, the possibility of hiring a pay consultant is higher. This result strengthens our argument derived from Column 1 that pay consultants are viewed as a control mechanism for managers' pay.

Insert Table 2.10 about here

To further test the robustness of our results, we use alternative variable specifications to capture the effect of large institutional shareholders on the determination of the levels and the structure of CEO pay. In particular, apart for the sum of the levels of ownership for institutional shareholders with a stake above 10%, we alternatively use the levels of ownership of the five largest shareholders without the use of a 10% threshold and the ownership levels of the top institutional shareholder. Moreover, we use different ownership thresholds (5% and 7.5%). We observe that the effect of the different ownership variables on the levels and structure of the CEO pay does not change (untabulated results). There is also no change in the sign and significance of the other independent variables used in the model.

We also take into account the fact that the choice of hiring a consultant can be based on past firm attributes rather than contemporaneous ones. For this reason we re-estimate the selection model by using lagged variables and we consequently re-estimate the models that control for potential selection bias. Tables 2.11 and 2.12 show that our results do not change substantially.

Insert Table 2.11 about here

Insert Table 2.12 about here

2.8. Conclusion

This chapter provides UK results on the influence of compensation consultants on the levels and structure of CEO compensation. Previous studies report results that appear to be consistent with the MPA predictions. Bebchuk et al. (2002) view compensation consultants as co-conspirators with managers seeking to camouflage their pay, so as to avoid public outrage, and predict a "ratcheting" up effect of consultants on management compensation.

We find that a "ratcheting up" effect indeed exists for UK firms similar to that reported by previous US studies (Armstrong et al., 2010; Conyon et al., 2009). However, compensation consultants also exert a positive effect on pay-performance sensitivity and a negative influence on the cash based proportion of CEO pay. Controlling for firm size, risk and performance, as well as corporate governance features, consultants appear to have a positive influence on incentive based compensation. These results are still significant after controlling for consultant selection issues.

We also show that the complexity of a CEO compensation package is an important reason for firms to hire a consultant. Importantly, we find no positive relationship between powerful - entrenched CEOs and the probability of the firm hiring a compensation consultant. Whilst we would not claim that these results conclusively reject the MPA in favor of optimal contracting, we can claim that it is not possible to reject the optimal contracting hypothesis in favor of the MPA on the basis of our consultant choice evidence.

Since pay consultants data for the US is available from 2006 onwards a comparative panel data study between UK and US firms for the use of compensation consultants would be an interesting topic for future research. This would allow capturing not only time-series effects but also the effect of consultant turnover on the pay levels and structure. It would thus help us better understand the dynamics of the relationship between CEO compensation and pay consultants.

It should be mentioned that there two main caveats to the interpretation of our results. First, we need to point out that quantifying the notion of CEO power is a very complex task. Although CEO ownership and tenure have been used in the literature as proxies of CEO power, their reliability still remains relatively weak. Field studies of actual CEO behavior would be an interesting theme for future research and their conclusions could complement the results of this study.

Second, one could claim that compensation consultants reduce (increase) the cash (equity based) component of CEO pay in order to camouflage the extraction of rents, which is still achievable by making equity based schemes less sensitive to firm performance, for example by using in-the-money stock options. In order to provide a definitive answer to

this claim one would need details about individual grants, so as to calculate the overall sensitivity of the CEO's portfolio. These details are not readily available. This is a common limitation to all the empirical studies mentioned in the review of the relevant literature and is driven by data unavailability; hence our study is not immune to it. Despite this, the "camouflage" argument is in any case difficult to substantiate. Also, given the recent public scrutiny over CEO pay arrangements it is difficult to see how UK firms, especially the larger, more visible ones, would get away with such practices. Finally, our results on the selection of pay consultants are unaffected by the camouflage argument. Still, they all point against the predictions of the MPA.

Overall, we believe our results suggest that compensation consultants are not part of the agency problem, as claimed by Bebchuk et al. (2002), but can actually be part of the solution to the problem of designing an optimal executive pay contract. These results entail important practical implications for firms, since the hiring of a compensation consultant can ultimately have a positive effect on the design of a CEO pay contract. Firms should concentrate their efforts on strengthening the internal governance mechanisms; the hiring of outside, expert opinion can help in this direction.

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Tables for Chapter 2

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TABLE 2.1

Number of Firms using Compensation Consultants in Aggregate and per Index in 2006

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The table reports the number of firms in the sample that have hired a consultant or not, in aggregate and per index. The total number of the firms is 500, after excluding mutual funds and firms which we could not get sufficient executive pay data for. The table also shows the number of consultants that firms have hired (one, two or three and more).

	Number of Firms	Without consultants	With Consultants	Number of Consultants		
				1	**2**	**3+**
All	500	134	366	282	55	29
FTSE100	95	13	82	52	17	13
FTSE250	201	24	177	130	33	14
FTSE Smal Cap	204	97	107	100	5	2

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TABLE 2.2

Number of client firms per Compensation Consultant in 2006

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The table shows the number of firms that have hired the respective consultant in each row. The total number of firms that have used consultants is higher than the number of firms that have a consultant in the sample (366) because some firms have hired more that one consultant.

Consultant	Number of Firms using the respective consultant	% on number of firms with consultants in the sample, subject to the use of at least one consultant
Deloitte & Touche LLP	33	9.01%
Kepler Associates	31	8.46%
Mercer Human Resource Consulting	29	7.92%
Monks Partnership	24	6.56%
New Bridge Street	175	47.82%
Towers Perrin	44	12.02%
Watson Wyatt	34	9.29%
Other	132	36.07%
Total	502	137.15%

TABLE 2.3
Portfolio of client firms per Compensation Consultant and Index

This Table shows the number of clients that each compensation consultant has per index. Other consultants are small consulting firms with a small market share and other legal firms.

Consultant	Number of firms		
	FTSE 100	FTSE 250	FTSE Small Cap
Deloitte & Touche LLP	11	19	3
Kepler Associates	13	13	5
Mercer Human Resource Consulting	10	14	5
Monks Partnership	2	4	18
New Bridge Street	25	90	60
Towers Perrin	27	16	1
Watson Wyatt	9	15	10
Other	40	71	21

TABLE 2.4
Descriptive Statistics

This table provides descriptive statistics on all variables that we use in our models. Total pay includes the sum of salaries, bonuses, LTIPs, options and other pay (e.g. pensions) that the CEOs of the firms in our sample received during 2006. Salarymix is a ratio of salary levels to total pay; bonusmix is a ratio of annual bonus levels to total pay, while equity mix is a ratio of equity based pay to total pay. The Institutional Shareholders variable is the sum of ownership levels for institutional shareholders with more than 10% of a firm's total stocks. Dividend yield, leverage, book-to-market and volatility are taken from Datastream for the year 2006. CEO tenure is the number of years that a CEO is at her position in the firm, as taken from Boardex and the firms' annual reports. Non-executives ratio is a ratio of the number of non executive directors divided by the total number of board members. Pay Complexity is the number of options and LTIP packages awarded to the CEO in the year. Compensation committee is the number of the committee members. Values in levels of pay and total assets are in thousand USDs.

Variables	Mean	Median	St.Deviation	Min	Max	Skewness	Kurtosis
Total pay	3,155.99	1,866	3,830.88	27	35,188	4	19
Salary	778.66	654	518,069.90	0	6,540	3.83	32.61
Bonus	625.78	377.50	886,986.70	0	9,607	4.17	27.55
Equity Based Pay	1,572.27	618.50	3,070,689.90	0	35,188	5.29	40.02
Other pay	190.81	95	11.98	0	1,756	2.90	9.89
Salarymix	0.384	0.331	0.217	0	1	0.93	3.56
Bonusmix	0.204	0.194	0.162	0	0.930	1.13	5.05
Equitymix	0.33	0.36	0.25	0	1	0.16	2.26
Dividend Yield	2.35	2.32	1.69	0	8.27	0.53	3.19
Leverage	0.21	0.18	0.19	0	1.33	1.35	6.39
Book-to-Market	0.45	0.39	0.33	-1.20	1.92	0.64	5.47
Total Assets	25,794.11	984.40	160,270.69	1	1,949,167	9.80	104.10
Volatility	5.49	5	2.452	0	20	1.60	7.58
Non-Executives Ratio	0.59	0.60	0.12	0	1	-0.21	3.77
Compensation Committee	3.45	3	1.03	0	8	0.70	5.27
Tenure	5.53	4.3	2.45	0	39.5	1.60	7.58
Institutional Shareholders	15.43	10.60	19.16	0	96.16	1.35	4.26
Pay Complexity	1.60	1.45	1.41	0	9	1.49	6.74

TABLE 2.5
Correlation Matrix

This table shows the correlations between the main variables that we use in our models. Total pay includes the sum of salaries, bonuses, LTIPs, options and other pay (e.g. pensions) that the CEOs of the firms in our sample received during 2006. Salarymix is a ratio of salary levels to total pay; bonusmix is a ratio of annual bonus levels to total pay, while equity mix is a ratio of equity based pay to total pay. The institutional shareholders variable is the sum of ownership levels for institutional shareholders with more than 10% of a firm's total stocks. Dividend yield, leverage, book-to-market and volatility are taken from Datastream for the year 2006. CEO tenure is the number of years that a CEO is at her position in the firm, as taken from Boardex and the firms' annual reports. Non-executives ratio is a ratio of the number of non executive directors divided by the total number of board members. Compensation committee is the number of the committee members. Stock return is the raw annual return of the firm's stock. The asterisks indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ln(total pay)	1.00														
Ln(salary	0.84***	1.00													
Ln(bonus)	0.38***	0.23***	1.00												
Ln(equity)	0.48***	0.25***	0.25***	1.00											
Consultant Dummy	0.21***	0.12***	0.17***	0.28***	1.00										
Institutional Shareholders	-0.01	-0.02	-0.07†	0.03	0.00	1.00									
Non-Executives Ratio	0.16***	0.06	0.00	0.21***	0.21***	0.00	1.00								
Compensation Committee	0.35***	0.13***	0.20***	0.25***	0.28***	-0.05	0.24***	1.00							
Ln(Assets)	0.57***	0.24***	0.25***	0.33***	0.27***	-0.13***	0.18***	0.39***	1.00						
Dividend Yield	0.02	0.04	-0.06	0.09**	0.09**	-0.01	0.02	0.16***	0.27***	1.00					
Leverage	0.02**	0.01	0.02	0.11***	0.14***	-0.05	0.07†	0.12***	0.23***	0.12***	1.00				
Book-to Market	0.00	-0.00	-0.05	-0.02	-0.09**	-0.08†	0.03	-0.09**	0.14***	0.07†	-0.17***	1.00			
Volatility	-0.19***	-0.14***	-0.12***	-0.04	-0.07†	0.16***	-0.06	-0.18***	-0.19***	-0.19***	-0.07	-0.06	1.00		
CEO tenure	-0.07	-0.02	-0.07†	-0.08†	-0.10**	-0.08**	-0.23***	-0.10**	-0.07	-0.05	-0.04	0.04	0.00	1.00	
Stock Return	0.04	0.00	0.22***	0.01	0.00	-0.06	-0.11**	0.03	0.04	-0.29***	-0.08†	-0.12***	0.01	0.04	1.00

TABLE 2.6

Linear Regression on Levels of Compensation on Compensation Consultant Dummies and other Executive Pay related Variables

Total pay is the sum of salaries, bonuses, LTIPs, options and other forms of pay (e.g. pensions) that the CEOs of the sampled firms received during 2006. We use the natural logarithm of all dependent variables. The consultant dummy takes the value of one when a firm has hired a compensation consultant and zero when it has not. The institutional shareholders variable is the sum of ownership levels for institutional shareholders with a more than 10% of a firm's total stocks. Dividend yield, leverage, book-to-market and volatility are taken from Datastream for the year 2006. CEO tenure is the number of years that a CEO is at her position in the firm, as taken from BoardEx and the firms' annual reports. Non-executives ratio is a ratio of the number of non executive directors divided by the total number of board members. Compensation committee is the number of the committee members. Stock return is the raw annual return of the firm's stock. In parentheses we have t-statistics and the asterisks indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance. All estimators are robust.

	ln(total pay)	ln(salary)	ln(bonus)	ln(equity)
	(1)	(2)	(3)	(4)
Consultant Dummy	0.28**	0.11	0.96*	2.20***
	(2.23)	(1.07)	(1.90)	(3.18)
Institutional Shareholders	0.00	0.00	-0.01	0.02*
	(1.05)	(0.46)	(-0.87)	(1.65)
Non-Executives Ratio	0.629	0.07	-2.14	5.21**
	(1.09)	(0.16)	(-1.19)	(2.01)
Compensation Committee	0.08*	0.01	0.40	0.45*
	(1.80)	(0.23)	(1.56)	(1.83)
ln(Assets)	0.23***	0.13***	0.55***	0.60***
	(5.04)	(3.85)	(4.46)	(3.59)
Dividend Yield	-0.09**	-0.03	-0.35**	0.00
	(-2.26)	(-0.88)	(-2.17)	(0.01)
Leverage	-0.79*	-0.45	-1.62	0.67
	(-1.81)	(-1.15)	(-1.30)	(0.42)
Book-to Market	-0.24	-0.07	-0.84	-0.91
	(-1.30)	(-0.51)	(-0.88)	(-0.81)
Volatility	-0.08	-0.07	-0.17*	0.10
	(-1.29)	(-1.26)	(-1.68)	(0.75)
CEO tenure	-0.00	-0.00	-0.06	-0.00
	(-0.39)	(-0.16)	(-1.31)	(-0.14)
Stock Return	0.06	0.02	2.50***	0.44
	(0.40)	(0.16)	(3.22)	(0.50)
Constant	11.44***	12.08***	5.74***	-5.71**
	(17.09)	(24.04)	(2.65)	(-2.04)
Industry Dummies	Yes	Yes	Yes	Yes
R-squared	0.24	0.13	0.28	0.21
Observations	500	500	500	500

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TABLE 2.7
Linear Regression on the Proportions of Compensation on Compensation Consultant Dummies and other Executive Pay related Variables

Salarymix is a ratio of salary levels to total pay; bonusmix is a ratio of annual bonus levels to total pay, while equity mix is a ratio of equity based pay to total pay. The consultant dummy takes the value of one when a firm has hired a compensation consultant and zero when it has not. The institutional shareholders variable is the sum of ownership levels for institutional shareholders with a more than 10% of a firm's total stocks. Dividend yield, leverage, book-to-market and volatility are taken from Datastream for the year 2006. CEO tenure is the number of years that a CEO is at her position in the firm, as taken from BoardEx and the firms' annual reports. Non-executives ratio is a ratio of the number of non executive directors divided by the total number of board members. Compensation committee is the number of the committee members. Stock return is the raw annual return of the firm's stock. In parentheses we have t-statistics and the symbols indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance. All estimators are robust.

	Salarymix	Bonusmix	Equitymix
	(1)	(2)	(3)
Consultant Dummy	-0.07***	-0.00	0.06***
	(-3.04)	(-0.35)	(2.51)
Institutional Shareholders	-0.00	-0.00	0.00**
	(0.84)	(-1.04)	(2.14)
Non-Executives Ratio	-0.18*	-0.17***	0.32***
	(-1.88)	(2.65)	(3.27)
Compensation Committee	-0.01	0.00	0.01
	(-1.46)	(0.31)	(0.99)
ln(Assets)	-0.02***	0.00	0.02***
	(-4.43)	(1.04)	(4.41)
Dividend Yield	0.01	-0.01**	-0.00
	(1.64)	(-2.49)	(0.14)
Leverage	0.03	-0.07*	0.00
	(0.61)	(-1.82)	(0.11)
Book-to Market	0.07*	-0.00	-0.05
	(1.82)	(-0.04)	(-1.21)
Volatility	-0.00	-0.00	0.00
	(-0.76)	(-1.56)	(0.98)
CEO tenure	0.00	-0.00**	0.00
	(1.24)	(-1.98)	(0.12)
Stock Return	-0.03	0.04**	0.00
	(-1.21	(2.00)	(0.01)
Constant	0.95***	0.32***	-0.38***
	(8.92)	(4.41)	(-3.64)
Industry Dummies	Yes	Yes	Yes
R-squared	0.29	0.20	0.24
Observations	500	500	500

TABLE 2.8
Probit Selection Model and Split Linear Regressions controlling for Selectivity Bias

Column 1 presents the results of the probit consultant selection model. The dependent variable is a consultant dummy, which takes the value of one when a firm has hired a compensation consultant and zero when it has not. In the following columns, we split our sample in firms that have hired a consultant (columns 2, 4 and 6) and firms that have not (columns 3, 5 and 7). Total pay is the sum of salaries, bonuses, LTIPs, options and other forms of pay (e.g. pensions) that the CEOs of the sampled firms received during 2006. Salarymix is a ratio of salary levels to total pay; equitymix is a ratio of equity based pay to total pay. The institutional shareholders variable is the sum of ownership levels for institutional shareholders with a more than 10% of a firm's total stocks. Dividend yield, leverage, book-to-market and volatility are taken from Datastream for the year 2006. CEO tenure is the number of years that a CEO is at her position in the firm, as taken from BoardEx and the firms' annual reports. Non-executives ratio is a ratio of the number of non executive directors divided by the total number of board members. Compensation committee is the number of the committee members. Pay Complexity is the number of options and LTIP schemes awarded to the CEO in the year. Fee ratio is calculated by dividing non audit fees to total fees. The levels of audit and non-audit fees are taken from Datastream and from the firms' annual reports. Location takes the value of 1 when a firm is located in London and 0 when it is not. Industry Competition is the standard deviations of the stock returns of firms operating in the same industries. Stock return is the raw annual return of the firm's stock. The selectivity variable is estimated from the selection model that we have run in Column 1 and its definition is given on the bottom of the table. Z is the vector of the exogenous variables that we believe that affect the choice of a consultant but do not have an effect on the CEO pay. In parentheses we have the t-statistics (z-statistics for column 1) and the asterisks indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance.

	All firms	ln(total pay)	ln(total pay)	equitymix	equitymix	salarymix	salarymix
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Institutional Shareholders	0.00	-0.00	-0.00	**0.00***	-0.00	-0.00	0.00
	(0.63)	(-0.40)	(-1.11)	**(1.68)**	(-0.39)	(-0.40)	(0.84)
Non-Executives Ratio	**1.20****	0.41	-0.76	0.07	-0.21	-0.03	**0.43*****
	(2.15)	(1.10)	(-1.40)	(0.61)	(-1.46)	(-0.36)	**(2.80)**
Compensation Committee	**0.19****	-0.01	**-0.15***	**-0.02****	**-0.05****	**0.02****	-0.00
	(2.33)	(-0.37)	**(-1.71)**	**(-2.00)**	**(-2.16)**	**(2.09)**	(-0.35)
ln(Assets)	0.05	**0.17*****	**0.06***	**0.01****	-0.01	**-0.01*****	0.02
	(1.34)	**(8.26)**	**(1.88)**	**(2.16)**	(-1.10)	**(-3.39)**	(0.28)
Dividend Yield	0.02	**-0.06*****	**-0.08***	-0.00	**-0.02****	**0.01***	**0.02****
	(0.69)	**(-2.66)**	**(-1.98)**	(-0.15)	**(-2.06)**	**(1.72)**	**(2.27)**
Leverage	0.29	**-0.51****	**-1.02*****	-0.06	**-0.21****	0.05	**0.19****
	(0.84)	**(-2.55)**	**(-2.92)**	(-1.00)	**(-2.20)**	(1.00)	**(1.98)**
Book-to Market	-0.34	**-0.23***	0.18	-0.01	**0.17*****	0.00	-0.08
	(-1.64)	**(-1.96)**	(0.79)	(-0.48)	**(2.74)**	(0.15)	(-1.23)
Volatility	-0.01	-0.00	-0.01	**0.00****	0.00	-0.00	-0.00
	(-0.61)	(-0.46)	(-0.55)	**(1.72)**	(0.53)	(-1.37)	(-0.32)

TABLE 2.8 (continued)

	All firms	ln(total pay)	ln(total pay)	equitymix	equitymix	salarymix	salarymix
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
CEO tenure	-0.00	**0.01****	0.01	**0.00***	-0.00	-0.00	0.00
	(-0.25)	**(2.01)**	(1.38)	**(1.86)**	(-0.18)	(-0.46)	(1.26)
Stock Return	0.04	-0.03	-0.16	0.02	-0.03	-0.04	-0.06
	(0.22)	(-0.34)	(-0.75)	(0.57)	(-0.58)	(-1.57)	(-0.94)
Ln(audit fees)	**0.11****						
	(2.48)						
Fee Ratio	**1.13*****						
	(3.19)						
Location	-0.08						
	(-0.62)						
Pay Complexity	**0.17*****						
	(3.07)						
CEO Ownership	-0.52						
	(-0.84)						
Industry Competition	0.68						
	(0.54)						
Constant	**-3.04*****	**13.90*****	**9.57*****	**0.73*****	**-1.03*****	0.13	**1.04*****
	(-3.91)	**(19.80)**	**(14.44)**	**(3.24)**	**(-5.70)**	(0.79)	**(4.57)**
Industry Dummies		Yes	Yes	Yes	Yes	Yes	Yes
Selectivity Variable		**-4.24*****	**-4.02*****	**-1.54*****	**-1.40*****	**1.10*****	**1.41*****
		(-5.06)	**(-5.02)**	**(-5.69)**	**(-6.38)**	**(5.29)**	**(7.47)**
R-squared	0.17	0.44	0.38	0.23	0.35	0.24	0.38
Observations	500	361	139	361	139	361	139

Selectivity Variable for columns 1,3,5 = $-f(\gamma_0+\gamma_t Xi+\gamma_2 Z_i)/ F(\gamma_0+\gamma_1 X_i+\gamma_2 Z_i)$- Firms with Consultants
Selectivity Variable for columns 2,4,6= $f(\gamma_0+\gamma_t Xi+\gamma_2 Z_i)/ (1-F(\gamma_0+\gamma_1 X_i+\gamma_2 Z_i))$- Firms without Consultants
Predicted from the selection model that we ran for all firms (Column 1 - Z is the vector of the exogenous variables)

TABLE 2.9
Average Predicted Percentage Differences

This table shows the average predicted percentage differences between firms with and without a consultant. The predicted values are derived from the models we ran in Table 9. Total pay is the sum of salaries, bonuses, LTIPs, options and other forms of pay (e.g. pensions) that the CEOs of the sampled firms received during 2006. Salarymix is a ratio of salary levels to total pay; equitymix is a ratio of equity based pay to total pay. The asterisks indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance.

Variables	Average Predicted Percentage Difference	t-statistic
Ln(Total Pay)	7.165	332.15***
Equitymix	2.488	419.07***
Salarymix	-1.839	-31.03***

TABLE 2.10
Probit Selection Models

This Table presents three different probit models. The dependent variable is a consultant dummy, which takes the value of one when a firm has hired a compensation consultant and zero when it has not. The external blockholders variable is the sum of ownership levels for external shareholders with more than 10% of a firm's total stocks. Dividend yield, leverage, book-to-market and volatility are taken from Datastream for the year 2006. CEO tenure is the number of years that a manager is at her position in the firm. Non-executives ratio is a ratio of the number of non executive directors divided by the total number of board members. Stock return is the raw annual return of the firm's stock. Compensation committee is the number of the committee members.. Complexity is the number of options and LTIP packages awarded to the manager in the year. Fee ratio is calculated by dividing non audit fees to total fees. The levels of audit and non-audit fees are taken from Datastream and from the firms' annual reports. Location takes the value of 1 when a firm is located in London and 0 when it is not. Industry Competition is the standard deviations of the stock returns of firms operating in the same industries. In parentheses we have z-statistics and the asterisks indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance.

	Top quartile of firms in Compensation Levels (1)	Lowest quartile of firms in Compensation Levels (2)	FTSE Small Cap firms (3)
Ln(audit fees)	-0.03	0.17*	0.16**
	(-0.33)	(1.80)	(2.28)
Fee Ratio	0.15	1.50**	1.38***
	(0.21)	(2.16)	(2.70)
Location	-0.13	-0.18	0.09
	(-0.73)	(-0.65)	(0.41)
Pay Complexity	0.08	0.35**	0.32***
	(0.78)	(2.37)	(3.54)
Institutional Shareholders	0.02*	0.00	0.00
	(1.68)	(0.04)	(1.36)
Non-Executives Ratio	0.81	0.85	1.41*
	(0.43)	(0.94)	(1.76)
Compensation Committee	0.13	0.38**	0.18
	(0.67)	(2.16)	(1.38)
Ln (Assets)	0.06	0.04	-0.02
	(0.48)	(0.49)	(-0.36)
Dividend Yield	-0.14	0.03	0.08
	(-0.90)	(0.46)	(1.56)
Leverage	3.33**	-0.56	0.33
	(2.17)	(-0.81)	(0.57)
Book-to Market	0.72	-0.04	-0.34
	(0.88)	(-0.12)	(-1.14)
Volatility	-0.04	-0.03	0.00
	(-0.33)	(-0.79)	(0.01)
CEO tenure	-0.05	-0.01	-0.00
	(-1.26)	(-0.47)	(-0. 40)
CEO Ownership	-0.18*	0.02	0.01
	(-1.65)	(0.81)	(0.65)
Stock Return	0.78	-0.30	-0.15
	(0.90)	(-0.76)	(-0.53)
Industry Competition	-2.15	-0.26	1.63
	(-0.53)	(-0.12)	(0.93)

TABLE 2.10 (continued)

	Top quartile of firms in Compensation Levels	Lowest quartile of firms in Compensation Levels	FTSE Small Cap firms
	(1)	**(2)**	**(3)**
Constant	2.18	**-3.80**[**]	**-3.75**[***]
	(-0.65)	**(-2.36)**	**(-3.08)**
Pseudo R^2	0.23	0.17	0.17
Observations	125	125	204

TABLE 2.11

Probit Selection Model and Split Linear Regressions controlling for Selectivity Bias (use of lagged variables)

Column 1 presents the results of the probit consultant selection model, where all the independent variables are lagged by one year. The dependent variable is a consultant dummy, which takes the value of one when a firm has hired a compensation consultant and zero when it has not. In the following columns, we split our sample in firms that have hired a consultant (columns 2, 4 and 6) and firms that have not (columns 3, 5 and 7). Total pay is the sum of salaries, bonuses, LTIPs, options and other forms of pay (e.g. pensions) that the CEOs of the sampled firms received during 2006. Salarymix is a ratio of salary levels to total pay; equitymix is a ratio of equity based pay to total pay. The institutional shareholders variable is the sum of ownership levels for institutional shareholders with a more than 10% of a firm's total stocks. Dividend yield, leverage, book-to-market and volatility are taken from Datastream for the year 2006. CEO tenure is the number of years that a CEO is at her position in the firm, as taken from BoardEx and the firms' annual reports. Non-executives ratio is a ratio of the number of non executive directors divided by the total number of board members. Compensation committee is the number of the committee members. Pay Complexity is the number of options and LTIP schemes awarded to the CEO in the year. Fee ratio is calculated by dividing non audit fees to total fees. Stock return is the raw annual return of the firm's stock. The levels of audit and non-audit fees are taken from Datastream and from the firms' annual reports. Location takes the value of 1 when a firm is located in London and 0 when it is not. Industry Competition is the standard deviations of the stock returns of firms operating in the same industries. The selectivity variable is estimated from the selection model that we have run in Column 1 and its definition is given on the bottom of the table. Z is the vector of the exogenous variables that we believe that affect the choice of a consultant but do not have an effect on the CEO pay. In parentheses we have the t-statistics (z-statistics for column 1) and the asterisks indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance.

	All firms	ln(total pay)	ln(total pay)	equitymix	equitymix	salarymix	salarymix
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Institutional Shareholders	0.02	-0.00	-0.17	**0.01**[*]	-0.00	-0.00	0.04
	(0.82)	(-0.52)	(-1.32)	**(1.65)**	(-0.72)	(-0.38)	(0.92)
Non-Executives Ratio	**1.49**^{**}	0.38	-0.89	0.24	0.18	0.14	**0.29*****
	(2.48)	(1.02)	(-1.52)	(0.98)	(1.00)	(0.86)	**(3.08)**
Compensation Committee	**0.14**^{***}	-0.07	**-0.12**[*]	**-0.01**^{**}	**-0.08**^{***}	**0.07****	0.00
	(2.52)	(-0.54)	**(-1.67)**	**(-2.27)**	**(-2.72)**	**(1.99)**	(0.18)
ln(Assets)	**0.07***	**0.22***	**0.13**^{**}	**0.08**^{***}	0.00	**-0.08***	0.01
	(1.72)	**(9.34)**	**(2.01)**	**(2.99)**	(0.74)	**(-3.98)**	(0.28)
Dividend Yield	0.00	**-0.02**^{***}	**-0.11****	0.00	**-0.07****	**0.01**[*]	**0.11****
	(0.54)	**(-2.92)**	**(-2.14)**	(0.39)	**(-2.14)**	**(1.70)**	**(2.14)**
Leverage	0.18	**-0.78***	**-0.94***	-0.75	**-0.58***	0.07	**0.12****
	(0.99)	**(-2.79)**	**(-2.68)**	(-1.28)	**(-1.94)**	(0.48)	**(2.00)**
Book-to Market	-0.18	**-0.18**^{**}	0.14	-0.08	**0.29***	-0.00	-0.08
	(-1.42)	**(-1.98)**	(1.01)	(-0.34)	**(2.62)**	(0.12)	(-1.01)

TABLE 2.11 (continued)

	All firms	ln(total pay)	ln(total pay)	equitymix	equitymix	salarymix	salarymix
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Volatility	-0.00	-0.01	-0.15	**0.01****	0.01	-0.25	-0.02
	(-0.54)	(-0.52)	(-0.74)	**(1.68)**	(0.50)	(-1.01)	(-0.24)
CEO tenure	-0.04	**0.04*****	0.07	**0.01****	-0.01	0.00	0.01
	(-0.48)	**(2.57)**	(1.49)	**(1.99)**	(-0.29)	(0.14)	(1.44)
Stock Return	0.05	-0.01	-0.10	0.08	-0.01	-0.01	-0.08
	(0.63)	(-0.11)	(-0.64)	(0.72)	(-0.72)	(-1.52)	(-0.92)
Ln(audit fees)	**0.20*****						
	(2.74)						
Fee Ratio	**1.02*****						
	(3.52)						
Location	-0.04						
	(-0.51)						
Pay Complexity	**0.24*****						
	(2.74)						
CEO Ownership	-0.79						
	(-1.12)						
Industry Competition	0.52						
	(0.82)						
Constant	**-4.02*****	**11.44*****	**7.44*****	**1.08*****	**0.98*****	0.72	**1.01*****
	(-3.84)	**(15.72)**	**(13.02)**	**(3.16)**	**(3.18)**	(1.75)	**(4.07)**
Industry Dummies		Yes	Yes	Yes	Yes	Yes	Yes
Selectivity Variable		**-4.79*****	**-3.89*****	**-1.39*****	**-1.18*****	**1.00*****	**1.15*****
		(-5.32)	**(-5.45)**	**(-5.32)**	**(-5.02)**	**(5.78)**	**(6.42)**
R-squared	0.17	0.41	0.36	0.34	0.39	0.22	0.30
Observations	500	361	139	361	139	361	139

Selectivity Variable for columns 1,3,5 = -f($\gamma_0+\gamma_t X_i+\gamma_2 Z_i$)/ F($\gamma_0+\gamma_1 X_i+\gamma_2 Z_i$)- Firms with Consultants

Selectivity Variable for columns 2,4,6= f($\gamma_0+\gamma_t X_i+\gamma_2 Z_i$)/ (1-F($\gamma_0+\gamma_1 X_i+\gamma_2 Z_i$))- Firms without Consultants

Predicted from the selection model that we ran for all firms (Column 1 - Z is the vector of the exogenous variables)

TABLE 2.12
Average Predicted Percentage Differences

This table shows the average predicted percentage differences between firms with and without a consultant. The predicted values are derived from the models we ran in Table 9. Total pay is the sum of salaries, bonuses, LTIPs, options and other forms of pay (e.g. pensions) that the CEOs of the sampled firms received during 2006. Salarymix is a ratio of salary levels to total pay; equitymix is a ratio of equity based pay to total pay. The asterisks indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance.

Variables	Average Predicted Percentage Difference	t-statistic
Ln(Total Pay)	6.954	254.72***
Equitymix	2.239	315.44***
Salarymix	-1.963	-152.36***

CHAPTER 3

Executive Pay Contracts and IFRS Restatements

3.1. Introduction

In this study we test for the existence of managerial opportunism at the transition from UK General Accepted Accounting Principles (GAAP) to the International Financial Reporting Standards (IFRS). In a setting similar to that of Healy (1985) we examine whether CEOs choose to manipulate IFRS restatements in view of the type of targets set in their pay contracts, the past performance of the firm and the size of equity based pay.

The introduction of the IFRS is considered as one of the most important recent developments in financial reporting, and has launched a major academic debate concerning the "push for mandating uniformity at an international level" (Ball 2006, p. 6).The present chapter makes no attempt to contribute to this policy debate. Rather, we focus on the research design opportunities offered by the switch of UK listed firms to new accounting standards in a single financial year. We thus analyse UK GAAP to IFRS restatements to test for the presence of managerial opportunism around the introduction of IFRS. In effect the switch to IFRS in a single year can be viewed as a kind of "laboratory experiment" in which a major exogenous change is imposed on all the firms in a large stock market sample. This setting makes our analysis less subject to methodological problems related to the inherent endogeneity of accounting and other firm choices, as well as selection bias concerns that the vast majority of the relevant literature suffers from (Fields et al. 2001).

Ball (2006) raises concerns that, to some degree, the actual implementation of IFRS has not received the attention it deserves. What the majority of the relevant literature seems to ignore is the role of incentives in the transition from the local GAAP to IFRS and to what degree they affect financial reporting practices. Daske et al. (2008), Garcia Osma and Pope (2009) and Li (2010) show that institutional and legal enforcement incentives affect a

firm's transition process to IFRS. To our knowledge, no study so far takes into account the potential effect that managerial pay incentives may have had on the implementation of IFRS.

During the first year of adoption of IFRS, UK firms were required to restate their UK-GAAP based figures for the year prior to the implementation of IFRS. For example, firms with financial years ending on December 31st 2005 were required to restate their UK-GAAP figures for the financial year from January 1st 2004 to 31st December 2004. These restatements have been the topic of research for a number of studies. Horton and Serafeim (2010) show that part of these reconciliations are value relevant and the market reacts to them, while Christensen et al. (2009) find that the market reaction to IFRS restatements is more pronounced for firms that are closest to a debt covenant violation in the post-IFRS period.

The structure of the UK executive pay contracts has changed significantly over the last decade or so. Following the recommendations of the Greenbury report (1995) UK firms started replacing unconditional Executive Share Options (ESOs) with conditional ESOs or Long Term Incentive Plans (LTIPs), thus linking CEO's long term incentive based compensation to specific performance conditions (Buck et al. 2003). These awards (having a 3-year time horizon in most of the cases) are made payable to the CEO if and only if the targets determined at the start of the vesting period are met. These targets can be accounting related, Earnings-per Share (EPS) or Return on Capital Employed (ROCE), market related, typically Stock Return or Total Shareholder Return (TSR), or a combination of both. Having this in mind and by adopting a number of different research designs we test whether UK CEOs used IFRS restatements to make these accounting

related targets more easily achievable and thus opportunistically increasing their personal wealth.

This study is similar to the Christensen et al. (2009) paper in that it considers the possibility that the implementation of IFRS could have been affected by pre-existing contractual commitments. However, we extend Christensen et al. (2009) by allowing for the possibility that the IFRS restated figures themselves may have been the object of opportunistic accounting choice by company managers. This possibility arises because the management compensation contracts of many UK executives contain terms that are based on "rolling GAAP". However, the restated IFRS figures for financial year 2004 do not form part of the "rolling GAAP" time series. This means that UK managers can affect the "rolling GAAP" time series for 2005 onwards by the choices they make when they restate the accounting figures for 2004.

Managers can choose to accelerate or decelerate the recognition of expenses, as well as accelerate or decelerate revenue recognition. If, for instance, the firm chooses to accelerate the recognition of expenses this will make the 2004 restated income and book value lower than the 2004 UK-GAAP accounts, but they will increase future IFRS earnings by the same amount. For example, writing down a fixed asset in the restated balance sheet, will make the restated income statement and balance sheet look worse, but future IFRS income will be higher due to a reduced depreciation charge.

Based on Horton and Serafeim (2010) it would appear that the market reactions to such reconciliations as a result of manipulation would be negative. We thus assume that there are no such costs involved to the production of a negative reconciliation that are ex-ante known to the managers. In future research we aim at relaxing this assumption by

examining the managerial considerations on the impact of any such restatements on the value of the firm.

We acknowledge the fact that the ex-ante differences between UK GAAP and IFRS are relatively small, which might not provide much ground for manipulations. However, following Garcia Osma and Pope (2011) we still believe that managers can exercise considerable discretion at the time of the adoption of IFRS that can affect future earnings. We test for the possibility that managers strategically restate their balance sheet accounts at the transition process to IFRS to inflate future earning and thus make their EPS/accounting based targets easier to achieve in the future. To examine this, we focus on the component of the restatements that is unexplained by specific firm characteristics and prior accounting policies, following Horton and Serafeim (2010).

We show that the existence of an accounting related, and/or even more specifically an EPS, vesting target in executive pay contracts does not appear to have a strong effect on the restatements of current accruals which, as previous studies show, are more easily manipulated. Moreover, we find no strong signs of opportunism in other restated figures like non-current accruals and goodwill, where manipulation is less easily detectable. After introducing a number of controls for different types of CEOs that could potentially have a stronger incentive to manipulate the restatements to serve their own interests, we still find no strong signs of accounts manipulation that can be attributed to personal wealth motives. In particular we distinguish between firms that are performing well and poorly under UK GAAP, firms with high and low historic EPS volatility and managers with high and low equity based pay proportions to test the strength of the incentives to manipulate. We also control for the endogeneity of the target setting decision and our results do not change substantially.

This study contributes a number of findings to the IFRS related literature. First, using an externally imposed change that definitely affects accounting choice, we test for opportunistic behaviour by the managers of UK firms. We show that managerial compensation related incentives do not have a strong effect on reporting practices at the implementation of IFRS and managers do not exploit the IFRS implementation event for personal wealth increase. This indicates the existence of no strong signs of managerial opportunism during this process and it thus adds to the vast existing literature that studies the relationship between incentives and accounting choice. It does so without the usual methodological concerns, mainly related to endogeneity and selection bias issues that plague this research area. Second, to our knowledge, this is the first study that focuses on factors that could potentially affect the actual restatements from local GAAP to IFRS; the literature so far only studies the restatements' value relevance and capital market reactions to them.

Section 2 outlines the literature related to our study. In section 3 we analyse our main hypotheses, research design and data collection while in section 4 we present our main results. Section 5 concludes our analysis.

3.2. Related Literature

3.2.1. Executive Pay related Incentives and Accounting Choice

Fields et al. (2001) distinguish between three different types of influences on accounting choice, as identified in the relevant literature. The first are contractual related ones, which include among others, managerial pay motives and external influences from share- and-

bondholders. The second relates to stock price incentives while the third one identifies tax and regulation effects on accounting practices by firms. Moreover Beyer et al. (2010) claim that managers' financial reporting decisions are affected by three different types of motives: In case they wish to issue external capital, when they receive equity based compensations and when there are threats over corporate control.

The majority of executive pay contracts that are tied to accounting figures provide some degree of discretion to managers with respect to the reporting of earnings. A great number of studies have tried to identify the existence of managerial opportunistic behaviour and manipulation of earnings so as to increase personal wealth. Healy (1985) shows that managers manipulate total accruals based on the targets set in their bonus contracts. More specifically, when earnings lie well above the upper bound or well below the lower bound of their short term bonus thresholds managers make accounting choices to defer income to future periods. These findings are also supported by Holthausen et al. (1995) and extended by Degeorge et al. (1999) and Guidry et al. (1999). There is also an extensive literature focused on earnings management and the use of accruals (mainly discretionary ones) by managers for income smoothing in view of their compensation related incentives (Bergstresser and Philippon 2006; Gaver et al. 1995)

A number of studies have identified that the informational and market benefits from the introduction of IFRS are stronger for firms that have the motivation to be more transparent due to institutional and legal enforcement incentives (Daske et al. 2008; Garcia Osma and Pope 2009; Li 2010). To our knowledge, no previous study associates IFRS implementation with managerial pay incentives.

3.2.2. Accounting Reconciliations

Although the literature on the IFRS implementation and its implications is very broad, only a small number of studies have specifically focused on the actual reconciliations from the local GAAP to IFRS. Horton and Serafeim (2010) test for market reactions to IFRS reconciliations and show abnormal negative returns for firms that report lower earnings with IFRS than with UK GAAP. When testing the value relevance of these reconciliations, they show that positive (negative) adjustments are value relevant both before and after (only after) their disclosure. This result suggests that managers delay the communication of bad news to investors until their mandatory compliance with IFRS.

Christensen et al. (2009) also show that capital markets react to the announcements of IFRS reconciliations, a result that also suggests that the reconciliations are value relevant. Moreover, they show that these market reactions can in part be attributed to the effects that IFRS has on debt contracting. Due to the widespread use of rolling GAAP in credit arrangements the mandatory switch from UK GAAP to IFRS increases the probability of a technical debt covenant violation. Their findings suggest that market reactions to IFRS reconciliations are more pronounced for firms that are more likely to face the costs of a debt covenant violation.

Finally, in an approach similar to ours, Garcia Osma and Pope (2011) examine whether IFRS restatements in a large sample of international firms have been strategically adjusted by managers to increase future reported earnings. They predict that this opportunistic behaviour by managers will have a negative effect on earnings quality for future periods. Managers of firms who view the switch to IFRS as an opportunity for "cleaning up" their balance sheets are predicted to have a higher scope to exercise some degree of accounting

discretion in future years. Their results show strong indications that accounting manipulations on the first time of IFRS adoption have longer term consequences on subsequent accounting quality.

We can thus conclude that the centre of attention for the extant literature so far has been the value relevance of IFRS restatements and how capital markets react to them. To our knowledge, only one study focuses on the actual restatement process but it does not take into account to what extent it has been influenced by the pay related incentives of financial statement preparers (managers).

3.3. Hypotheses and Data

3.3.1. The UK Setting

IFRS was adopted by all UK listed firms for financial years starting on or after January 1st 2005. As part of this process all firms were required to produce a restated set of accounts based on IFRS. This gives us a unique setting for the study of the IFRS restatement process and its interrelation with managerial pay incentives. Since all UK firms adopt IFRS for the first time, the transition to IFRS can be viewed as a natural "experiment". In particular, the switch of a whole market in a single year from the local GAAP to IFRS allows us to examine this exogenously imposed change of accounting policy under the light of managerial pay related incentives.

The UK is a major stock market based economy where the use of equity based managerial compensation is widespread (Conyon and Murphy 2000), which makes our setting even more interesting. Following the recommendations of the Greenbury committee report

(1995) the characteristics of long term incentive based CEO pay packages for UK firms have changed significantly compared to their US counterparts (Conyon and Murphy 2000). Unconditional ESOs have been replaced by conditional ESOs or LTIPs (restricted share awards) which are awarded to CEOs based on the achievement of specific targets. In this way, CEO pay-performance sensitivity increases and CEOs' interests are better tied to these of the shareholders (Buck et al. 2003). The conditions that need to be satisfied for these awards to vest can be accounting (EPS or ROCE for the majority of firms) or market related (i.e., stock return or TSR) or a combination of both. These schemes usually have a 3 year time horizon, i.e., vesting period, and at the end of the period the compensation committee decides whether the conditions set have been met and if the award becomes payable to the CEO. Appendix 3.A illustrates examples of executive pay contracts with different types of pre-determined vesting targets as described in the firms' remuneration reports.

3.3.2. Main Hypotheses

We examine whether the terms of an executive pay contract have an effect on the restatements or, more specifically, whether managers of firms with accounting related vesting targets in their long-term executive pay schemes opportunistically used IFRS restatements as a tool for personal wealth increase. The CEO pay contracts of these firms contain accounting related terms that are based on "rolling" GAAP.

In our analysis we need to distinguish between firms that are performing poorly under UK GAAP and those that are performing well. Managers of underperforming firms are more likely to try to accelerate (decelerate) the recognition of expenses (income) in the IFRS restated accounting statements. We expect this to happen because the IFRS-based 2004

restated figures are not part of the time series of the vesting targets included in their executive pay contracts. In this way managers of poorly performing firms can potentially inflate earnings in future periods, at least on a mid-term time horizon (Healy 1985; Garcia Osma and Pope 2009). They can thus achieve their vesting targets for existing contracts that straddle the year of introduction of IFRS, which otherwise would be difficult to reach. For example, deferring the recognition of an account receivable in the restated balance sheet will make the restated 2004 balance sheet look worse, but improve future IFRS based current accruals and income figures. However, such accounting choices create costs to the firm, since markets react negatively to any negative reconciliations (Horton and Serafeim 2010). We thus need to assume that it is not possible for the managers to be ex-ante aware of any such costs.

On the other hand managers of firms with accounting related targets that are performing well under UK GAAP have lower incentives to try to manipulate IFRS restatements in such a way, since they face much lower risk of not achieving the targets set in their pay contracts and are thus less likely to engage in such opportunistic behaviour. On the contrary, they are likely to try to decelerate (accelerate) the recognition of expenses (income) at the restated IFRS based figures. This will deflate current earnings and potentially lower future EPS based vesting targets, which will make them more easily achievable.

We acknowledge the fact that the ex-ante differences between UK GAAP and IFRS are relatively small which does not provide much ground for manipulation by the managers. However, following Garcia Osma and Pope (2011) we still believe that managers have the opportunity to strategically adjust their accounts at the time of adoption of IFRS to inflate future earnings. We thus test for the possibility that managers exercised some discretion

over the IFRS-based balance sheet accounts restatements to make their EPS/accounting based targets more easily achievable in the future. Following Horton and Serafeim (2010) we focus on that component of the restatements that cannot be explained by specific firm characteristics (industry, size, growth opportunities) and prior accounting policies. This unexplained part is more likely to be related to manipulations by managers, since it cannot be explained by the firm's fundamentals. Our initial analysis shows that there is a whole distribution of restatements, where some of them appear to be rather extreme. It is thus very interesting to understand the reasons and motivations behind them.

We expect to find stronger signs of earnings management in current accruals compared to other accounting line items since they can be more easily manipulated (Rayburn 1986) and they arguably involve a greater degree of subjective judgement (Ball 2006). IFRS restatements are non-recurring, have no audit requirements (Christensen et al. 2009) and are not part of the "rolling" GAAP based time series of the firms' reported earnings. Moreover, IFRS based restated figures do no affect any other contractual agreements linked to accounting figures, e.g., covenants, since they are evaluated on a "rolling GAAP" basis in the majority of the cases (Christensen et al. 2009; Christensen and Nikolaev 2009).

More formally, our hypotheses are:

Hypothesis 1: The existence of accounting related vesting targets in executive pay contracts affects the firms' IFRS restatement process depending on the firms' performance under UK GAAP and the degree of difficulty they face in achieving the target.

Hypothesis 1A: The existence of accounting related/ EPS vesting targets in executive pay contracts will have a negative effect, i.e., lower IFRS-based restated figure, on

current/non-current accruals and goodwill IFRS based restatements for firms that are underperforming under UK GAAP.

Hypothesis 1B: *The existence of accounting related/ EPS vesting targets in executive pay contracts will have a positive effect, i.e., higher IFRS-based restated figure, on current/non-current accruals and goodwill IFRS based restatements for firms that are performing well under UK GAAP.*

Following Horton and Serafeim (2010) to estimate the unexpected component of the restatements we initially approximate the expected part of each of the restated figures by using the following model :

$$Y_t = b_0 + b_1 * MV_{it-1} + b_2 * BTMV_{it-1} + b_3 * Industry + b_4 * X_t + e_t \qquad (3.1)$$

where:

Yt: Restated Figure (IFRS Based$_{t-1}$-UK GAAP Based$_{t-1}$), scaled; MV$_{it-1}$: the natural logarithm of the market value of the company 1 month before the announcement of the reconciliation; BTMV$_{it-1}$: the book to market ratio of the company 1 month before the announcement of the reconciliation; Industry: Industry Fixed Effects; X$_t$: a vector of variables that controls for prior accounting policies of the firm.

We estimate regression equations for three different dependent variables, namely the differences between the IFRS and UK GAAP based on current/non-current accruals and goodwill. We scale all restated figures by the value of the total assets of the firm in year t.[1] We define current accruals as the change in the working capital, i.e., non-cash related current assets minus current liabilities (Thomas and Zhang 2000), and non-current accruals as the sum of the depreciation and amortisation for the year and the change in gains or

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[1] We have alternatively used IFRS and UK GAAP based current assets figure in year t-1 and our results do not change substantially.

losses on sale of property, plant, and equipment and sale of investments. We take goodwill from the firm's balance sheets respectively. Following Ho et al. (1997) to control for the effect of prior accounting policies on the IFRS restatements we add in our model the average value of income before extraordinary items in the two fiscal years preceding the first year that the firm reports under IFRS, deflated by market value of equity at the beginning of the fiscal year; the average value of operating income before depreciation in the two fiscal years preceding the introduction of IFRS, deflated by market value of equity at the beginning of the fiscal year; the sales growth rate in the two fiscal years preceding the first year under IFRS; and the average value of capital expenditure in the two fiscal years preceding the year of introduction of IFRS, deflated by market value of equity at the beginning of the fiscal year.

The residuals obtained from equation (3.1) give us the unexpected component of the restated figures under IFRS. We then test for the relationship between IFRS restatements and accounting related/ EPS targets with the use of the following regression models, after splitting our sample into above/below industry median in terms of EPS increase in the last two years prior to the introduction of IFRS, i.e., 2002 to 2004 for firms with a 31st December year end.

$$R(Y_t) \quad = b_0 + b_1 * Accounting \; Related / EPS \; dummy_t + b_2 * X_t + e_i \qquad (3.2)$$

where:

R(Y$_t$): Residuals from equation (3.1) for each restated figure; X$_t$: a vector of other control variables; t: year of the implementation of IFRS.

The main independent variable, an accounting related target (EPS) dummy, takes the value of 1 when an accounting related (EPS) target is included in the terms of the long term

executive pay schemes and 0 otherwise. For the main independent variable in equation 3.2 we expect a negative (positive) coefficient for poorly (well) performing firms.

We also expect firms with higher EPS volatility in the past to be more likely to try to manipulate IFRS restatements and recognise more losses in the restated accounts when EPS figures are included in their executive pay contracts. This is mainly for two reasons. First, studies have shown that EPS figures are expected to be more volatile after the implementation of IFRS (Ball 2006; Ormrod and Taylor 2004) and thus managers with EPS targets included in their long-term incentive pay schemes have a higher incentive to try to secure higher reported profits. Second, higher earnings volatility makes manipulation more difficult to detect (Dechow and Dichev 2002). So we also test the following hypothesis:

Hypothesis 2: *Firms with higher historic EPS volatility are more prone to IFRS restatement manipulations.*

To test the above hypothesis, we re-estimate the regression equations for two separate subsamples formed by splitting the full sample into above/below industry median observations in terms of historic EPS volatility for the past 10 years.

As a further step to our analysis, we examine the relation between IFRS restatements and the strength of CEO incentives. We expect CEOs with a higher percentage of equity based pay in their compensation packages to be more likely to follow a future earnings increasing approach at the transition from UK GAAP to IFRS. This effect is mainly anticipated because these are the managers that will achieve a higher personal wealth increase out of this process. We thus formulate our third hypothesis as follows:

Hypothesis 3: *The IFRS restatement process is associated with the strength of the managers' incentives, i.e., portion of equity based pay.*

To test for the above hypothesis we use the following equation:

$R(Y_t) = b_0 + b_1 * Accounting/EPS\ dummy_t + b_2 * Equitymix/EquityPay\ Dummy_t$

$\qquad + b_3 * Z_t + b_4 * X_t + e_t \qquad\qquad\qquad\qquad\qquad\qquad (3.3)$

where:

$R(Y_t)$: Residuals from equation (3.1) for each restated figure; Z_t: Accounting Related/EPS Dummy Equitymix/EquityPay Dummy; X_t: a vector of other control variables and t: the year of the implementation of IFRS.*

We use two different variables to control for equity based pay incentives. We first define equitymix as the ratio of the value of equity-based schemes (options and LTIPS) to total CEO compensation. We also create an equity based pay dummy, which takes the value of 1 when an option or LTIP scheme is included in the CEO's pay package and 0 otherwise. Both variables are calculated for the year of introduction of IFRS. We split the sample into firms that are performing poorly and well under UK GAAP and focus mainly on poorly performing firms, since in this case managers are more likely not to meet their vesting targets. We estimate the interactive term between the terms of the pay contract (EPS/ accounting related target) and the equity pay related variables, which we expect to be negative for poorly performing firms and non-negative for well performing ones.

3.3.3. Data

For the purpose of this study we collect IFRS restatements related data for UK firms for the year 2004 (for firms with a fiscal year end on the 31st December) or 2005 (for the remaining firms). According to IFRS 1 in the transition year from local GAAP to IFRS, firms need to report the restated figures for the previous year. Therefore, we hand collect the reconciled accounting figures from the 2005 or 2006 annual reports, depending on the year of transition. As previously explained, our interest is on accruals (current and non-current) and goodwill, based on UK GAAP and IFRS.

Our focus is on all firms included in the FTSE 100, 250 and Small Cap indices of the London Stock Exchange (starting number of firms was 646). We exclude firms from the financial industry due to their special financial reporting regulations (166 firms).

We hand collect the data on the terms of the long term executive pay schemes from the remuneration committee reports included in the firms' annual reports. After excluding 29 firms for which we could not find the relevant data our final sample includes 451 firms. CEO pay related data is collected from BoardEx. For the valuation of LTIPs, BoardEx assumes a 100% realization of the maximum award of the LTIP schemes whether cash, equity, equity matched or option based. Options are calculated based on the latest closing stock price using the Black and Scholes (1973) option pricing model. For other accounting and market variables we use the Datastream, Thomson One Banker and Fame databases.

3.3.4. Other Control variables

Firm size. Larger firms have different incentives in their accounting choices compared to smaller firms. Their accounting figures are scrutinised by the press and public in detail and the political pressures they face are substantially greater (Watts and Zimmerman 1986). Therefore, we predict large firms to take the opportunity to report greater profits in their restated figures in order to avoid bad publicity. Therefore it is less likely for large firms to choose future income- increasing accounting procedures that will lead to big "jumps" in the profits reported in the IFRS restated figure. For these reasons we expect a positive coefficient between our proxy for firm size and IFRS restatements. As a proxy for firm size we use the natural logarithm of the market value of equity.

Firm risk and growth opportunities. Firms with higher growth opportunities operate in riskier environments and thus face the risk of greater volatility in earnings (Watts and Zimmerman 1986; Zmijewski and Hagerman 1981). For this reason we expect high risk firms to follow a future earnings increasing approach during the IFRS restatement procedure. Firms that operate in riskier environments face higher risk of not achieving set accounting targets i.e., analysts forecasts, covenants. Therefore, managers of these firms have a higher incentive to use IFRS restatements to help them achieve an increase in future earnings. As a proxy for firm risk and growth opportunities we use the volatility of stock returns and book to market value of the firm respectively.

Leverage. The effect of leverage on the restatement process is ambiguous. Although the restated figures will not be used in any debt contracts, highly levered firms may have an incentive to opportunistically recognise losses in the restatement process so that future debt covenants will be more easily achieved. However, we believe that these firms will be

rather reluctant in trying to manipulate accounting figures during the restatement, due to higher scrutiny by borrowers. Therefore, since positive earnings are more persistent (Basu 1997) we are uncertain about the sign of the effect of leverage on the IFRS restatement process.

Industry characteristics. Firms in specific industries have special accounting characteristics that can have an important effect on IFRS restatements. We include in our models industry dummies and the ratio of intangible-to-total assets which varies substantially between industries and can thus have an important effect on IFRS restatements, e.g., software and pharmaceutical firms have very high levels of intangibles; IFRS prohibits a "fair value" approach at the recognition and impairment of intangible assets and that can provide managers of such firms with a lot of ground for subjective valuations (Cairns 2006).

Ownership. Studies have shown that institutional investors have a high degree of sophistication and activism (Ashiq Ali et al. 2000; Bartov et al. 2000). Therefore, we expect that they apply a higher degree of scrutiny to the choices of the firms they have stakes in, compared to normal investors. For this reason, we expect that firms with large external blockholders are more conservative with IFRS restatements. We expect a non negative relationship between the existence of large external blockholders and IFRS restatements. As a proxy for the influence of large external blockholders we include a variable (named external blockholders), which is defined as the sum of the levels of ownership for large shareholders with a stake above 10%.[2]

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[2] We have also tested different ownership thresholds, i.e. 5% and 7.5%, and the results remain qualitatively the same.

CEO power. Fredrickson et al. (1988) use, among other variables, CEO tenure as a proxy for the power that the CEO has within the firm. Moreover, Bebchuck et al. (2002) claim that the power of a CEO within a firm increases with ownership levels. We expect that more powerful CEOs will try to opportunistically recognise losses during the IFRS restatement process in order to gain personal wealth by achieving their accounting related performance targets, which will allow their options to vest. We include in our model the number of years that the CEO remains in her position to proxy for CEO tenure and the percentage of the firm's ordinary shares in the hands of the CEO to proxy for ownership.

Audit quality. Several studies have shown that audit quality is much higher for firms that have hired a "Big Four" auditor. For reasons of independence and reputation, "Big Four" auditors have a higher incentive to disclose any cases of managerial manipulation in financial reporting practices (Becker et al. 1998; DeAngelo 1981; DeFond and Jiambalvo 1991). Therefore, we expect that firms with "Big Four" auditors are less likely to try to manipulate accounting figures during IFRS restatements. We thus include a "Big Four" auditor dummy in our model and we cannot be sure about their effect on the restated figures.

Other Corporate Governance Variables. Prior studies (Chung et al. 2003; Peasnell et al. 2005) have shown that the existence of strong corporate governance mechanisms can mitigate earnings management within the firm. An important proxy of firm governance quality is board independence. To proxy for board independence we include in our analysis the ratio of the number of non-executive directors divided by the total members of the board.

Audit committees also have an important role in the firm's financial reporting process (Klein 2002), so their effectiveness can also have an important effect on the firm's IFRS restatement process. The Combined Code on Corporate Governance (2003), which sets the corporate governance standards for UK firms, requires the existence of at least three non-executive directors as members of the audit committee. Following the recommendations of the Code all firms in the sample have an audit committee, therefore the use of an audit committee indicator variable wouldn't be of any use to our analysis. Instead we include the audit committee's size in the model. Beasley (1996) shows that larger boards of directors increase the likelihood of falsified financial reporting practices due to bureaucratic and free-rider problems; this could be the case with audit committees as well. However, we expect that a relatively small committee (average number of audit committee members in our sample is 3.5) will not face the same problems and, on the contrary, could lead to a higher degree of scrutiny of the firm's financial reporting practices.

3.3.5. Endogeneity concerns and additional tests

First of all, we need to take into account the fact that decisions that are related to accounting policy (like the IFRS restatements) and choices like the type of vesting targets included in an executive pay contract can be driven by common principal factors. Such factors can be the underlying economic characteristics of a firm (Begley and Feltham 1999) or the firm's investment opportunity set (Skinner 1993), both of which cannot be captured in the model that we use. Therefore, for robustness of our results, we need to control for potential endogeneity of the decision on the type of targets that are included in a managerial pay contract.

As an exogenous variable we use a dummy of whether a firm has hired a compensation consultant or not. This variable is independent of the choices of the firm related to IFRS reconciliations, but related to the structure of executive pay contracts. The literature has not yet established a relationship between the choice of consultants and the targets chosen in pay contracts, but an effect of compensation consultants on the levels and structure of executive pay has been supported by a number of studies (Cadman et al. 2010; Conyon et al. 2009). We collect the relevant data on the use of a pay consultant from BoardEx or the firms' annual reports.

To control for endogeneity, we run our model in two stages. In the first stage, we model the vesting target decision as a probit model, where we consider the accounting related/EPS dummy as an endogenously determined binary variable, and in the second stage the predicted probabilities are used as an instrument for the accounting related/EPS variable in an OLS regression for the restatements[3].

To further check the robustness of our results, we incorporate one of the main assumptions of Hypothesis 1 into the research design for Hypothesis 2, namely that managers of well- and- underperforming firms have different incentives to use IFRS restatements. Therefore, for Hypothesis 2 apart from splitting our sample in terms of historic EPS volatility we further distinguish between firms that are performing well and poorly during the last two years prior to the introduction of IFRS.

Moreover, in a number of firms the compensation committee decides whether the conditions set in the pay contract have been met and also which part of the award becomes payable to the CEO at the end of each year and not at the end of the 3-year period, a policy

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[3] To run this model we use the two-step treatreg command in Stata

known as "cliff vesting". To control for this case we distinguish between poorly and well performing firms and we split our sample into above/below median in terms of yearly average EPS increase during the last two years prior to the introduction of IFRS.

3.4. Results

3.4.1. Descriptive Statistics

Table 3.1 presents statistics on the terms of CEO long term incentive pay schemes in the first year of the introduction of IFRS for the firms in our sample. Column 1 includes firms that use only accounting related targets (EPS and Return-on-Investments in most cases), column 2 firms that have a combination of accounting and market based targets (usually Total Shareholder or Stock Return), column 3 firms that have market based targets only, and column 4 firms that have set no targets. Row 1 refers to all firms in our sample, Row 2 to firms with EPS targets and Row 3 to firms with ROI targets. We observe that almost two thirds of the firms include an accounting related target in their compensation contracts. A quarter of them choose to use exclusively accounting targets while the remaining use a combination of accounting and market targets. We also observe that the vast majority of the firms (almost nine out of ten) with accounting related targets, and more than half of the whole sample, include an EPS target in their CEO pay contracts. This explains our decision to examine separately these firms and their behaviour in the IFRS restatement process.

Insert Table 3.1 about here

Table 3.2, Panel A shows descriptive statistics on the IFRS restatements for each accounting figure we examine. Panel B shows similar statistics for the unexpected

component of the restatements which are the residuals derived after running equation 3.1 for each figure. As we mentioned before, accruals (current and non-current) and goodwill are scaled by the total assets of the firm for the year of introduction of IFRS. In both cases, We first split the sample into ten deciles where we can observe large negative and positive adjustments in the lowest and highest deciles, e.g., more than 12% and 9% of the firm's total assets negative restatement of current accruals at the first decile for the actual restatements and their unexpected component respectively. The average and median values of the restatements for the whole sample relatively to the size of the firm are very small. However, the existence of a substantial number of large negative and positive adjustments indicates that there is an unsystematic pattern in IFRS restatements, which could be potentially related to executive pay related incentives.

Insert Table 3.2 about here

Table 3.3 reports descriptive statistics on the variables used in our analysis, while Table 3.4 shows the correlations between these variables. The median size of the firms in our sample in terms of market capitalisation is 570.8 million GBP, while 90% of our sample firms have hired one of the "Big-Four" auditors. The CEO tenure for the firms in our sample is almost 6 years, while the average number of audit committee members is 3.5. Almost all of our variables are positively skewed, while market capitalisation and CEO ownership have a high kurtosis. Moreover, highly levered firms are more likely to adopt an accounting related target consistent with the predictions of Skinner (1993).

Insert Table 3.3 about here

Insert Table 3.4 about here

3.4.2. Main results

Table 3.5 shows the results of our multivariate regressions on the unexpected part of IFRS-based restatements of the on current/non-current accruals and goodwill. Panel A refers to firms with below industry median increase in EPS figures under UK GAAP over the last two years, while Panel B refers to firms with above industry median increase. The existence of a non market/EPS related target has a negative effect on current accrual restatements for underperforming firms and a positive effect for firms that are performing well. Although the signs are consistent with our initial hypothesis, the coefficients are not statistically significant. We similarly find statistically insignificant results for non current accruals and goodwill restatements.

Interestingly we observe a strong negative effect of leverage on the unexpected part of the restated figures for underperforming firms, while this effect is less strong for well performing firms. This is consistent with the results from Christensen et al. (2009) and it strongly indicates that previous debt contracting related arrangements have an effect on the actual IFRS based restatement process. Although beyond the scope of this chapter, this is an issue that needs further analysis. Moreover, the percentage of CEO ownership, a proxy for CEO power, is negatively related to current accrual restatements for poorly and well performing firms. If we assume that the managerial power approach predictions are correct (Bebchuk et al. 2002), this could indicate that powerful CEOs try to inflate 2005 income by using the IFRS restatements for the previous year. Regardless of the past performance of the firm they use IFRS restatements for personal wealth increase.

Table 3.5 also confirms an industry effect on current accrual IFRS restatements. A number of industry dummies are statistically significant at the 5% level (untabulated result) for

firms in Panel A. We get similar results for well performing firms where additionally we observe a negative effect on current accrual restatements for firms with higher percentages of intangible assets. Overall, based on the results from Table 3.5 we fail to find strong signs of managerial opportunism related to pay motives in IFRS restatements.

Insert Table 3.5 about here

Table 3.6 reports the results of the regressions of IFRS restated figures, after splitting our sample in terms of historic EPS volatility. Panel A refers to firms with below industry median historic EPS volatility, while panel B refers to firms with above industry median volatility. The existence of a non market/EPS related target in CEO pay contracts has a negative effect on the current accruals' IFRS-based restatements for firms with high historic EPS volatility and a positive effect for firms with low volatility. Although the signs of the coefficients are consistent with Hypothesis 2, in both cases they are statistically insignificant.

Table 3.6 also confirms the results from Table 3.5 on the effect of leverage and CEO ownership on IFRS restatements. High levered firms use IFRS restatements to inflate future income and potentially avoid future debt covenant violations. Also more powerful CEOs with higher levels of firm ownership will make negative IFRS restatements with a view to personal wealth increase.

Insert Table 3.6 about here

Table 3.7 shows the results of the regressions, after incorporating the strength of CEOs' pay incentives into our analysis. We fail to find any stronger signs of opportunistic

behaviour for managers that have higher pay related incentives to use current accrual restatements in their interest. The results do not change substantially when we include a dummy variable for the existence of an option/LTIP scheme instead of the equity pay ratio as an independent variable in the model (untabulated results).

Insert Table 3.7 about here

Table 3.8 shows the results of the controls for potential endogeneity of the target setting decision. Columns 1 and 2 report the results of the probit model for the decision to choose an EPS/non-market based target respectively where we observe that the existence of a compensation consultant has a significant effect on this choice. Moreover, there is an important industry effect, since firms with a higher intangible-to-total assets ratio are more likely to choose an EPS/accounting related target in their executive pay contracts. However, from the remaining columns we fail again to show any strong signs of managerial opportunism related to pay concerns. Thus, we infer that our results so far have not been affected by potential endogeneity problems and our conclusions remain essentially the same. We also run the same controls for all our remaining models and our results do not change substantially. Moreover, we conduct the extra robustness checks described in section 3.3.5 and we do not get any different results (untabulated results in both cases).

Insert Table 3.8 about here

3.5. Conclusions

We use the UK-GAAP to IFRS restatements to study the existence of potential managerial opportunism at the introduction of IFRS. We show that the existence of an accounting related/EPS vesting target in executive pay contracts does not appear to have an effect on the restatements of accruals (current and non-current) and goodwill. These results do not change materially after examining our main hypothesis under different settings and different types of CEOs who have higher incentives to use the restatements for their personal interest. However, we find strong indications of a debt contracting effect on the unexpected component of the restatements, a result consistent with Christensen et al. (2009). Although it is beyond the scope of this chapter, this is a very interesting finding that needs further analysis.

Although previous studies show evidence that the strength of the informational and market related benefits from IFRS are associated with institutional and legislative motivations behind their implementation (Daske et al. 2008; Garcia Osma and Pope 2009; Li 2010), we show that managerial pay related incentives do not seem to have a significant influence on it. We thus contribute to the extended literature on the relationship between accounting policy and incentives. Moreover, drawing on the unique characteristics of the IFRS implementation in the UK, our study tries to focus on specific factors that could have potentially affected the restatements from the local GAAP to IFRS, contrary to previous studies that have mainly focused on their capital market and firm value consequences (Christensen et al. 2009; Horton and Serafeim 2010).

In comparison to the standard literature on positive accounting theory the results of the present chapter are intriguing. The prior literature has concluded that managerial opportunism is a significant explanatory factor for accounting choices, for example with

respect to models of accounting accruals (Watts and Zimmerman 1990). The requirement to produce IFRS reconciliations presented firms with a significant set of opportunities for managing future reported earnings, and many managers had contracts that were explicitly based on earnings targets. Nevertheless we find little or no evidence of managerial opportunism with respect to IFRS restatements. Thus our results call into question the general applicability of the Positive Accounting Theory paradigm.

However, we acknowledge that there are a number of potential reasons that we do not find any strong signs of managerial opportunism that point to different avenues for future work. Firstly it would be interesting to more thoroughly explore the timing considerations in our setting; the vesting date of executive pay stock options could affect managerial decisions with regard to IFRS restatements. There is also scope for developing an improved model for predicting the behaviour of managers with both accounting and market based vesting criteria; for these managers there is a potential trade off between the share price effects of negative reconciliations against the easier achievement of the accounting vesting target. Hence this is another issue that we need to carefully consider in our analysis.

Although our setting makes our analysis less prone to methodological problems very common in accounting policy studies, e.g., inherent endogeneity of firm's policy choices and self selection bias, it is not immune to them; this is one of the possible reasons for failing to show strong signs of managerial opportunism in the introduction of IFRS related to pay incentives. More precisely, our research design might not address the issue of multiple (and potentially conflicting) motivations for the managers' accounting choices in a satisfactory manner (Fields et al. 2001). It would also be very interesting to conduct a comparative study in another economy with a similar to the UK IFRS transition process but with different accounting regime, corporate culture and corporate governance

mechanisms. In the event that dissimilar results are found our lack of strong indications of managerial opportunism at the transition of the UK firms from local GAAP to IFRS could potentially be attributed to special characteristics of the UK economy, such as its relatively strong governance arrangements related to enforcing the rights of shareholders.

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Tables for Chapter 3

TABLE 3.1
Types of vesting targets in CEO long-term pay schemes

The Table presents statistics on the different types of vesting targets set in long-term CEO pay schemes for the firms in our sample in the first year of the implementation of IFRS. Column 1 includes firms that are using only accounting related targets (Earnings-Per-Share and Return-on-Investments in most cases), Column 2 firms that have a combination of accounting and market based targets (usually Total Shareholder or Stock Return), Column 3 firms that have market based targets only, while column 4 firms that have set no targets. Row 1 refers to all firms in our sample, Row 2 to firms with EPS targets and Row 3 to firms with ROI targets.

	Accounting Target (1)	Accounting& Market Targets (2)	Market Target (3)	No Target (4)	Total (5)
All Firms	106	159	110	76	451
Firms with EPS target	101	131			232
Firms with ROI target	5	28			33

TABLE 3.2
Descriptive Statistics of IFRS Restatements

This table provides descriptive statistics on the actual restatements of accounting figures from UK GAAP to IFRS (Panel A) and on the restatements' unexpected component (Panel B). To derive this, we use the residuals of the regression of the restatements of each of the accounting figure on variables that proxy for firms' fundamentals and prior accounting policies (equation 3.1). The first part of the table refers to the means of the restatements per decile, while the second part refers to the whole sample. Current accruals is the change in the working capital (non-cash related current assets minus firm's current liabilities) and non-current accruals is the sum of the depreciation and amortisation for the year and the change in gains or losses on sale of property, plant, and equipment and sale of investments. We use goodwill as is disclosed in the firm's balance sheet respectively. Accruals and goodwill restatements are scaled by the total assets of the firm.

Panel A: Actual restatements

	Current Accruals	Non Current Accruals	Goodwill
Means per Decile			
1st	-0.126	-0.057	-0.158
2nd	-0.039	-0.010	-0.003
3rd	-0.017	-0.003	-0.000
4th	-0.006	-0.001	0.000
5th	-0.000	-0.000	0.000
6th	0.002	0.000	0.002
7th	0.007	0.000	0.005
8th	0.012	0.000	0.010
9th	0.022	0.000	0.018
10th	0.073	0.021	0.079
Deciles size: 45			
Full Sample			
Mean	-0.007	-0.005	-0.004
Median	0.000	0.000	0.005
St. Deviation	0.057	0.038	0.138
Min	-0.388	-0.351	-0.930
Max	0.306	0.587	0.394
Skewness	-1.53	5.54	-11.39
Kurtosis	15.21	140.85	160.77
Observations: 451			

Panel B: Unexpected Component of Restatements

	Current Accruals	Non Current Accruals	Goodwill
Means per Decile			
1st	-0.094	-0.022	-0.031
2nd	-0.038	-0.006	-0.012
3rd	-0.013	-0.001	-0.007
4th	0.001	0.000	-0.004
5th	0.008	0.002	-0.002
6th	0.013	0.003	-0.000
7th	0.017	0.004	0.001
8th	0.023	0.005	0.005
9th	0.032	0.006	0.013
10th	0.052	0.009	0.038
Deciles size: 45			
Full Sample			
Mean	-0.001	0.001	-0.001
Median	0.011	0.002	-0.001
St. Deviation	0.040	0.009	0.017
Min	-0.127	-0.034	-0.047
Max	0.072	0.014	0.054
Skewness	-1.25	-2.00	0.53
Kurtosis	4.33	6.82	4.69
Observations: 451			

TABLE 3.3
Descriptive Statistics

This table provides descriptive statistics on all variables that we use in our models. Market capitalisation, leverage, market-to-book value and volatility are taken from Datastream for the first year of the introduction of IFRS. Intangible-to-Total-Assets is a ratio of the intangible to the total assets of the firm. "Big Four" auditor is a dummy of whether a firm has hired one or not. Tenure is the number of years that a CEO is at her position. Non executives ratio is a ratio of the non-executive members to the total members of the firm's board. CEO ownership is the percentage of the shares of the firm that the CEO holds. The external blockholders variable is the sum of ownership levels for external shareholders with more than 10% of a firm's total stocks. Audit committee is the number of the members of the committee.

Variables	Mean	Median	St.Dev.	Min	Max	Skewness	Kurtosis
Market Capitalisation(millionGBP)	3,612.22	570.89	1,359.82	381	130,000	7.24	64.14
Leverage	15.75	9.57	17.41	0	94.52	1.11	3.78
Intangibles to Total Assets	0.19	0.127	0.20	0	0.938	1.16	3.67
Market-to-Book Ratio	0.42	0.36	0.28	0	1.69	1.30	4.93
Big Four Auditor	0.90	1	0.28	0	1	-2.84	9.1
Tenure	5.70	4.30	5.42	0	39.5	2.10	8.90
Non Executives Ratio	0.57	0.58	0.12	0	0.889	-0.42	4.16
CEO Ownership	0.017	0.001	0.049	0.00	0.46	4.85	31.76
External Blockholders	10.67	0	15.89	0	96.3	1.74	6.29
Volatility	23.37	23.61	14.11	0	66.52	0.26	2.60
Audit Committee	3.3	3	0.96	0	8	0.64	5.26
Observations	451						

TABLE 3.4
Correlation Matrix

This table shows the correlations between the main variables that we use in our models. EPS (non market) target is a dummy variable which takes the value of one if the firm has an EPS (accounting related) target in a CEO contact and zero otherwise. Market capitalisation, leverage, market-to-book value and volatility are taken from Datastream for the first year of the introduction of IFRS. Intangible-to-Total-Assets is a ratio of the intangible to the total assets of the firm. "Big Four" auditor is a dummy of whether a firm has hired one or not. Tenure is the number of years that a CEO is at her position. Non executives ratio is a ratio of the non-executive members to the total members of the firm's board. CEO ownership is the value of the shares of the firm that the CEO holds. The external blockholders variable is the sum of ownership levels for external shareholders with more than 10% of a firm's total stocks. Audit committee is the number of the members of the committee.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Current Accruals Restatement	1.00															
2	Non-current Accruals Restatement	0.04	1.00														
3	Goodwill Restatement	-0.01	-0.16***	1.00													
4	EPS target	-0.04	-0.03	-0.02	1.00												
5	Non Market target	-0.06	-0.03	-0.01	0.86***	1.00											
6	Market Capitalisation	-0.02	0.01	0.01	0.00	-0.00	1.00										
7	Leverage	0.00	0.03	0.05	0.09**	0.12***	0.06	1.00									
8	Intangibles to Total Assets	-0.11**	-0.08*	0.03	0.18***	0.12	-0.06	0.00	1.00								
9	Market-to-Book Value	0.00	-0.00	-0.00	-0.07	-0.00	-0.03	-0.00*	-0.10	1.00							
10	Big 4 Auditor	-0.05	-0.03	-0.01	0.07*	0.07	0.08*	0.10**	0.06	0.05	1.00						
11	Tenure	0.06	0.02	-0.01	-0.00	0.00	-0.04	0.04	-0.01	-0.03	-0.12***	1.00					
12	Non Executives Ratio	-0.03	-0.01	-0.03	0.00	0.06	0.19***	0.11**	0.07	0.11**	0.20***	-0.22***	1.00				
13	CEO Ownership	0.06	-0.01	-0.02	0.03	0.01	-0.08*	-0.12***	-0.00	-0.02	-0.06	0.30	-0.21***	1.00			
14	Large Blockholders	0.00	0.01	0.02	-0.03	-0.06	-0.11**	-0.14***	0.02	0.10**	0.04	-0.01	-0.03	0.10**	1.00		
15	Volatility	-0.07	0.06	0.05	0.01	0.01	-0.03	0.17***	0.04	-0.02	-0.00	0.05	-0.00	-0.02	-0.04	1.00	
16	Audit Committee	-0.00	0.04	-0.01	0.00	0.04	0.28***	0.22***	-0.01	-0.01	0.08*	-0.12*	0.33***	-0.13***	-0.20***	0.00	1.00

TABLE 3.5
Linear Regression of Restated figures on EPS/Non Market dummy and other Control Variables

Panel A refers to firms with that have performed poorly under UK GAAP during the two years prior to the introduction of IFRS (below median industry EPS performance), while panel B to firms that have performed well (above median industry EPS performance). The main dependent variables are the unexpected component of the relevant restated figure at the transition from UK GAAP to IFRS, proxied as the residuals from equation (3.1). EPS (non market) target is a dummy variable which takes the value of one if the firm has an EPS (accounting related) target in a CEO contact and zero otherwise. Market capitalisation, leverage, book-to-market value and volatility are taken from Datastream for the first year of the introduction of IFRS. Intangible-to-Total-Assets is a ratio of the intangible to the total assets of the firm. "Big Four" auditor is a dummy of whether a firm has hired one or not. Tenure is the number of years that a CEO is at her position. Non-executives ratio is a ratio of the non-executive members to the total members of the firm's board. CEO ownership is the percentage of the shares of the firm that the CEO holds. The external blockholders variable is the sum of ownership levels for external shareholders with more than 10% of a firm's total stocks. Audit committee is the number of the members of the committee. Industry dummies are dummies for the industry that the firm operates, while Year is a dummy for the year for introduction of IFRS (2005 or 2006). Accruals and goodwill restatements are scaled by the total assets of the firm. In parentheses we have t-statistics and the asterisks indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance. All estimators are robust.

Panel A: Poorly Performing Firms

	Res(Current Accruals Restatement)		Res(Non-current Accruals Restatement)		Res(Goodwill Restatement)	
	(1)	(2)	(3)	(4)	(5)	(6)
EPS	-0.002		0.002		-0.009	
	(-0.35)		(1.47)		(-0.93)	
Non-market Target		-0.000		-0.000		-0.000
		(-0.07)		(-0.18)		(-0.05)
Leverage	-0.007***	-0.007***	-0.005***	-0.000***	-0.007***	-0.000
	(-5.46)	(-5.37)	(-3.14)	(-3.32)	(-3.10)	(-0.89)
Market-to-Book Value	0	-0.000	0.000**	0.000**	0.000	-0.000
	(-0.71)	(-0.66)	(2.50)	(2.58)	(0.78)	(-1.10)
Intagible to Total Assets	0.027*	0.027*	-0.004	-0.004	0.010	0.006
	(1.87)	(1.83)	(-1.02)	(-0.92)	(0.42)	(0.75)
Ln (Market Capitalization)	0.001	0.001	0.000	0.000	-0.005	0.000
	(0.73)	(0.72)	(0.52)	(0.50)	(-1.40)	(0.06)
CEO Ownership	-0.000**	-0.000**	0.000	-0.000	-0.000	-0.000
	(-2.45)	(-2.44)	(-1.09)	(-0.10)	(-1.27)	(-0.39)
External Shareholders	-0.000	-0.000	-0.000	-0.000	-0.000	0.000
	(-0.81)	(-0.81)	(-1.09)	(-1.12)	(-1.37)	(0.33)
Volatility	0.000	0.000	0.000	0.000	-0.000	-0.000
	(0.99)	(1.01)	(0.25)	(0.17)	(-0.68)	(-1.08)
Big 4 Auditors	-0.016	-0.016	-0.002	-0.002	0.063***	-0.000
	(-1.46)	(-1.49)	(-1.61)	(-1.51)	(2.68)	(-0.01)
Tenure	0.000	0.000	-0.000	-0.000	0.000	0.000
	(1.59)	(1.58)	(-0.52)	(-0.54)	(0.85)	(0.68)
Non-Executives Ratio	-0.018	-0.019	-0.010*	-0.009	-0.057	-0.009
	(-0.82)	(-0.92)	(-1.67)	(-1.53)	(-1.33)	(-0.67)
Audit Committee	-0.000	-0.000	0.000	0.000	0.008	-0.007
	(-0.16)	(-0.16)	(0.39)	(0.33)	(1.20)	(-0.44)
Year	0.009	0.010	0.000	0.000	-0.006	0.001
	(1.51)	(1.55)	(0.38)	(0.27)	(-0.59)	(0.59)
Constant	-0.001	-0.001	0.003	0.003	-0.014	0.008
	(-0.06)	(-0.07)	(0.65)	(0.77)	(-0.35)	(0.80)
Industry Dummies	YES	YES	YES	YES	YES	YES
R-squared	0.144	0.143	0.089	0.079	0.113	0.046
Observations	225	225	225	225	225	225

Panel B: Well Performing Firms

	Res(Current Accruals Restatement)		Res(Non-current Accruals Restatement)		Res(Goodwill Restatement)	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
EPS	0.007		0.000		0.000	
	(1.40)		(0.18)		(0.24)	
Non-market Target		0.005		-0.000		-0.004
		(0.87)		(-0.43)		(-1.61)
Leverage	**-0.029***	**-0.028***	0.005	**0.005***	**-0.003**	-0.002
	(-1.81)	**(-1.78)**	(1.64)	**(1.65)**	**(-0.61)**	(-0.54)
Market-to-Book Value	0.000	0.000	**-0.000****	**-0.000****	**0.000****	**0.000****
	(1.04)	(1.09)	**(-2.34)**	**(-2.43)**	**(2.31)**	**(2.15)**
Intagible to Total Assets	**-0.024***	**-0.022***	-0.004	-0.004	0.006	0.006
	(-1.89)	**(-1.77)**	(-1.15)	(-1.18)	(0.81)	(0.85)
Ln (Market Capitalization)	0.000	0.001	-0.000	-0.000	0.000	0.000
	(0.45)	(0.65)	(-0.97)	(-0.95)	(0.33)	(0.31)
CEO Ownership	**-0.000*****	**-0.000*****	**0.000***	**0.000***	-0.000	0.000
	(-13.41)	**(-12.28)**	**(1.66)**	**(1.73)**	(-0.32)	(0.34)
External Shareholders	-0.000	-0.000	-0.000	-0.000	0.000	0.000
	(-0.49)	(-0.58)	(-1.49)	(-1.48)	(0.01)	(0.08)
Volatility	0.000	0.000	0.000	0.000	0.000	0.000
	(0.05)	(0.07)	(0.58)	(0.59)	(1.21)	(1.27)
Big 4 Auditors	-0.009	-0.008	**-0.002****	**-0.002****	0.006	0.006
	(-1.18)	(-1.12)	**(-2.13)**	**(-2.10)**	(1.56)	(1.64)
Tenure	0.000	0.000	**0.000****	**0.000****	**-0.00****	**-0.000****
	(1.31)	(1.33)	**(2.13)**	**(2.17)**	**(-2.17)**	**(-2.21)**
Non-Executives Ratio	-0.024	-0.024	0.003	0.003	-0.007	-0.006
	(-1.31)	(-1.34)	(0.80)	(0.83)	(-0.81)	(-0.71)
Audit Committee	-0.000	-0.000	0.000	0.003	-0.001	-0.001
	(-0.32)	(-0.25)	(0.50)	(0.47)	(-1.08)	(-1.15)
Year	-0.001	-0.001	-0.001	-0.001	0.001	0.001
	(-0.32)	(-0.19)	(-0.94)	(-0.92)	(0.54)	(0.58)
Constant	**0.036****	**0.034****	0.003	0.003	-0.001	-0.000
	(2.32)	**(2.18)**	(0.70)	(0.76)	(-0.13)	(-0.04)
Industry Dummies	YES	YES	YES	YES	YES	YES
R-squared	0.129	0.123	0.114	0.114	0.094	0.104
Observations	226	226	226	226	226	226

TABLE 3.6
Linear Regression of Current Accrual Restatements on EPS dummy and other Control Variables, after splitting the sample in terms of historic EPS volatility

Panel A refers to firms with low (below industry median) historic EPS volatility, while panel B to firms with high (above industry median) EPS volatility. The main dependent variables are the unexpected component of the relevant restated figure at the transition from UK GAAP to IFRS, proxied as the residuals from equation (3.1). EPS (non market) target is a dummy variable which takes the value of one if the firm has an EPS (accounting related) target in a CEO contact and zero otherwise. Market capitalisation, leverage, book-to-market value and volatility are taken from Datastream for the first year of the introduction of IFRS. Intangible-to-Total-Assets is a ratio of the intangible to the total assets of the firm. "Big Four" auditor is a dummy of whether a firm has hired one or not. Tenure is the number of years that a CEO is at her position. Non executives ratio is a ratio of the non-executive members to the total members of the firm's board. CEO ownership is the percentage of the shares of the firm that the CEO holds. The external blockholders variable is the sum of ownership levels for external shareholders with more than 10% of a firm's total stocks. Audit committee is the number of the members of the committee. Industry dummies are dummies for the industry that the firm operates, while Year is a dummy for the year for introduction of IFRS (2005 or 2006). Accruals and goodwill restatements are scaled by the total assets of the firm. In parentheses we have t-statistics and the asterisks indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance. All estimators are robust.

(Panel A-Low EPS Volatility)

	Res(Current Accruals Restatement)		Res(Non-current Accruals Restatement)		Res(Goodwill Restatement)	
	(1)	(2)	(3)	(4)	(5)	(6)
EPS	0.005		0.000		0.000	
	(-1.05)		(0.36)		(0.13)	
Non-market Target		0.002		-0.000		-0.001
		(0.39)		(-0.52)		(-0.57)
Leverage	-0.007***	-0.007***	-0.000	-0.000	-0.001*	-0.001
	(-9.33)	(-8.61)	(-1.33)	(-1.23)	(-1.67)	(-1.62)
Market-to-Book Value	-0.000*	-0.000	0.000***	0.000***	-0.000	-0.000
	(-1.73)	(-1.57)	(3.29)	(3.29)	(-1.07)	(-1.09)
Intagible to Total Assets	-0.002	-0.004	-0.002	-0.002	-0.006	-0.006
	(-0.17)	(-0.35)	(-0.63)	(-0.57)	(-0.85)	(-0.83)
Ln (Market Capitalization)	0.003	0.003	0.000	0.000	0.001	0.001
	(1.53)	(1.42)	(0.52)	(0.52)	(1.12)	(1.12)
CEO Ownership	-0.000***	-0.000***	0.000	0.000	-0.000	-0.000
	(-13.13)	(-13.60)	(0.88)	(1.06)	(-0.66)	(-0.43)
External Shareholders	0.000	0.000	-0.000	-0.000	0.000	0.000
	(0.58)	(0.57)	(-1.01)	(-1.01)	(0.13)	(0.15)
Volatility	0.000	0.000	0.000	0.000	0.000	0.000
	(0.03)	(0.17)	(0.46)	(0.38)	(1.34)	(1.29)
Big 4 Auditors	-0.021***	-0.022***	-0.002	-0.002	0.000	0.000
	(-3.64)	(-4.04)	(-1.47)	(-1.41)	(0.05)	(0.13)
Tenure	0.000**	0.000*	0.000	0.000	-0.000	-0.000
	(2.10)	(1.96)	(0.44)	(0.54)	(-1.63)	(-1.56)
Non-Executives Ratio	-0.017	-0.018	-0.003	-0.003	-0.021*	-0.021*
	(-1.07)	(-1.10)	(-0.71)	(-0.72)	(-1.87)	(-1.88)
Audit Committee	-0.006**	-0.006*	0.000	0.000	0.000	0.000
	(-2.04)	(-1.93)	(1.11)	(1.06)	(0.08)	(0.05)
Year	0.006	0.006	-0.001	-0.001	0.004	0.004
	(1.33)	(1.39)	(-1.11)	(-1.16)	(1.53)	(1.50)
Constant	0.022	0.021	0.001	0.001	0.005	0.005
	(1.30)	(1.23)	(0.27)	(0.34)	(0.53)	(0.60)
Industry Dummies	YES	YES	YES	YES	YES	YES
R-squared	0.208	0.204	0.068	0.069	0.091	0.092
Observations	225	225	225	225	225	225

Panel B (High EPS Volatility)

	Res(Current Accruals Restatement)		Res(Non-current Accruals Restatement)		Res(Goodwill Restatement)	
	(1)	(2)	(3)	(4)	(5)	(6)
EPS	0.008		0.001		-0.002	
	(1.51)		(0.92)		(-1.10)	
Non-market Target		0.002		-0.000		-0.001
		(0.36)		(-0.06)		(-0.69)
Leverage	-0.035***	-0.035***	0.001	0.001	-0.000	-0.000
	(-3.26)	(-3.25)	(0.63)	(0.58)	(-0.14)	(-0.16)
Market-to-Book Value	0.000*	0.000*	-0.000*	-0.000**	0.000	0.000
	(1.74)	(1.73)	(-1.95)	(-2.03)	(1.16)	(1.27)
Intagible to Total Assets	0.005	0.008	-0.006	-0.005	0.015*	0.014*
	(0.39)	(0.59)	(-1.39)	(-1.34)	(1.89)	(1.80)
Ln (Market Capitalization)	0.000	0.000	-0.000	-0.000	-0.000	-0.000
	(0.30)	(0.38)	(-0.50)	(-0.43)	(-0.13)	(-0.15)
CEO Ownership	-0.000***	-0.000***	-0.000***	-0.000***	0.000***	0.000***
	(-8.29)	(-8.97)	(-7.55)	(-7.85)	(5.84)	(6.09)
External Shareholders	-0.000	-0.000	-0.000	-0.000	0.000	0.000
	(-1.50)	(-1.53)	(-1.23)	(-1.24)	(0.28)	(0.26)
Volatility	0.000	0.000	-0.000	-0.000	-0.000	-0.000
	(0.92)	(0.95)	(-0.19)	(-0.16)	(-1.19)	(-1.14)
Big 4 Auditors	-0.001	-0.001	-0.002	-0.002	0.004	0.004
	(-0.13)	(-0.09)	(-1.31)	(-1.26)	(0.77)	(0.72)
Tenure	0.000	0.000	0.000	0.000	0.000	-0.000
	(1.60)	(1.54)	(1.57)	(1.55)	(0.04)	(-0.01)
Non-Executives Ratio	-0.034	-0.028	-0.002	-0.002	0.015	0.014
	(-1.40)	(-1.17)	(-0.57)	(-0.40)	(1.62)	(1.47)
Audit Committee	0.006**	0.006*	0.000	0.000	-0.002**	-0.002**
	(2.09)	(1.95)	(0.38)	(0.29)	(-2.03)	(-2.02)
Year	0.000	0.000	-0.000	-0.000	0.001	0.001
	(0.00)	(0.10)	(-0.27)	(-0.20)	(0.58)	(0.52)
Constant	0.006	0.006	0.004	0.004	-0.005	-0.005
	(0.30)	(0.29)	(0.84)	(0.89)	(-0.62)	(-0.56)
Industry Dummies	YES	YES	YES	YES	YES	YES
R-squared	0.150	0.142	0.108	0.105	0.139	0.136
Observations	226	226	226	226	226	226

TABLE 3.7
Linear Regression of Restated figures on Equity Pay Ratio, EPS/Non Market dummy and other Control Variables

Panel A refers to firms with that have performed poorly under UK GAAP during the two years prior to the introduction of IFRS (below median industry EPS performance), while panel B to firms that have performed well (above median industry EPS performance). The main dependent variables are the unexpected component of the relevant restated figure at the transition from UK GAAP to IFRS, proxied as the residuals from equation (3.1).EPS (non market) target is a dummy variable which takes the value of one if the firm has an EPS (accounting related) target in a CEO contact and zero otherwise. Equitymix is the ratio of equity related CEO pay divided by the total compensation. Market capitalisation, leverage, book-to-market value and volatility are taken from Datastream for the first year of the introduction of IFRS. Intangible-to-Total-Assets is a ratio of the intangible to the total assets of the firm. "Big Four" auditor is a dummy of whether a firm has hired one or not. Tenure is the number of years that a CEO is at her position. Non executives ratio is a ratio of the non-executive members to the total members of the firm's board. CEO ownership is the percentage of the shares of the firm that the CEO holds. The external blockholders variable is the sum of ownership levels for external shareholders with more than 10% of a firm's total stocks. Audit committee is the number of the members of the committee. Industry dummies are dummies for the industry that the firm operates, while Year is a dummy for the year for introduction of IFRS (2005 or 2006). Accruals and goodwill restatements are scaled by the total assets of the firm. In parentheses we have t-statistics and the asterisks indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance. All estimators are robust.

Panel A: Poorly Performing Firms

	Res(Current Accruals Restatement)		Res(Non-current Accruals Restatement)		Res(Goodwill Restatement)	
	(1)	(2)	(3)	(4)	(5)	(6)
EPS	-0.008		0.002		-0.008**	
	(-0.81)		(1.20)		(-2.18)	
Non-market Target		0.004		-0.001		-0.006
		(0.34)		(-0.51)		(-1.38)
Equitymix	-0.016	-0.004	0.001	0.000	0.001	0.003
	(-1.13)	(-0.31)	(0.32)	(0.17)	(0.19)	(0.55)
EPS* Equitymix	0.02		-0.001		0.015	
	(-0.89)		(-0.32)		(1.40)	
NonMarket*Equitymix		-0.014		0.003		**0.017***
		(-0.49)		(0.62)		**(1.70)**
Leverage	**-0.007***	**-0.007***	**-0.000***	**-0.000***	-0.000	-0.000
	(-5.44)	**(-5.45)**	**(-3.29)**	**(-3.42)**	(-0.97)	(-0.89)
Market-to-Book Value	-0.000	-0.000	**0.000**	**0.000**	-0.000	-0.000
	(-0.55)	(-0.58)	**(2.38)**	**(2.42)**	(-1.51)	(-1.23)
Intagible to Total Assets	**0.028***	**0.028***	-0.004	-0.004	0.004	0.005
	(1.90)	**(1.91)**	(-1.01)	(-0.96)	(0.49)	(0.62)
Ln (Market Capitalization)	0.002	0.002	0.000	0.000	-0.000	-0.000
	(0.80)	(0.82)	(0.44)	(0.34)	(-1.19)	(-0.35)
CEO Ownership	**-0.000***	**-0.000***	0.000	-0.000	-0.000	-0.000
	(-2.45)	**(-2.37)**	(0.20)	(-0.19)	(-0.67)	(-0.56)
External Shareholders	-0.000	-0.000	-0.000	-0.000	0.000	0.000
	(-0.91)	(-0.87)	(-1.05)	(-1.07)	(0.49)	(0.46)
Volatility	0.000	0.000	0.000	0.000	-0.000	-0.000
	(1.05)	(1.05)	(0.23)	(0.16)	(-1.12)	(-1.15)
Big 4 Auditors	-0.015	-0.015	-0.002	-0.002	-0.000	-0.000
	(-1.44)	(-1.43)	(-1.61)	(-1.56)	(-0.25)	(-0.17)
Tenure	0.000	0.000	-0.000	-0.000	0.000	0.000
	(1.53)	(1.42)	(-0.52)	(-0.45)	(0.95)	(1.01)
Non-Executives Ratio	-0.013	-0.018	**-0.010***	-0.009	-0.008	-0.009
	(-0.62)	(-0.84)	**(-1.74)**	(-1.54)	(-0.60)	(-0.71)
Audit Committee	-0.000	-0.000	0.000	0.000	-0.000	-0.000
	(-0.10)	(-0.15)	(0.36)	(0.34)	(-0.55)	(-0.44)

	Res(Current Accruals Restatement)		Res(Non-current Accruals Restatement)		Res(Goodwill Restatement)	
	(1)	(2)	(3)	(4)	(5)	(6)
Year	0.009	0.010	0.000	0.000	0.000	0.000
	(1.53)	(1.63)	(0.37)	(0.18)	(0.32)	(0.33)
Constant	-0.003	-0.004	0.003	0.004	0.012	0.011
	(-0.15)	(-0.19)	(0.65)	(0.84)	(1.21)	(1.05)
Industry Dummies	YES	YES	YES	YES	YES	YES
R-squared	0.148	0.146	0.090	0.081	0.074	0.063
Observations	225	225	225	225	225	225

Panel B: Well Performing Firms

	Res(Current Accruals Restatement)		Res(Non-current Accruals Restatement)		Res(Goodwill Restatement)	
	(1)	(2)	(3)	(4)	(5)	(6)
EPS	0.010		-0.000		**-0.000**	
	(1.12)		(-0.03)		**(-0.12)**	
Non-market Target		0.008		-0.001		-0.002
		(1.04)		(-0.49)		(-0.53)
Equitymix	-0.004	-0.002	-0.002	-0.002	-0.005	-0.002
	(-0.32)	(-0.22)	(-0.52)	(-0.58)	(-0.83)	(-0.46)
EPS* Equitymix	-0.006		0.001		0.003	
	(-0.33)		(0.22)		(0.40)	
NonMarket*Equitymix		-0.014		0.001		-0.007
		(-0.60)		(0.24)		(-0.71)
Leverage	**-0.028***	**-0.028***	**0.005***	**0.005***	-0.002	-0.002
	(-1.79)	**(-1.76)**	**(1.69)**	**(1.70)**	(-0.57)	(-0.50)
Market-to-Book Value	0.000	0.000	**-0.000****	**-0.000****	**0.000****	0.000**
	(1.03)	(1.07)	**(-2.26)**	**(-2.37)**	**(2.31)**	(2.12)
Intagible to Total Assets	**-0.024***	**-0.022***	-0.004	-0.004	0.007	0.007
	(-1.88)	**(-1.77)**	(-1.11)	(-1.13)	(0.83)	(0.86)
Ln (Market Capitalization)	0.001	0.001	-0.000	-0.000	0.000	0.005
	(0.62)	(0.72)	(-0.65)	(-0.61)	(0.52)	(0.50)
CEO Ownership	**-0.000*****	**-0.000*****	0.000	**0.000***	-0.000	-0.000
	(-12.46)	**(-11.54)**	(1.53)	**(1.66)**	(-0.32)	(-0.01)
External Shareholders	-0.000	-0.000	-0.000	-0.000	-0.000	0.000
	(-0.54)	(-0.62)	(-1.52)	(-1.51)	(-0.02)	(0.03)
Volatility	0.000	0.000	0.000	0.000	0.000	0.000
	(0.15)	(0.13)	(0.59)	(0.63)	(1.27)	(1.39)
Big 4 Auditors	-0.009	-0.008	**-0.002****	**-0.002****	0.006	0.006
	(-1.18)	(-1.14)	**(-2.11)**	**(-2.05)**	(1.56)	(1.60)
Tenure	0.000	0.000	**0.000****	**0.000****	**-0.000****	**-0.000****
	(1.25)	(1.23)	**(2.01)**	**(2.06)**	**(-2.17)**	**(-2.24)**
Non-Executives Ratio	-0.023	-0.022	0.003	0.003	-0.007	-0.005
	(-1.29)	(-1.25)	(0.83)	(0.81)	(-0.79)	(-0.61)
Audit Committee	-0.000	-0.000	0.000	0.000	-0.001	-0.001
	(-0.31)	(-0.28)	(0.48)	(0.47)	(-1.09)	(-1.17)
Year	-0.001	-0.000	-0.001	-0.001	0.001	0.001
	(-0.33)	(-0.15)	(-0.97)	(-0.95)	(0.50)	(0.60)
Constant	**0.034***	**0.033***	0.003	0.003	-0.001	-0.001
	(2.06)	**(2.05)**	(0.62)	(0.65)	(-0.16)	(-0.15)
Industry Dummies	YES	YES	YES	YES	YES	YES
R-squared	0.131	0.126	0.116	0.117	0.096	0.109
Observations	226	226	226	226	226	226

TABLE 3.8
Two step model for correction of endogeneity of vesting targets

This is a two step model where the first step is a probit model (columns 1 or 2) and the second step is an OLS model (columns 2 to 10), where the predicted probabilities from models 1 and 2 are used as instruments for current accrual reconciliations for models 3,5,7,9 and 4,6,8,10 respectively. Panel A refers to firms with that have performed poorly under UK GAAP during the two years prior to the introduction of IFRS (below median industry EPS performance), while panel B to firms that have performed well (above median industry EPS performance). The main dependent variables in columns 3 to 10 are the unexpected component of the relevant restated figure at the transition from UK GAAP to IFRS, proxied as the residuals from equation (3.1)Pay consultant dummy takes the value of 1 if the firm is using a compensation consultant and zero otherwise. EPS (non market) target is a dummy variable which takes the value of one if the firm has an EPS (accounting related) target in a CEO contact and zero otherwise. Market capitalisation, leverage, book-to-market value and volatility are taken from Datastream for the first year of the introduction of IFRS. Intangible-to-Total-Assets is a ratio of the intangible to the total assets of the firm. "Big Four" auditor is a dummy of whether a firm has hired one or not. Tenure is the number of years that a CEO is at her position. Non-executives ratio is a ratio of the non-executive members to the total members of the firm's board. CEO ownership is the percentage of the shares of the firm that the CEO holds. The external blockholders variable is the sum of ownership levels for external shareholders with more than 10% of a firm's total stocks. Audit committee is the number of the members of the committee. Industry dummies are dummies for the industry that the firm operates, while Year is a dummy for the year for introduction of IFRS (2005 or 2006). Accruals and goodwill restatements are scaled by the total assets of the firm. In parentheses we have t-statistics and the asterisks indicate a 1%(***), 5%(**) and 10%(*) level of statistical significance. All estimators are robust.

Panel A: Poorly Performing Firms

	EPS target	Non-market Target	Res(Current Accruals Restatement)		Res(Non-current Accruals Restatement)		Res(Goodwill Restatement)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
EPS			0.008		0.005		-0.005	
			(0.43)		(1.11)		(-0.62)	
Non-market Target				-0.009		0.000		-0.023
				(-0.18)		(0.05)		(-0.99)
Pay Consultant	0.951***	0.263***						
	(3.91)	(2.98)						
Leverage	-0.046	-0.104	-0.007***	-0.007***	-0.000	-0.000	-0.000	-0.000
	(-0.47)	(-0.45)	(-3.05)	(-3.06)	(-0.88)	(-0.97)	(-0.48)	(-0.60)
Market-to-Book Value	-0.003	0.001	-0.000	-0.000	0.000	0.000	-0.000	-0.000
	(-0.74)	(0.24)	(-0.29)	(-0.36)	(1.52)	(1.34)	(-1.24)	(-0.96)
Intagible to Total Assets	0.680	-0.115	0.025*	0.026*	-0.005	-0.004	0.007	0.004
	(1.38)	(-0.19)	(1.70)	(1.79)	(-1.47)	(-1.20)	(1.09)	(0.64)
Ln (Market Capitalization)	-0.040	0.037	0.001	0.001	0.000	0.000	0.000	0.000
	(-0.59)	(0.49)	(0.87)	(0.87)	(0.56)	(0.48)	(0.05)	(0.42)

TABLE 3.8, Panel A (continued)

	EPS target	Non-market Target	Res(Current Accruals Restatement)		Res(Non-current Accruals Restatement)		Res(Goodwill Restatement)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CEO Ownership	-0.003	-0.330	**-0.000****	**-0.000****	0.000	-0.000	-0.000	-0.000
	(-0.78)	(-0.34)	**(-2.02)**	**(-2.22)**	(0.29)	(-0.03)	(-0.48)	(-0.54)
External Shareholders	-0.000	**-0.015***	-0.000	-0.000	-0.000	-0.000	0.000	-0.000
	(-0.16)	**(-1.94)**	(-0.86)	(-0.78)	(-1.01)	(-0.78)	(0.30)	(-0.44)
Volatility	-0.009	0.001	0.000	0.000	0.000	0.000	-0.000	-0.000
	(-1.57)	(0.24)	(1.26)	(1.21)	(0.53)	(0.23)	(-1.29)	(-0.85)
Big 4 Auditors	0.136	0.101	-0.017	-0.016	-0.003	-0.002	0.000	0.000
	(0.36)	(0.25)	(-1.59)	(-1.50)	(-1.28)	(-1.07)	(0.13)	(0.11)
Tenure	-0.006	-0.007	0.000	0.000	-0.000	-0.000	0.000	0.000
	(-0.32)	(-0.33)	(1.52)	(1.48)	(-0.58)	(-0.57)	(0.68)	(0.46)
Non-Executives Ratio	1.080	-0.251	-0.024	-0.019	**-0.012***	-0.009	-0.006	-0.009
	(1.26)	(-0.26)	(-0.89)	(-0.79)	**(-1.90)**	(-1.58)	(-0.50)	(-0.79)
Audit Committee	-0.100	**-0.230***	-0.000	-0.001	0.000	0.000	-0.000	-0.002
	(-0.91)	**(-1.91)**	(-0.17)	(-0.26)	(0.45)	(0.32)	(-0.55)	(-1.01)
Year	-0.125	0.071	**0.010***	**0.010***	0.000	0.000	0.001	0.001
	(-0.64)	(0.32)	**(1.81)**	**(1.77)**	(0.59)	(0.31)	(0.44)	(0.62)
Constant	-0.429	-0.244	-0.004	0.001	0.002	0.003	0.009	0.016
	(-0.61)	(-0.31)	(-0.19)	(0.05)	(0.48)	(0.57)	(1.02)	(1.23)
Industry Dummies	YES	YES	YES	YES	YES	YES	YES	YES
Observations	225	225	225	225	225	225	225	225

Panel B: Well Performing Firms

	EPS target	Non-market Target	Res(Current Accruals Restatement)		Res(Non-current Accruals Restatement)		Res(Goodwill Restatement)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
EPS			-0.013		0.006		0.013	
			(-0.31)		(0.61)		(0.64)	
Non-market Target				0.059		-0.009		0.022
				(1.10)		(-0.78)		(0.88)
Pay Consultant	**0.364****	**0.231****						
	(2.26)	**(2.15)**						
Leverage	0.193	0.248	**-0.027****	**-0.033****	**0.004***	**0.006****	-0.004	-0.004
	(0.46)	(0.56)	**(-2.20)**	**(-2.35)**	**(1.68)**	**(2.03)**	(-0.74)	(-0.75)
Market-to-Book Value	-0.002	-0.007	0.000	0.000	-0.000	-0.000	**0.000***	0.000
	(-0.51)	(-1.05)	(1.12)	(1.51)	(-0.82)	(-1.28)	**(1.67)**	(1.62)
Intagible to Total Assets	0.825*	-0.045	**-0.018**	**-0.021**	-0.005	-0.004	0.003	0.007
	(1.67)	(-0.09)	**(-1.01)**	**(-1.36)**	(-1.37)	(-1.28)	(0.37)	(0.98)
Ln (Market Capitalization)	0.100	-0.037	0.001	0.002	-0.000	-0.000	-0.000	0.000
	(1.39)	(-0.45)	(0.66)	(0.89)	(-1.22)	(-1.26)	(-0.14)	(0.64)
CEO Ownership	0.000	0.000	**-0.000*****	**-0.000*****	0.000	0.000	-0.000	-0.000
	(0.69)	(0.72)	**(-2.86)**	**(-2.83)**	(0.18)	(0.87)	(-0.33)	(-0.65)
External Shareholders	-0.002	0.005	-0.000	-0.000	-0.000*	-0.000	0.000	-0.000
	(-0.37)	(0.88)	(-0.67)	(-1.00)	(-1.67)	(-1.18)	(0.16)	(-0.42)
Volatility	0.001	0.001	0.000	-0.000	0.000	0.000	0.000	0.000
	(0.14)	(0.20)	(0.12)	(-0.05)	(0.44)	(0.60)	(1.22)	(1.09)
Big 4 Auditors	0.141	0.147	-0.007	-0.009	-0.003	-0.002	0.005	0.006
	(0.39)	(0.40)	(-0.75)	(-0.84)	(-1.47)	(-1.26)	(1.18)	(1.28)
Tenure	0.003	0.003	0.000	0.000	**0.000***	**0.000***	**-0.000****	**-0.000****
	(0.23)	(0.19)	(1.13)	(0.79)	**(1.65)**	**(1.80)**	**(-2.42)**	**(-2.17)**
Non-Executives Ratio	0.083	0.838	-0.021	-0.035	0.002	0.005	-0.008	-0.011
	(0.10)	(0.99)	(-0.97)	(-1.29)	(0.65)	(0.94)	(-0.62)	(-0.92)

	EPS target	Non-market Target	Res(Current Accruals Restatement)		Res(Non-current Accruals Restatement)		Res(Goodwill Restatement)	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Audit Committee	0.003	-0.122	-0.000	0.000	0.000	0.000	-0.001	-0.000
	(0.03)	(-0.92)	(-0.27)	(0.23)	(0.48)	(0.11)	(-1.09)	(-0.52)
Year	0.283	0.047	0.000	-0.001	-0.001	-0.001	0.000	0.001
	(1.40)	(0.22)	(0.06)	(-0.28)	(-1.14)	(-0.82)	(0.07)	(0.41)
Constant	**-1.430****	-0.768	**0.034***	0.021	0.003	0.005	-0.000	-0.006
	(-1.97)	(-0.96)	**(1.80)**	(0.85)	(0.82)	(1.01)	(-0.04)	(-0.56)
Industry Dummies	YES	YES	YES	YES	YES	YES	YES	YES
Observations	226	226	226	226	226	226	226	226

Appendix 3A

Examples of Long Term Incentive Schemes with different types of Vesting Targets

A. EPS target exclusively

Marks and Spencers PLC- Remuneration Report 2005/2006

Long Term Incentive Scheme

For the awards made during this period the targets set are the following

Average Annual EPS Growth in Excess of Inflation (RPI)	% of Award Vesting
5%	20%
12%	100%
Between 5% and 12%	Pro Rata

The scheme has a three-year duration and the compensation committee will decide at the end of this period whether the targets have been achieved and what percentage of the award becomes payable to the CEO.

B. Market Related target exclusively

NEXT PLC-Remuneration Report 2005/2006

Long Term Incentive Plan

Under the plan, performance is measured over periods of three years, which commence annually, by comparing total shareholder return against approximately 20 other UK listed retail companies. If total shareholder return is below the median ranking company there will be no entitlement to any of the award. For median performance the entitlement will be 30% of the maximum award. For performance above the median the entitlement will rise, with the maximum award being earned for performance which places the Company in the upper quartile of the comparator group.

C. Combination of Accounting and Market Related Target

British American Tobacco Group- Remuneration Report 2005

Long Term Incentive Plan

The LTIP provides for awards of free ordinary shares to the Executive Directors and senior employees, provided certain demanding performance conditions are met.

Two performance conditions attach to an award of ordinary shares made under the LTIP. These relate to an apportionment between measures relating to Total Shareholder Return (TSR) and earnings per share based criteria with reference to a three year performance period. Both of these measures are widely accepted and understood benchmarks of a company's performance.

TSR

TSR performance combines both the share price and dividend performance of the Company during the performance period as set against two comparator groups. A total of 50 per cent of the total award is based upon two separate measures (25 per cent for each measure): (1) the constituents of the London Stock Exchange's FTSE 100 Index at the beginning of the performance period; and (2) a peer group of international fast-moving consumer goods (FMCG) 10 British American Tobacco Directors' Report and Accounts 2005 REMUNERATION REPORT continued companies. 25 per cent of the total award vests in full in the event of upper quartile performance by the Company relative to one of the comparator groups, 7.5 per cent of the total award will vest in the event of median performance and then pro rata between these two points. The TSR portions of an LTIP award would not vest for below median performance. These comparator groups, which are reviewed annually to ensure that they remain both relevant and representative, are used to reflect, as far as possible, the Company's financial and business trading environments.

TSR is measured according to the return index calculated by Datastream, on the basis that all companies' dividends are reinvested in the shares of those companies. The return is the percentage increase in each company's index over the three year performance period. The opening and closing indices for this calculation are respectively the average of the index numbers for the last quarter preceding the performance period and for the last quarter of

the final year of that performance period - this methodology is employed to reflect movements of the indices over that time as accurately as possible.

Earnings per share

This measure applies to 50 per cent of the award and relates to earnings per share growth relative to inflation. This element of the award will vest fully if earnings per share growth over the three year performance period is an average of at least 8 per cent per annum in excess of inflation; 10 per cent of this element will vest if the same figure is at least 3 per cent in excess of inflation and an award will vest on a pro rata basis between these two points. The earnings per share (eps) portion of an LTIP award would not vest below these points.

CHAPTER 4

IFRS and the use of Accounting Based Performance Measures

4.1. Introduction

The aim of this chapter is to investigate the effect of the introduction of International Financial Reporting Standards (IFRS) on the use of accounting earnings for evaluating and rewarding managerial performance. Studies of the effects of IFRS adoption so far have mainly focused on the effects of IFRS introduction on the informational properties of earnings for valuation purposes (Barth et al. 2008; Daske et al. 2008). The results of these studies indicate that IFRS is associated with earnings becoming timelier, more volatile and more informative, hence making their introduction beneficial for investors and shareholders.

However, accounting statements are general purpose and are required to fulfill more than one role. Specifically they are required to provide information for stewardship and contracting purposes as well providing information that is value relevant. It is at least logically possible that an increase in value relevance could be achieved at the expense of decreased usefulness for these other purposes. The purpose of this chapter is to examine whether the use of earnings for performance related pay contracts decreases due to the introduction of IFRS in the UK.

We make use of an extensive, mostly hand collected, sample of more than three thousand UK firm observations and eight firm years and show that firms place a lower weight on Earnings-per-Share (EPS) based performance measures in executive pay contracts after the introduction of IFRS.

We explain this phenomenon based on the predictions of optimal contracting theory (Holmstrom 1979; Lambert 2001). Mainly due to the use of "fair value" accounting which

IFRS highly advocate (Cairns 2006; Laux and Leuz 2009), financial statements contain extra value-relevant information, thus making accounting numbers more closely associated with market values. However the move to "fair value" accounting makes accounting earnings figures more volatile and more sensitive to market movements (Barth 2004; Barth et al. 2001). If the increase in earnings volatility is driven by events almost entirely outside the control of management then this reduces the attractiveness of earnings as a basis for performance based contracts, because it results in an increase in the riskiness of managerial compensation unrelated to performance driven outcomes.

According to optimal contracting theory, a performance measure is useful for contracting purposes if it is more informative about the manager's actions, or in other words if it contains a smaller amount of inherent "noise" (Lambert and Larcker 1987). Therefore, a decrease in the use of EPS based figures for evaluating managers' performance implies that this extra information added to accounting figures post IFRS decreases the "signal to noise" of accounting earnings for managers' actions, thus making them less useful for their evaluation.

We need to acknowledge the fact that a decrease in the use of accounting based performance measures could be due to other non-IFRS related reasons, i.e. macroeconomic business cycles and/or changes in firms' executive pay practices. By running a number of tests we try to show that this decrease is partly attributable to the introduction of IFRS and is not only driven by other unidentified confounding effects.

We make several contributions to the literature. First, we take a different perspective to the introduction of IFRS and study their contractual rather than their informational consequences, as the majority of literature does so far. To our knowledge, only one study

has a similar approach to ours and, we believe, with serious methodological issues (Wu and Zhang 2009). Our study indicates that IFRS has resulted in a decrease in the use and relative importance of accounting numbers for managerial performance purposes. Thus it would appear that the increased correlation between accounting numbers and stock market values, which some people interpret as an increase in decision usefulness, was purchased at the expense of decreased usefulness of accounting numbers for other purposes. Second, our study adds to the existing literature on the impact of regulation to executive pay practices. Our results are in accordance with Hall and Murphy (2003) who claim that accounting considerations and regulations are relevant to executive pay related decisions by firms.

We develop our hypotheses in section 2 and discuss our research design in section 3. In section 4 we report our main results. Robustness checks and limitations are in section 5. We conclude in section 6.

4.2. Literature Review and Hypothesis Development

4.2.1. Accounting and Market Based Performance Measures in Executive Compensation Contracts: What determines their use?

Agency theory predicts that the choice of a performance measure in a pay contract depends on how informative it is about the manager's actions (Holmstrom 1979; Lambert 2001). Although the main objective of the shareholders is firm value maximisation, this does not necessarily imply that the exclusive use of market based performance measures to reward managers is an optimal choice. Optimal contracting theory suggests that managers should be rewarded for their actions (i.e. contribution towards the firm's output) and not the actual

output (Lambert 1983). That is mainly because equity returns (as every other performance measure) is partly a function of the manager's actions and partly due to random economic events that are unobservable and out of the manager's control. The inclusion of an accounting based measure for the manager's performance potentially improves risk sharing between managers and shareholders by smoothing out the effects of "noisy" events on managerial rewards (Lambert and Larcker 1987).

 The choice of the relative weight that market and accounting related measures receive in a managerial pay contract depends on the "signal to noise ratio" of each measure in relation to the manager's actions (Sloan 1993). Any decrease in the signal to noise ratio of a measure makes it less useful and thus leads to a decrease of its relative weight in the manager's contract.

Using different methodologies a number of studies empirically test the predictions of optimal contracting theory. Lambert and Larcker (1987) examine the use of stock return and Return on Equity (ROE) as performance measures for managerial cash compensation. Initially they demonstrate the existence of a linear relationship between the two performance measures and executive pay. Interestingly enough, they show that this relationship is stronger for the ROE measure rather than the stock return measure. This does not indicate anything about the optimality of the pay contracts because, as mentioned before, agency theory dictates the reward of managers based on their actions and not the actual output. Consistent with agency theory, they also show that the relative weight that each measure receives is an inverse function of the degree of the inherent "noise" in each measure. Lambert and Larcker (1987) use a number of different measures for the noise, namely the ratio of the times series variance of the stock returns over the variance of ROE; the systematic variance of the firm's times series of stock returns over the systematic

variance of the firm's times series of ROE; and finally the correlation between stock returns and ROEs.

Sloan (1993) mainly focuses on the use of earnings as a measure of managerial performance. He shows that earnings are less sensitive to market wide effects on firm value. Therefore earnings based performance measures are used to "filter out" the noise in the market based ones. Therefore, a decrease of the "signal to noise ratio" in earnings based performance measures makes their use less likely to be used by the firm for performance contracting. Sloan (1993) calculates the noise of each measure not by calculating the actual variance of the measure but rather its conditional variance dependent only on the manager's actions.

Ittner et al. (1997) show that firms place a higher weight on non-financial performance measures as the noise in financial based ones increases. Regulatory, strategic and development related incentives also play an important role in the combination of financial and non-financial performance measures. Moreover, Murphy (2001) shows that firms that make use of externally determined (market based) performance standards are less likely to manage their earnings compared to the ones that use internally determined ones (accounting based).

4.2.2. International Financial Reporting Standards (IFRS): Their effect on Earnings Properties

A large number of studies investigate the financial reporting consequences of the adoption of IFRS. Barth et al. (2008) show that the voluntary adoption of IFRS is associated with less earnings management (i.e. less earnings smoothing), timelier loss recognition and

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higher value relevance for accounting earnings. As metrics for these earnings properties the authors use, among others, variables like the variability of the change in earnings, the ratio of the variability of the change in earnings to the variability of the change in cash flows and the recognition of large losses. Barth et al. (2008) claim that these characteristics suggest that accounting earnings are more informative (for value) and of higher quality after the introduction of IFRS. Hung and Subramanyam (2007) reach similar conclusions about the accounting quality for German voluntary adopters between 1998 and 2002.

The results of similar studies are mixed for mandatory adopters of IFRS. Although Christensen et al (2008) report similar results with Barth et al. (2008) for voluntary German IFRS adopters, they show that this is not the case for firms forced to adopt them which show no signs of accounting quality improvement. Similarly Jeanjean and Stolowy (2008) show no signs of a decrease in earnings management for firms that mandatorily adopted IFRS in Australia, France and the UK.

On the other hand, Horton and Serafeim (2010) study the reconciliations of accounting figures from the local General Accepted Accounting Principles (GAAP) to IFRS in the UK, where the adoption of IFRS was mandatory for all firms after 2005. They show that the market reacts to negative earnings adjustments due to IFRS reconciliations and also that positive (negative) adjustments are value relevant pre and post (only post) IFRS. These results strongly indicate that accounting earnings in the UK become more informative for valuation purposes post IFRS. Christensen et al. (2009) also show market reactions due to IFRS reconciliations and the new information they convey. They further illustrate that these market reactions are more pronounced in firms that face a debt covenant violation from earnings adjustments due to IFRS. They thus adopt a contracting perspective on the introduction of IFRS, something that we also do in our study.

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Also in an approach similar to ours, Wu and Zhang (2009) study the consequences of the voluntary implementation of IFRS from a stewardship perspective. They claim that with earnings being more informative after the introduction of IFRS their role is expected to be more important in the firm's internal performance evaluation. More precisely they show an increase in the sensitivities of CEO turnover and employee layoffs in the post IFRS period for their sample of voluntary adopters from ten European countries. However, Wu and Zhang (2009) do not take into account the fact that, as previously analysed, if earnings are more informative for valuation purposes this is not necessarily the case for stewardship purposes as well. Moreover, due to unavailability of data they do not make use of the terms of the contractual agreements they examine, something that we do in our study. Therefore, they cannot establish whether the change in CEO turnover and employee layoffs sensitivities post IFRS is actually due to a higher emphasis placed on accounting earnings for internal performance evaluations.

4.2.3. Main Hypothesis

The above analysis implies that the majority of the literature so far associates the increase in accounting quality with more informative and more volatile earnings. This makes accounting information timelier and leads to more informed firm valuations. In the case of IFRS particularly this is mainly related with the use of "fair value" accounting, a notion that IFRS highly advocate (Cairns 2006; Laux and Leuz 2009). "Fair value" accounting aims to contribute towards the transparency of financial statements, by bringing them closer to current market conditions. Accounting figures thus become more volatile and dependable on market movements. The supporters of "fair value" accounting claim that it

adds extra value-relevant information to financial statements, thus making them more useful to investors for firm valuation purposes (Barth et al. 2001).

However, the opponents of "fair value" accounting claim that in many cases it is not beneficial for value relevance purposes and it can actually be misleading (Benston 2008). More "informative", i.e. more volatile earnings, can add unnecessary noise to reported earnings which mainly stems from estimation errors and managerial manipulation due to the use of fair value accounting (Ball 2006). This problem can be exacerbated in illiquid markets and when there is not an active market for the asset or liability. Based on our previous analysis we can infer that noisier earnings could potentially reduce the usefulness of accounting earnings for managerial contracting purposes. "Providing more information thus can be worse than providing less, if it is accompanied by more noise"(Ball 2006, p. 14).

The purpose of this chapter is to examine whether the introduction of IFRS has made accounting earnings less useful for evaluating managers' performance and has thus led to a decrease in the use of accounting measures in managerial performance contracts. More specifically, firms are more likely to decrease the weight placed on earnings related performance measures in managerial pay contracts if the introduction of IFRS is associated with a decrease in the "signal to noise" ratio of earnings for the manager's actions. We expect this due to a move to "fair value" accounting, which makes accounting earnings more volatile and potentially less informative about managerial performance. In other words, even if earnings become more informative after the introduction of IFRS for valuation purposes (i.e. less earnings management, timelier loss recognition), a decrease in the use of accounting earnings as a performance measure implies that this extra piece of

information contains a large amount of inherent "noise" that is not related to the manager's performance. More formally the hypothesis we are testing is:

Hypothesis 1: IFRS causes accounting earnings to be less informative about manager's actions and thus their introduction leads to a decrease in the weight that accounting earnings receive as a performance measure in managerial contracts.

4.3. Research design

4.3.1. Model Specification

To test our hypothesis we use a number of specifications and model designs. Initially we run the following rank ordered logit model:

$$EPS\ Performance\ Weight\ (0,1,2)_{it} = b_0 + b_1 IFRS(0,1)_{it} + b_2 OTHER\ CONTROL\ VARIABLES + \varepsilon_{it} \quad (4.1a)$$

where EPS PerformanceWeight is an ordinal dependent variable that takes the value of zero if the firm adopts a market based performance measure; one if a firm uses a combination of an EPS related and market based performance measure; and two if the firm uses an EPS related performance measure exclusively. IFRS takes the value of one for the post IFRS period and zero for the pre IFRS period. We predict that firms decrease the relative weight for accounting based performance measures; therefore we expect a negative coefficient for the main independent variable.

We include a number of additional control variables to guard against the possibility of the decreased use of EPS based performance measures being driven by changes in other factors correlated with the introduction of IFRS.

We expect larger firms to place a higher weight on market based performance measures. Large firms attract higher public and political attention (Watts and Zimmerman 1990). These firms are more likely to make use of performance measures for evaluating and rewarding their managers that are beyond their direct control; they thus make their pay more dependent on market based targets to decrease potential political costs and public outrage. We include as a proxy for firm's size the natural logarithm of the year end market value of equity, which we name SIZE.

Following Skinner (1993) we expect firms with more assets in place to give a higher weight to accounting based measures, since the actions of managers of these firms are more easily monitored through accounting based figures. On the other hand, firms with higher growth opportunities are more likely to place a higher weight on market based measures, since their actions are not yet reflected on accounting figures. To proxy for the firm's assets in place we use the ratio of the year end book value of Property, Plant and Equipment to the Market Value of Equity (PPE to MARKET VALUE) and for the firm's growth opportunities we use the firm's stock market to book value ratio (MTBV) and the ratio of R&D expenditure to net sales, expressed as a percentage (R&D to SALES), as in Skinner (1993). Moreover, we predict firms with higher growth opportunities to have a lower leverage (Smith and Watts 1992) so we expect more levered firms to place a higher weight on market based performance measures too. As a proxy for leverage we include the ratio of the end of year total liabilities to total assets (LEV).

Based on the results of Nagar et al. (2003) we predict firms with a higher number of industry segments to place a higher weight on accounting based performance measures. These firms benefit from a portfolio effect that serves to make their economic earnings smoother. Therefore these firms are more likely to have a lower amount of "noise" in their accounting figures. We include the number of the four digit SIC codes that the firm operates in to proxy for this effect (SEGMENTS).

Following Lambert and Larcker (1987), we include the rate of growth for total assets and sales (ASSETS GROWTH and SALES GROWTH respectively) and we expect a negative relationship with the weight that accounting based performance measures receive. We predict a positive relationship between the use of a "Big Four" auditor and the use of EPS performance measures. Firms that use powerful auditors who impose a higher earnings quality (Francis and Wang 2008) are more likely to use them to evaluate their managers' performance. We thus include a dummy variable that takes the values of 1 if the firm's auditor is any of the PricewaterhouseCoopers, Deloitte and Touche, Ernst and Young, KPMG, Arthur Andersen and zero otherwise (AUD).

We also include a dummy for the use of a compensation consultant by the firm. Studies show that compensation consultants play an important role in the determination of executive pay (Cadman et al. 2010; Voulgaris et al. 2010). Therefore it is reasonable to expect that they have an effect on the choice of managerial performance measures. We thus include a dummy variable that takes the value of one if the firm has retained a compensation consultant and zero otherwise (CONSULT). Literature so far does not provide any evidence on the direction of their effect on the performance measure choice, so we are inconclusive on the sign of the coefficient for this independent variable.

We finally include proxies for the firm's stock return (raw annual stock return, RET) and industry and year dummies (IDUM and YEAR respectively) for which we cannot be sure about the direction of their effect. Moreover, we interact the IFRS dummy with firm characteristics, since we expect that firms with specific features are more likely to decrease the weight of EPS performance measures after the introduction of IFRS.

Thus, the first model to test Hypothesis 1 is the following:

$$
\begin{aligned}
EPS\ Performance\ Weight\ (0,1,2)_{it} = {} & b_0 + b_1 IFRS(0,1)_{it} + b_2 SIZE_{it} + b_3 RET_{it} + b_4 LEV_{it} + b_5 VOL_{it} + \\
& b_6 CONSULT_{it} + b_7\ AUD_{it} + b_8 SEGMENTS_{it} + b_9 PPE\ to\ MARKET \\
& VALUE_{it} + b_{10}\ R\&D\ to\ SALES_{it} + b_{11} MTBV_{it} + b_{12}\ ASSETS \\
& GROWTH_{it} + b_{13}\ SALES\ GROWTH_{it}\ \sum_{i=1}^{8}\ b_{k+14} IDUM_{it} + \\
& \sum_{i=1}^{7} b_{k+22} YEAR + \varepsilon_{it} \qquad\qquad (4.1b)
\end{aligned}
$$

To further test for Hypothesis 1, we also examine whether the sensitivity of the use of earnings based performance targets to the volatilty properties of earnings significantly changes post IFRS. Prior literature uses these properties as metrics for the informational efficiency of accounting earnings (Barth et al. 2008; Christensen et al. 2008; Leuz et al. 2003). If the informational content of earnings increases post IFRS we then expect earnings to become more volatile. Based on our previous analysis and the predictions of optimal contracting theory if the (negative) sensitivity of these metrics of informational efficiency to the choice of accounting based performance measures significantly increases (in absolute values) post IFRS it would be an indication that this additional information causes a decrease to the "signal to noise" ratio for accounting earnings. Therefore they become less useful for evaluating managers and we expect a decrease in the weight they

receive in executive pay contracts. To control for this we make use of the variability of the changes of net income related to the changes in cash flows, a metric of accounting quality and earnings variability used by Barth et al (2008).

We initially run the following equations:

$$DNI_{it} = b_0 + b_1 SIZE{it} + b_2 GROWTH_{it} + b_3 EISUE{it} + b_4 LEV_{it} + b_5 DISSUE_{it}$$
$$+ b_6 TURN_{it} + b_7 CF_{it} + b_8 AUD_{it} + b_9 NUMEX{it} + b_{10} XLIST{it} +$$
$$b_{11}CLOSE + \sum_{i=1}^{8} b_{k+11} IDUM_{it} + \varepsilon_{it,} \qquad (4.2)$$

$$DCF_{it} = b_0 + b_1 SIZE{it} + b_2 GROWTH_{it} + b_3 EISUE{it} + b_4 LEV_{it} + b_5 DISSUE_{it}$$
$$+ b_6 TURN_{it} + b_7 CF_{it} + b_8 AUD_{it} + b_9 NUMEX{it} + b_{10} XLIST{it} +$$
$$b_{11}CLOSE + \sum_{i=1}^{8} b_{k+11} IDUM_{it} + \varepsilon_{it,} \qquad (4.3)$$

where DNI is the change to the firm's net income divided by total Assets; DCF is the change to the firm's cash flows from operating activities divided by total assets; GROWTH is the percentage change in sales; EISSUE is the percentage change in common stock; DISSUE is the percentage change in total liabilities; TURN is sales divided by the end of year total assets; NUMEX is the number of stock exchanges a firm's stock is listed; XLIST is a dummy variable that takes the value of one if the firm is listed on any US stock exchange; CLOSE is the percentage of closely held shares of the firm.

We use the variance of the residuals from equation 4.2 and 4.3 to calculate the ratio of the change of net income over cash flows, DNI*/DCF*. We then use it as an independent variable in the following rank ordered logit model:

$$
\begin{aligned}
\text{EPS Performance} = {} & b_0 + b_1 DNI^*/DCF^*_{it} + b_2 SIZE_{it} + b_3 RET_{it} + b_4 LEV_{it} + b_5 VOL_{it} + \\
\text{Weight} & b_6 CONSULT_{it} + b_7\ AUD_{it} + b_8 SEGMENTS_{it} + b_9 PPE\ to \\
(0,1,2)_{it} & MARKET\ VALUE_{it} + b_{10}\ R\&D\ to\ SALES_{it} + b_{11} MTBV_{it} + b_{12} \\
& ASSETS\ GROWTH_{it} + b_{13}\ SALES\ GROWTH_{it} + \sum_{i=1}^{8} b_{k+14} IDUM_{it} + \\
& \sum_{i=1}^{7} b_{k+22} YEAR + \varepsilon_{it} \qquad\qquad (4.4)
\end{aligned}
$$

If Hypothesis 1 stands, we expect b_1 to increase (in absolute values) post IFRS. We run equation 4.4 for all firms in the sample and then we split between firms before and after IFRS.

4.3.2. Data

We collect data for UK firms from 2002 to 2009. Having 2005 as a base year we collect data for the largest 500 firms of the London Stock Exchange. We collect 3004 observations in total, where 1214 are from the pre IFRS and 1790 from the post IFRS period. We hand collect compensation related data (i.e. performance measures, pay consultant use) from the firms' annual reports. We obtain firms' annual reports from Thomson One Banker. If they are not available there, we visit the firm's website. We use Worldscope and Datastream for the remaining accounting and market data. Following Barth et al. (2008) and Christensen et al. (2008) we winsorise all our non-dummy variables at the 5% level, since accounting variables and variability metrics are very sensitive to outliers.

4.4. Empirical Findings

4.4.1. Descriptive Statistics

4.4.1.1. Performance Measure Choices

Table 4.1 presents descriptive statistics for the choice of the performance measures used by firms. We need to point out that most of this data is hand collected and to our knowledge no previous study has conducted a similar analysis to on this scale. Panel A includes a pooled sample with all observations, while Panel B includes statistics for a constant sample of firms with observations in all years included in the dataset. For all firms in the sample Table 4.1 reports a significant decrease of more than ten percent in the exclusive use of accounting based performance measures both in the pooled and the constant sample after the introduction of IFRS. This is an initial result consistent with Hypothesis 1. On the other hand, firms seem to increase the weight they place on market based measures. There is an increase of more than three percent in the exclusive use of market based measures and an increase of more than fifteen percent in the combined adoption of a market and an accounting based performance measure.

Table 4.1 also contains some interesting results on the variation in the choice of performance measures across industries. We follow Campbell's (1996) industry classification, as this is commonly used in the related literature, e.g. Daske et al (2008). An initial observation is that the results are consistent with the ones for all firms in the sample, since in all industries there is a significant decrease in the weight placed on accounting related performance measures. An interesting result is the very low percentage of petroleum

firms adopting an accounting based performance measure exclusively compared to all other industries, which slightly decreases post IFRS. This is followed by very high percentages of mining firms making sole use of market based performance measure. This could be related to tax issues, since studies have shown that mining firms have higher tax rates and some forms of taxes they are paying are considered as expenses in other countries (Zimmerman 1983). This poses special difficulties in the calculation of earnings figures for managerial evaluation and thus makes their use less likely.

Interestingly, financial firms, which are significantly affected by the introduction of IFRS and the use of "fair value" accounting, seem to be amongst the industries with the highest decrease in the exclusive use of accounting based performance measures. Moreover, there is a decrease in the percentages of firms that do not set any performance measures for their managers in the whole sample and across industries as well. This is an interesting result, since it illustrates a move towards the adoption of long term incentive based compensation and serves as an indication of adoption of stronger governance mechanisms by UK firms over the recent years. Table 4.1 also illustrates a high level of heterogeneity in the choice of performance based measures across industries. Moreover, Table 4.1 shows strong indications that UK firms from every industry decrease the weight that accounting based performance measures receive in executive pay contracts in the post IFRS period towards the adoption of market based performance measures. We next test if this could actually be related to the introduction of IFRS.

Insert Table 4.1 about here

Table 4.2 presents descriptive statistics on the main dependent variables that we use in our analysis, EPS TargetWeight. As previously described, it is a metric for the weight that EPS

based targets receive in an executive pay contract and it is an ordinal dependent variable that takes the value of zero if a firm adopts a market based performance measure; one if a firm makes use of a combination of an EPS related and market based performance measure; and two if a firm uses an EPS related performance measure exclusively. The results of Table 4.2 support the results in Table 4.1. There is a statistically significant negative difference at the 1% level post minus pre IFRS in the EPS TargetWeight mean for all firms in the pooled and constant sample. This negative result is evident in all industries (with the exception of textiles/trade).

For financial firms, the change in our constructed variable is negative and statistically significant at the 5% level. This result is consistent with what we would expect, since this industry has been highly affected by the switch to IFRS and "fair value" accounting. Moreover, there is a significant decrease for firms in the basic industry group at the 5% level. This decrease is driven by chemical and pharmaceutical firms that are part of this group (SIC code 28). Mainly due to IAS 38 these R&D intensive firms are affected by the introduction of IFRS and their earnings are expected to be higher and more volatile (Horton and Serafeim 2010). This increases the "signal to noise" ratio for accounting based performance measures and thus makes them less useful for evaluating managers. Table 4.2 also reports a statistically significant decrease for capital goods industry at the 10% level. The explanation here is again similar. This decrease is driven by R&D intensive firms that construct electronic and computer equipments (SIC Code 35 & 36). Therefore, the effect of IFRS is similar as in chemical and pharmaceutical firms.

We need to point out that we do not include in our analysis firms that do not have any performance measures set for their managers. However, even if we modify the calculation

of our metric and assign firms with no performance measures as zero our results do not change substantially (untabulated results).

Insert Table 4.2 about here

4.4.1.2. Other Variables

Table 4.3 reports descriptive statistics for the variables we use in the multivariate analysis. Panel A refers to all firms in the sample, while in Panels B and C we split between pre and post IFRS respectively. We observe an increase in the size of firms over these two periods while average stock returns are higher pre IFRS, which is more likely related to the recent financial crisis. More firms make use of compensation consultants in the post IFRS period whereas the use of a "Big Four" auditor is almost the same across both periods. No variable shows any signs of high skewness or kurtosis post winsorisation.

Insert Table 4.3 about here

Table 4.4 presents the pairwise correlations between the main variables we use in our models. As in Table 4.3 we also split between pre and post IFRS in panels B and C respectively. In Panel A, the negative and significant correlation between EPS TargetWeight and IFRS is an initial indication of the inverse relation between the introduction of IFRS and the weight that accounting related performance measures receive in the post IFRS period, which is consistent with Hypothesis 1. Consistent with the results from the previous table and more likely due to the recent financial crisis the IFRS dummy and stock returns are negatively correlated, while PPE to Market Value has a negative

correlation with IFRS dummy which is likely related to the wider use of fair value accounting for firm's assets and the financial crisis that led to a decrease in their market value.

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Insert Table 4.4 about here

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4.4.2. Main results

Table 4.5 reports the results of the main rank ordered logit models as described in equation 4.1. Column 1 presents the results of the main model, without any interactions involved, where we observe that the coefficient of the main independent variable, the IFRS dummy, is negative and statistically significant at the 1% level. We need to point out the use of year dummies for each of the firm years included in the sample (2002 to 2009) so the IFRS effect is above and beyond a potential year effect. This result confirms Hypothesis 1 and shows that the decrease in the weight of accounting based measures for UK firms, as indicated in Tables 4.1, 4.2 and 4.4, is related to the introduction of IFRS. As expected, larger and more levered firms and firms with higher growth opportunities are placing a smaller weight on accounting based figures. Another interesting result is that compensation consultants favour the decrease of the weight of accounting based measures towards market based performance measures.

Contrary to the predictions of Lambert and Larcker (1987), firms with a higher assets growth rate place a higher weight on accounting based figures. This could be explained by the fact that high asset growth rates are predictors of strong abnormal stock returns (Cooper et al. 2008). Therefore, this can potentially decrease the "signal to noise" ratio of market based performance measures for a manager's actions and this can make them less preferred

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by firms. Moreover, Table 4.5 shows that firms with more assets in place make more use of market based figures, a result not consistent with the predictions of Skinner (1993). This could be explained by the fact that firms with more assets in place have a lower stock risk (Chung and Charoenwong 1991) and potentially less "noise" in their stock returns.

In the remaining columns of Table 4.5 we use interactive terms for specific firm characteristics and the IFRS indicator variable. Column 3 reports that the interactive term of R&D to SALES is negative and statistically significant at the 1% level, while the significance for the non-interactive term is lost. Similarly, the interactive term for the MTBV is negative and significant at the 10% level. This shows that firms with higher growth opportunities are more likely to decrease the weight on EPS based performance measures in the post IFRS period than in the pre IFRS period. This is consistent with the results of previous studies which show that IFRS have important benefits for the investment efficiency and firms' growth opportunities (Schleicher et al. 2010). Therefore, accounting based measures are less relevant for contracting purposes post IFRS for these firms.

Insert Table 4.5 about here

Although we show that IFRS has a negative effect on the weight placed on accounting based performance measures we need to investigate whether specific earnings properties that the literature shows to change after the introduction of IFRS, make EPS based performance measures less preferred by firms. Table 4.6 shows the results of the model described in equation 4.4, where the main independent variable is the ratio of variability of the change in net income over changes in cash flows as calculated from equations 4.2 and 4.3. As mentioned above, previous studies (Barth et al. 2008) use this variable as a measure for accounting quality.

Column 1 in Table 4.6 shows a negative relationship between the ratio and the weight placed on accounting based figures. From an optimal contracting perspective this indicates that an increase in the variability of net income over cash flows might be a positive result for valuation purposes (indication of more value relevant earnings figures) but this could also decrease the "signal to noise ratio" for accounting earnings to the manager's actions. This would make earnings figures less informative about managerial performance and thus lead to a decrease to the weight they receive in executive pay contracts. We then split the sample in pre and post IFRS firm years in columns 2 and 3 respectively where we observe that the negative effect of the variability ratio is higher in the post IFRS period and that the negative difference is statistically significant at the 5% level. This indicates that the "signal to noise ratio" of accounting earnings is lower in the post IFRS period and the weight that EPS figures receive as a performance measure is lower compared to the one they receive pre IFRS. The results from Table 4.6 thus further confirm Hypothesis 1.

Insert Table 4.6 about here

As we previously describe, the literature so far is inconclusive on the effect that IFRS have on earnings properties for mandatory adopters like UK firms. Showing that accounting quality increases in the UK post IFRS would add to the validity of our previous results. We thus follow the methodology as in Barth et al (2008) and Christensen et al (2008) and calculate metrics for earnings management and timelier loss recognition pre and post IFRS. In Appendix 4A we explain the methodology we follow to calculate each metric.

The results in Table 4.7 show strong indications of less earnings management and timelier loss recognition, which imply that earnings become more informative for valuation

purposes, post IFRS. In particular, there is a statistically significant positive difference at the 1% level in the variability of changes in net income over changes in cash flows and firms are less likely to report small positive earnings post IFRS, both indications of less earnings management (i.e earnings smoothing) after IFRS introduction.

To define the levels of significance for all variability measures, following Barth et al. (2008), we apply a t-test based on the empirical distribution of the differences post minus pre IFRS for each metric. To obtain the distribution we randomly select firm observations with replacement and calculate the difference between the pre-adoption and post-adoption period. The distribution is obtained by running the replacement 1000 times. Moreover, firms are more likely to report large losses post IFRS, a sign for timelier loss recognition. On the other hand we show no strong changes in the correlation between cash flows and accruals and that the variability in net income slightly decreases. However, we believe that our results generally indicate that UK firms report more volatile and timelier accounting earnings post IFRS. These results point towards an increase in accounting quality for valuation purposes post IFRS, but also to an increase in the volatility of earnings

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Insert Table 4.7 about here

4.5. Further Analyses and Robustness Checks

4.5.1. Financial Firms as an Important Special Case

Following the approach of Daske et al. (2008) and Li (2010) we consider financial firms as a treatment sample where we expect that the effect of IFRS on the use of accounting based

performance measures is more pronounced. We then compare it to a group of firms, where we believe the IFRS effect is not so strong, and thus we believe they should respond less to the "treatment". We choose the services sector as a control group, as it does not seem to be an industry seriously affected by IFRS and "fair value" accounting and its sample size is similar to that of financial firms. We first run a difference-in-differences estimation for these two industries. We run this test to minimise the possibility of other unidentified confounding factors, e.g. macroeconomic business cycles, driving our results. We thus run the following model for financial and services industry:

$$EPS\ Performance = b_0 + b_1\ IFRS(0,1)_{it} + b_2\ FINANCE + b_3\ IFRS*\ FINANCE + b_4\ OTHER$$
$$Weight\ (0,1,2)_{it} \qquad CONTROL\ VARIABLES + \varepsilon_{it} \qquad\qquad (4.5)$$

Finance is an indicator variable that takes the value of one when the firm belongs to the financial industry and zero when it is a services firm. The remaining control variables are the ones used in our previous models. The coefficient of interest is b_3. Table 4.8 reports the results of our difference-in-differences estimation. Column 1 shows that the coefficient on the interactive term between the finance and IFRS indicator variable is statistically significant at the 5% level. This is a strong indication that for the "treatment" sample of financial firms the effect of IFRS is, as we would expect, more pronounced compared to the control group (services).

We also run equation (4.1a) for both groups of firms. Table 4.8 reports a more negative and stronger effect of IFRS on the weight of accounting based performance measures for financial firms (column 3) compared to services firms (column 2). Moreover, column 4 shows that this difference is statistically significant at the 1% level. Table 4.8 thus indicates that the effect of IFRS on the structure of executive pay contacts (i.e. use of accounting

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based performance measures) is more pronounced in firms that have been mostly affected by their introduction and the use of fair value accounting.

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Insert Table 4.8 about here

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4.5.2. Further Robustness Checks

In the construction of the main dependent variable, EPS TargetWeight, and in the models we run in Tables 4.5 and 4.6 we exclude firms that do not make use of any performance measures for their managers. Therefore, to avoid any potential sample selection biases we modify EPS TargetWeight and assign firms with no performance measures as zero. However, their inclusion or exclusion does not affect our results (unreported results). Moreover, in Table 4.6, we make use of one metric of accounting quality, DNI*/DCF*, to show the effect of specific earnings properties on the weight choice for EPS performance measures and whether IFRS has an important effect on it. We find this metric as the most accurate, since it involves two measures of profitability, namely net income and cash flows. However, in Appendix 4A we present results of similar models that we run using other measures of accounting quality: The variability of change in net income; the correlation between accruals and cash flows; the recognition of small positive earnings; and the reporting of large losses. The results that we get are, in most cases, consistent with the results in Table 4.6.

We show that firms decrease the weight of EPS performance measures in executive pay contracts post IFRS. This happens despite the fact that accounting quality increases in the UK after the introduction of IFRS. We take an optimal contracting approach to explain these results and we claim that this is due to the fact that although IFRS make earnings

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more informative for valuation purposes, this is not the case for contracting purposes as well. On the contrary, IFRS decreases the "signal to noise ratio" of accounting earnings in relation to manager's actions and this makes them less useful for evaluating managerial performance.

However, it is important to be aware there is also an alternative explanation for our results other than the optimal contracting explanation on which we have focused. It is conceivable that powerful managers may have used their influence to reduce the dependence of their pay on more informative measures like the post-IFRS earnings. This is an explanation consistent with the predictions of managerial power theory, as developed by Bebchuk et al. (2002). Nevertheless, we believe that this is unlikely to happen in a systematic way given the size of our sample that captures a significant percentage of the biggest firms in the UK market. Moreover, the majority of the remaining results are consistent with theoretical predictions and point towards an optimal choice of performance measures. We are still cautious though against inferring any strict causality between the introduction of IFRS and the increase in their inherent "noise" to manager's actions.

A solution to this issue would be to calculate the inherent "noise" of accounting earnings pre and post IFRS. Ittner et al. (1997) use as a proxy for the exogenous noise in firms' financial performing measures the time series variability in median industry accounting returns and more precisely a 5 year standard deviation in median annual Return-on-Assets (ROA) and Return-on-Equity (ROE) based on a three digit SIC classification. We calculate the standard deviations pre and post IFRS so in this case our time series is about 4 years, depending on the IFRS adoption date. We also use a three digit SIC classification to calculate the standard deviations for all firms in the sample; we apply a four digit classification when we move to an industry level, to achieve a higher degree of variation.

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Ittner et al. (1997) assume that the noise in these measures is an increasing function of the variance in the industry's financial performance measures.

Table 4.9 reports the results of these tests. The standard deviation of the median annual ROA and ROE has increased post IFRS and this difference is significant at the 1% level. Based on Ittner et al. (1997) this result indicates that the inherent "noise" in financial performance measures has increased after the introduction of IFRS. This also implies that the "signal to noise" ratio of accounting earnings to the manager's performance decreases post IFRS and they thus become less useful for evaluation purposes. Interestingly, table 4.9 also reports a statistically significant increase in the variation of ROA and ROE in the industries that have significantly decreased the weight of accounting based performance measures for management evaluation (i.e. financial, basic industry, capital goods industries). This is another indication that the inherent noise of accounting earnings has increased primarily for these firms due to IFRS and this has caused their accounting measures become less useful for contracting purposes.

Insert Table 4.9 about here

4.6. Conclusion

In this study we extend the existing literature on the introduction of IFRS by investigating their consequences on the firms' executive pay practices. By making use of an extensive sample of UK firms, we show that firms place a lower weight on EPS based performance measures in management compensation contracts in the post IFRS period. This decrease is also associated with specific earnings properties that previous studies show are affected by the introduction of IFRS. This happens despite the fact that we find strong signs of an

improvement in accounting quality in the UK post IFRS. We adopt an optimal contracting approach to explain our results and claim that although the introduction of IFRS might be beneficial for investors and shareholders, i.e., firm valuation, this might not be the case for contracting purposes. We are very cautious about inferring strict causality in this phenomenon, since there might an alternative "managerial power" based explanation to our results. We are also aware that our results may be driven by other unidentified confounding effects that we are unable to capture in our models. For both problems we run a number of robustness checks to alleviate these concerns and to show that our findings are driven by the introduction of IFRS.

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Tables for Chapter 4

TABLE 4.1
Performance Target Choice Pre and Post IFRS per Industry

The Table presents descriptive statistics on the Performance Target choices in CEO pay contracts per industry and all firms in the sample pre and post IFRS. Columns 1 and 2 include absolute values and percentages of the number of firms that have adapted an accounting related target exclusively; columns 3 and 4 firms that use a market related target only; columns 5 and 6 those ones that use a combination of accounting and market based performance targets; columns 7 and 8 include firms that make no use of a performance target.

Panel A: Pooled Sample

		Accounting Based		Market Based		Both		No targets		Total
		N.Obs	%	N.Obs	%	N.Obs	%	N.Obs	%	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All Firms	**Pre-IFRS**	444	36.57	238	19.60	334	27.51	198	16.31	1214
	Post IFRS	416	23.24	413	23.07	771	43.07	190	10.61	1790
Petroleum	**Pre-IFRS**	3	8.11	20	54.05	7	18.92	7	18.92	37
	Post IFRS	3	4.23	41	57.75	22	30.99	5	7.04	71
Finance/Real estate	**Pre-IFRS**	101	40.40	55	22.00	38	15.20	56	22.40	250
	Post IFRS	94	25.97	78	21.55	125	34.53	65	17.96	362
Consumer Durables	**Pre-IFRS**	58	40.28	25	17.36	40	27.78	21	14.58	144
	Post IFRS	52	24.64	34	16.11	98	46.45	27	12.80	211
Basic Industry	**Pre-IFRS**	27	27.00	32	32.00	22	22.00	19	19.00	100
	Post IFRS	29	17.16	77	45.56	50	29.59	13	7.69	169
Food/tobacco	**Pre-IFRS**	14	19.72	8	11.27	35	49.30	14	19.72	71
	Post IFRS	13	13.54	19	19.79	53	55.21	11	11.46	96
Construction	**Pre-IFRS**	30	42.25	18	25.35	15	21.13	8	11.27	71
	Post IFRS	38	35.85	15	14.15	48	45.28	5	4.72	106
Capital Goods	**Pre-IFRS**	32	37.65	16	18.82	22	25.88	15	17.65	85
	Post IFRS	28	23.93	33	28.21	45	38.46	11	9.40	117
Transportation	**Pre-IFRS**	19	38.78	5	10.20	16	32.65	9	18.37	49
	Post IFRS	15	23.08	10	15.38	38	58.46	2	3.08	65
Utilities	**Pre-IFRS**	10	18.52	20	37.04	21	38.89	3	5.56	54
	Post IFRS	4	4.94	28	34.57	43	53.09	6	7.41	81
Textiles/Trade	**Pre-IFRS**	34	64.15	5	9.43	10	18.87	4	7.55	53
	Post IFRS	25	37.88	5	7.58	29	43.94	7	10.61	66
Services	**Pre-IFRS**	76	39.18	18	9.28	68	35.05	32	16.49	194
	Post IFRS	83	28.14	48	16.27	138	46.78	26	8.81	295
Leisure	**Pre-IFRS**	40	37.74	16	15.09	40	37.74	10	9.43	106
	Post IFRS	32	21.19	25	16.56	82	54.30	12	7.95	151

Panel B: Constant Sample

		Accounting Based		Market Based		Both		No targets		Total
		N.Obs	%	N.Obs	%	N.Obs	%	N.Obs	%	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All Firms	**Pre-IFRS**	271	36.23	154	20.59	203	27.14	120	16.04	748
	Post IFRS	242	24.40	223	22.48	435	43.85	92	9.27	992
Petroleum	**Pre-IFRS**	3	11.11	17	62.96	6	22.22	1	3.70	27
	Post IFRS	2	4.76	24	57.14	16	38.10	0	0.00	42
Finance/Real estate	**Pre-IFRS**	55	39.57	31	22.30	23	16.55	30	21.58	139
	Post IFRS	53	28.96	38	20.77	69	37.70	23	12.57	183
Consumer Durables	**Pre-IFRS**	30	35.71	16	19.05	20	23.81	18	21.43	84
	Post IFRS	25	22.94	14	12.84	53	48.62	17	15.60	109
Basic Industry	**Pre-IFRS**	21	30.43	18	26.09	16	23.19	14	20.29	69
	Post IFRS	17	18.89	33	36.67	33	36.67	7	7.78	90
Food/tobacco	**Pre-IFRS**	11	22.45	5	10.20	21	42.86	12	24.49	49
	Post IFRS	10	16.95	11	18.64	29	49.15	9	15.25	59
Construction	**Pre-IFRS**	25	40.32	14	22.58	15	24.19	8	12.90	62
	Post IFRS	35	39.33	8	8.99	41	46.07	5	5.62	89
Capital Goods	**Pre-IFRS**	21	41.18	10	19.61	8	15.69	12	23.53	51
	Post IFRS	15	21.43	25	35.71	22	31.43	8	11.43	70
Transportation	**Pre-IFRS**	10	32.26	4	12.90	13	41.94	4	12.90	31
	Post IFRS	7	16.28	9	20.93	25	58.14	2	4.65	43
Utilities	**Pre-IFRS**	7	18.92	12	32.43	16	43.24	2	5.41	37
	Post IFRS	0	0.00	17	39.53	22	51.16	4	9.30	43
Textiles/Trade	**Pre-IFRS**	13	61.90	0	0.00	6	28.57	2	9.52	21
	Post IFRS	13	50.00	1	3.85	11	42.31	1	3.85	26
Services	**Pre-IFRS**	44	45.36	11	11.34	33	34.02	9	9.28	97
	Post IFRS	45	33.09	22	16.18	62	45.59	7	5.15	136
Leisure	**Pre-IFRS**	31	38.27	16	19.75	26	32.10	8	9.88	81
	Post IFRS	20	19.61	21	20.59	52	50.98	9	8.82	102

TABLE 4.2
EPS TargetWeight Statistics

The table presents descriptive statistics on the EPS TargetWeight variable per industry and for all firms in the sample pre and post IFRS. EPS TargetWeight takes the value of zero when the firm makes use of a market based performance target; one when the firm uses an EPS target combined with a market related target; two when the firm makes use of an EPS target exclusively. The significance levels for the differences reported are at the 1% (***), 5%(**) and 10% (*) level.

Panel A: Pooled Sample

		EPS TARGET WEIGHT							
		Mean	Difference	Signif.	StD	Median	Skewness	Kurtosis	N.Obs
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
All Firms	**Pre-IFRS**	0.958			0.897	1.000	0.083	1.248	1016
	Post IFRS	0.828	-0.129	***	0.779	1.000	0.309	1.707	1602
Petroleum	**Pre-IFRS**	0.233			0.504	0.000	2.044	6.379	30
	Post IFRS	0.205	-0.028		0.442	0.000	1.962	6.019	67
Finance/Real estate	**Pre-IFRS**	0.859			0.943	0.000	0.387	1.240	194
	Post IFRS	0.722	-0.137	**	0.846	0.000	0.559	1.628	296
Consumer Durables	**Pre-IFRS**	1.065			0.924	1.000	-0.130	1.191	122
	Post IFRS	0.956	-0.109		0.757	1.000	0.071	1.753	188
Basic Industry	**Pre-IFRS**	0.875			0.891	1.000	0.246	1.319	80
	Post IFRS	0.566	-0.309	**	0.753	0.000	0.899	2.331	157
Food/tobacco	**Pre-IFRS**	0.844			0.767	1.000	0.268	1.765	58
	Post IFRS	0.715	-0.129		0.710	1.000	0.465	2.080	87
Construction	**Pre-IFRS**	1.031			0.966	1.000	-0.063	1.090	63
	Post IFRS	1.020	-0.011		0.803	1.000	-0.035	1.564	100
Capital Goods	**Pre-IFRS**	1.142			0.856	1.000	-0.276	1.438	70
	Post IFRS	0.942	-0.200	*	0.769	1.000	0.097	1.708	104
Transportation	**Pre-IFRS**	0.925			0.944	1.000	0.149	1.166	40
	Post IFRS	0.733	-0.192		0.685	1.000	0.388	2.159	60
Utilities	**Pre-IFRS**	0.686			0.761	1.000	0.588	1.974	51
	Post IFRS	0.594	-0.092		0.594	1.000	0.416	2.308	74
Textiles/Trade	**Pre-IFRS**	1.160			0.976	2.000	-0.323	1.148	50
	Post IFRS	1.203	0.043		0.760	1.000	-0.354	1.826	59
Services	**Pre-IFRS**	1.148			0.835	1.000	-0.282	1.496	162
	Post IFRS	1.055	-0.093		0.737	1.000	-0.087	1.849	270
Leisure	**Pre-IFRS**	1.031			0.851	1.000	-0.059	1.395	96
	Post IFRS	0.892	-0.139		0.726	1.000	0.164	1.915	140

Panel B: Constant Sample

		EPS PERFORMANCEMIX							
		Mean	Difference	Signif.	StD	Median	Skewness	Kurtosis	N.Obs
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
All Firms	**Pre-IFRS**	0.944			0.905	1.000	0.110	1.233	607
	Post IFRS	0.821	-0.123	***	0.789	1.000	0.327	1.678	868
Petroleum	**Pre-IFRS**	0.230			0.514	0.000	2.127	6.688	26
	Post IFRS	0.204	-0.026		0.408	0.000	1.464	3.146	44
Finance/Real estate	**Pre-IFRS**	0.675			0.915	0.000	0.683	1.554	108
	Post IFRS	0.581	-0.094	**	0.856	0.000	0.660	1.691	160
Consumer Durables	**Pre-IFRS**	1.046			0.925	1.000	-0.091	1.190	65
	Post IFRS	0.956	-0.090		0.735	1.000	0.066	1.867	93
Basic Industry	**Pre-IFRS**	0.981			0.900	1.000	0.036	1.257	54
	Post IFRS	0.674	-0.307	***	0.782	0.000	0.636	1.926	83
Food/tobacco	**Pre-IFRS**	0.815			0.833	1.000	0.352	1.564	38
	Post IFRS	0.679	-0.136		0.778	0.000	0.620	1.935	53
Construction	**Pre-IFRS**	1.018			0.961	1.000	-0.036	1.103	54
	Post IFRS	1.083	0.065		0.809	1.000	-0.151	1.558	84
Capital Goods	**Pre-IFRS**	1.230			0.872	2.000	-0.461	1.504	39
	Post IFRS	0.819	-0.411	*	0.785	1.000	0.325	1.713	61
Transportation	**Pre-IFRS**	0.888			0.933	1.000	0.221	1.227	27
	Post IFRS	0.615	-0.273		0.633	1.000	0.503	2.353	39
Utilities	**Pre-IFRS**	0.742			0.780	1.000	0.474	1.832	35
	Post IFRS	0.512	-0.230		0.506	1.000	-0.051	1.002	39
Textiles/Trade	**Pre-IFRS**	1.050			0.998	1.500	-0.100	1.062	20
	Post IFRS	1.240	0.190		0.879	2.000	-0.482	1.517	25
Services	**Pre-IFRS**	1.181			0.864	1.000	-0.357	1.444	88
	Post IFRS	1.109	-0.072		0.755	1.000	-0.182	1.782	128
Leisure	**Pre-IFRS**	1.000			0.881	1.000	0.000	1.303	73
	Post IFRS	0.870	-0.130	*	0.725	1.000	0.198	1.930	93

TABLE 4.3
Descriptive Statistics

The table presents descriptive statistics on the basic variables we use in our models. SIZE is the natural logarithm of the year end market value of equity; RET is the raw annual stock return; LEV is the end of year total liabilities to total assets; VOL is the annual standard deviation of daily stock returns; CONSULT takes the value of one if the firm has retained a compensation consultant and zero otherwise; AUD takes the values of 1 if the firm's auditors is any of the PricewaterhouseCoopers, Deloitte and Touche, Ernst and Young, KPMG, Arthur Andersen and zero otherwise; SEGMENTS is the number of the four-digit SIC codes that the firm operates; PPE to MARKET VALUE is the ratio of the year end book value of Property, Plant and Equipment to market value of equity; R&D to SALES is the ratio of R&D expenditure to net sales expresses as a percentage; MTBV is the firm's stock market to book value ratio; ASSETS GROWTH is the percentage change of the firm's total assets during the year; SALES GROWTH is the percentage change of the firm's net sales.

Panel A: All firms

	Mean (1)	Stand.Dev. (2)	Median (3)	Skewness (4)	Kurtosis (5)	Min (6)	Max (7)
SIZE	6.463	1.589	6.329	0.392	2.383	3.840	9.737
RET	10.932	45.182	8.381	0.498	2.984	-65.012	117.479
LEV	22.870	17.458	21.255	0.429	2.197	0.000	58.314
VOL	28.255	13.191	28.693	-0.450	3.114	0.000	52.258
CONSULT	0.792	0.406	1.000	-1.436	3.062	0.000	1.000
AUD	0.951	0.216	1.000	-4.186	18.520	0.000	1.000
SEGMENTS	3.366	2.011	3.000	0.765	2.706	1.000	8.000
PPE to MARKET VALUE	0.458	0.614	0.183	1.773	5.196	0.006	2.287
R&D to SALES	1.488	3.586	0.000	2.670	8.941	0.000	13.902
MTBV	2.718	2.200	2.052	1.417	4.301	0.339	8.765
ASSETS GROWTH	11.069	21.817	7.048	0.968	3.665	-22.355	67.343
SALES GROWTH	11.691	18.483	8.578	0.852	3.581	-18.426	58.681

Panel B: Pre-IFRS

	Mean (1)	Stand.Dev. (2)	Median (3)	Skewness (4)	Kurtosis (5)	Min (6)	Max (7)
SIZE	6.301	1.593	6.071	0.505	2.431	3.840	9.737
RET	16.518	42.657	11.890	0.510	3.178	-65.012	117.479
LEV	22.976	17.153	21.169	0.403	2.179	0.000	58.314
VOL	28.182	14.359	28.541	-0.408	2.747	0.000	52.258
CONSULT	0.720	0.449	1.000	-0.983	1.965	0.000	1.000
AUD	0.950	0.218	1.000	-4.120	17.974	0.000	1.000
SEGMENTS	3.417	2.016	3.000	0.735	2.650	1.000	8.000
PPE to MARKET VALUE	0.505	0.641	0.206	1.582	4.431	0.006	2.287
R&D to SALES	1.461	3.479	0.000	2.686	9.208	0.000	13.902
MTBV	2.618	2.178	1.944	1.580	4.720	0.339	8.765
ASSETS GROWTH	8.342	19.833	4.739	1.315	4.997	-22.355	67.343
SALES GROWTH	9.710	18.414	5.971	1.049	3.983	-18.426	58.681

Panel C: Post-IFRS

	Mean	Stand.Dev.	Median	Skewness	Kurtosis	Min	Max
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
SIZE	6.566	1.576	6.499	0.330	2.389	3.840	9.737
RET	7.364	46.398	5.672	0.538	2.914	-65.012	117.479
LEV	22.789	17.639	21.272	0.444	2.207	0.000	58.314
VOL	28.293	12.389	28.732	-0.483	3.394	0.000	52.258
CONSULT	0.836	0.370	1.000	-1.819	4.310	0.000	1.000
AUD	0.953	0.213	1.000	-4.258	19.129	0.000	1.000
SEGMENTS	3.332	2.005	3.000	0.784	2.745	1.000	8.000
PPE to MARKET VALUE	0.428	0.595	0.166	1.910	5.805	0.006	2.287
R&D to SALES	1.504	3.654	0.000	2.657	8.762	0.000	13.902
MTBV	2.782	2.212	2.164	1.320	4.072	0.339	8.765
ASSETS GROWTH	12.815	22.821	8.841	0.781	3.147	-22.355	67.343
SALES GROWTH	12.914	18.409	10.366	0.745	3.435	-18.426	58.681

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TABLE 4.4

Correlation Matrix
</div>

This table presents the correlations between the main variables that we use in the models. EPS TargetWeight takes the value of zero when the firm makes use of a market based performance target; one when the firm uses an EPS target combined with a market related target; two when the firm makes use of an EPS target exclusively. SIZE is the natural logarithm of the year end market value of equity; RET is the raw annual stock return; LEV is the end of year total liabilities to total assets; VOL is the annual standard deviation of daily stock returns; CONSULT takes the value of one if the firm has retained a compensation consultant and zero otherwise; AUD takes the values of 1 if the firm's auditors is any of the PricewaterhouseCoopers, Deloitte and Touche, Ernst and Young, KPMG, Arthur Andersen and zero otherwise; SEGMENTS is the number of the four-digit SIC codes that the firm operates; PPE to MARKET VALUE is the ratio of the year end book value of Property, Plant and Equipment to market value of equity; R&D to SALES is the ratio of R&D expenditure to net sales expresses as a percentage; MTBV is the firm's stock market to book value ratio; ASSETS GROWTH is the percentage change of the firm's total assets during the year; SALES GROWTH is the percentage change of the firm's net sales. The significance levels reported are at the 1% (***), 5%(**) and 10% (*) level.

Panel A: All firms

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	EPS TARGETWEIGHT	1.000													
2	IFRS	-0.076***	1.000												
3	SIZE	-0.156***	0.081***	1.000											
4	RET	0.001	-0.098***	0.098***	1.000										
5	LEV	-0.078***	-0.005	0.138***	-0.106***	1.000									
6	VOL	0.007	0.004	-0.190***	0.036*	-0.115***	1.000								
7	CONSULT	-0.120***	0.139***	0.212***	-0.046**	0.095***	-0.054***	1.000							
8	AUD	-0.041**	0.006	0.214***	-0.015	0.060***	-0.073***	0.132***	1.000						
9	SEGMENTS	0.000	-0.020	0.235***	-0.002	0.008	0.032*	0.116***	0.097***	1.000					
10	PPE to MARKET VALUE	-0.078***	-0.061**	-0.098***	-0.170***	0.439***	-0.034*	0.031	0.033*	-0.059***	1.000				
11	R&D to SALES	-0.046**	0.005	-0.093***	0.010	-0.216***	0.190***	-0.035	-0.014	-0.086***	-0.205***	1.000			
12	MTBV	0.007	0.036*	0.220***	0.206***	-0.023	-0.105***	-0.022	0.036*	-0.026	-0.317***	0.161***	1.000		
13	ASSETS GROWTH	0.035*	0.099***	0.059**	0.110***	-0.018	-0.101***	-0.047	-0.012	-0.054***	-0.133***	0.015	0.092***	1.000	
14	SALES GROWTH	-0.006	0.084***	0.006	0.081***	-0.020	-0.092***	-0.059	-0.018	-0.082***	-0.090***	0.043**	0.101***	0.519***	1.000

Panel B: Pre-IFRS

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	EPS TARGETWEIGHT	1.000												
2	SIZE	-0.175***	1.000											
3	RET	0.000	-0.032	1.000										
4	LEV	-0.089***	0.215***	-0.063**	1.000									
5	VOL	-0.037	-0.073**	0.076**	-0.103***	1.000								
6	CONSULT	-0.129***	0.276***	-0.041	0.037	-0.033	1.000							
7	AUD	-0.051	0.234***	-0.020	0.065**	-0.047	0.118***	1.000						
8	SEGMENTS	0.016	0.221***	-0.024	0.020	0.075**	0.122***	0.110***	1.000					
9	PPE to MARKET VALUE	-0.074**	-0.053*	-0.098***	0.437***	-0.125***	0.018	0.018	-0.077**	1.000				
10	R&D to SALES	-0.024	-0.120***	0.019	-0.214***	0.267***	-0.042	-0.039	-0.079**	-0.218***	1.000			
11	MTBV	-0.013	0.169***	0.124***	-0.044	-0.000	-0.055*	0.033	-0.041	-0.330***	0.181***	1.000		
12	ASSETS GROWTH	0.025	-0.053*	0.203***	-0.031	-0.138***	-0.098***	-0.012	-0.104***	-0.101***	0.031	0.067**	1.000	
13	SALES GROWTH	-0.016	-0.064**	0.122***	-0.042	-0.145***	-0.073**	-0.048	-0.117***	-0.072**	0.035	0.083***	0.558***	1.000

Panel C: Post-IFRS

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	EPS TARGETWEIGHT	1.000												
2	SIZE	-0.130***	1.000											
3	RET	-0.012	0.189***	1.000										
4	LEV	-0.074**	0.095***	-0.133***	1.000									
5	VOL	0.043*	-0.277***	0.011	-0.127***	1.000								
6	CONSULT	-0.095***	0.149***	-0.027	0.141***	-0.075***	1.000							
7	AUD	-0.030	0.199***	-0.009	0.064**	-0.087***	0.147***	1.000						
8	SEGMENTS	-0.012	0.246***	0.007	0.003	0.003	0.120***	0.088***	1.000					
9	PPE to MARKET VALUE	-0.090***	-0.122***	-0.228***	0.444***	0.039	0.059**	0.042*	-0.050**	1.000				
10	R&D to SALES	-0.062	-0.077***	0.006	-0.219***	0.138***	-0.033	0.002	-0.089***	-0.198***	1.000			
11	MTBV	0.027	0.249***	0.262***	-0.008	-0.182***	-0.007	0.034	-0.016	-0.307***	0.149***	1.000		
12	ASSETS GROWTH	0.056**	0.109***	0.081***	-0.009	-0.079***	-0.040	-0.017	-0.025	-0.146***	0.007	0.101***	1.000	
13	SALES GROWTH	0.010	0.041*	0.070***	-0.009	-0.057**	-0.071***	0.005	-0.058**	-0.094***	0.047*	0.110***	0.495***	1.000

TABLE 4.5
Rank Ordered Logit on the Firm's EPS TargetWeight Choice

The table presents odds ratios for different Rank Ordered Logit Models on the firm's choice of EPS performance mix. EPS TargetWeight takes the value of zero when the firm makes use of a market based performance target; one when the firm uses an EPS target combined with a market related target; two when the firm makes use of an EPS target exclusively. IFRS takes the value of one if the firm has adopted IFRS and zero otherwise; SIZE is the natural logarithm of the year end market value of equity; RET is the raw annual stock return; LEV is the end of year total liabilities to total assets; VOL is the annual standard deviation of daily stock returns; CONSULT takes the value of one if the firm has retained a compensation consultant and zero otherwise; AUD takes the values of 1 if the firm's auditors is any of the PricewaterhouseCoopers, Deloitte and Touche, Ernst and Young, KPMG, Arthur Andersen and zero otherwise; SEGMENTS is the number of the four-digit SIC codes that the firm operates; PPE to MARKET VALUE is the ratio of the year end book value of Property, Plant and Equipment to market value of equity; R&D to SALES is the ratio of R&D expenditure to net sales expresses as a percentage; MTBV is the firm's stock market to book value ratio; ASSETS GROWTH is the percentage change of the firm's total assets during the year; SALES GROWTH is the percentage change of the firm's net sales. The significance levels reported are at athe1% (***), 5%(**) and 10% (*) level. All estimators are robust.

	EPS TARGET WEIGHT					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
IFRS	**-0.630*****	**-0.632*****	**-0.663*****	**-0.632*****	**-0.630*****	**-0.608*****
	(-3.07)	**(-3.05)**	**(-2.72)**	**(-3.05)**	**(-3.07)**	**(-3.22)**
SIZE	**-0.893*****	**-0.893*****	**-0.882*****	**-0.892*****	**-0.893*****	**-0.891*****
	(-3.79)	**(-3.80)**	**(-4.19)**	**(-3.83)**	**(-3.80)**	**(-3.84)**
RET	1.000	1.000	-0.999	1.000	1.000	1.000
	(0.14)	(0.13)	(-0.03)	(0.11)	(0.14)	(0.16)
LEV	**-0.992*****	**-0.992*****	**-0.992*****	**-0.992*****	**-0.992*****	**-0.992*****
	(-2.70)	**(-2.71)**	**(-2.69)**	**(-2.74)**	**(-2.68)**	**(-2.71)**
VOL	-0.997	-0.997	-0.997	-0.997	-0.997	-0.997
	(-0.75)	(-0.74)	(-0.79)	(-0.71)	(-0.77)	(-0.80)
CONSULT	**-0.667*****	**-0.666*****	**-0.664*****	**-0.667*****	**-0.666*****	**-0.668*****
	(-3.57)	**(-3.57)**	**(-3.58)**	**(-3.57)**	**(-3.58)**	**(-3.56)**
AUD	1.106	1.107	1.146	1.105	1.106	1.101
	(0.50)	(0.51)	(0.68)	(0.50)	(0.50)	(0.48)
SEGMENTS	1.013	1.013	1.009	1.014	1.013	1.013
	(0.66)	(0.67	(0.47)	(0.70)	(0.67)	(0.65)
PPE to MARKET VALUE	**-0.786*****	**-0.790*****	**-0.779*****	**-0.790*****	**-0.786*****	**-0.786*****
	(-3.16)	**(-3.00)**	**(-3.26)**	**(-3.09)**	**(-3.16)**	**(-3.16)**
R&D to SALES	**-0.941*****	**-0.941*****	**-0.970****	**-0.941*****	**-0.941*****	**-0.941*****
	(-4.77)	**(-4.77)**	**(-1.99)**	**(-4.80)**	**(-4.76)**	**(-4.76)**
MTBV	1.011	1.011	1.011	1.017	1.011	1.011
	(0.59)	(0.60)	(0.60)	(0.84)	(0.58)	(0.59)
ASSETS GROWTH	**1.007*****	**1.006*****	**1.006*****	**1.007*****	**1.006*****	**1.006*****
	(3.23)	**(3.21)**	**(2.99)**	**(3.23)**	**(3.12)**	**(3.21)**
SALES GROWTH	-0.997	-0.997	-0.997	-0.997	-0.997	-0.005
	(-1.04)	(-1.03)	(-0.96)	(-1.04)	(-1.03)	(-1.24)
PPE to MARKET VALUE*IFRS		-0.996				
		(-0.33)				
R&D to SALES*IFRS			**-0.983*****			
			(-3.17)			
MTBV*IFRS				**-0.998***		
				(-1.87)		
ASSETS GROWTH*IFRS					1.000	
					(0.48)	
SALES GROWTH*IFRS						1.004
						(0.88)

TABLE 4.5 (continued)

	EPS TARGET WEIGHT					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
IDUM	YES	YES	YES	YES	YES	YES
YEAR	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.060	0.060	0.065	0.060	0.060	0.060
Observations	2618	2618	2618	2618	2618	2618

TABLE 4.6
EPS TargetWeight choice and the Variability of Changes in Net Income over Changes in Cash Flows

The table reports odds ratios of a rank ordered logit model as described in equation 4.4. DNI is the change to the firm's Net Income divided by Total Assets and DCF is the change to the firm's Cash Flows from operating activities divided by Total Assets. DNI* and DCF* are the variances of the residuals from the regression described in equation 4.2 and 4.3 respectively. EPS TargetWeight takes the value of zero when the firm makes use of a market based performance target; one when the firm uses an EPS target combined with a market related target; two when the firm makes use of an EPS target exclusively. IFRS takes the value of one if the firm has adopted IFRS and zero otherwise; SIZE is the natural logarithm of the year end market value of equity; RET is the raw annual stock return; LEV is the end of year total liabilities to total assets; VOL is the annual standard deviation of daily stock returns; CONSULT takes the value of one if the firm has retained a compensation consultant and zero otherwise; AUD takes the values of 1 if the firm's auditors is any of the PricewaterhouseCoopers, Deloitte and Touche, Ernst and Young, KPMG, Arthur Andersen and zero otherwise; SEGMENTS is the number of the four-digit SIC codes that the firm operates; PPE to MARKET VALUE is the ratio of the year end book value of Property, Plant and Equipment to market value of equity; ASSETS GROWTH is the percentage change of the firm's total assets during the year. The significance levels reported are at the 1% (***), 5%(**) and 10% (*) level. All estimators are robust.

	EPS TARGET WEIGHT			
	All Firms	Pre IFRS	Post IFRS	Difference
	(1)	(2)	(3)	(4)
DNI*/DCF*	-0.127***	-0.095**	-0.121***	-0.026**
	(-2.89)	(-2.52)	(-5.47)	
SIZE	-0.888***	-0.858***	-0.852***	
	(-3.97)	(-3.08)	(-4.63)	
RET	1.000	1.001	-0.998	
	(0.29)	(0.78)	(-0.85)	
LEV	-0.995*	-0.992*	1.001	
	(-1.81)	(-1.70)	(0.35)	
VOL	-0.998	-0.990*	1.006	
	(-0.38)	(-1.83)	(1.42)	
CONSULT	-0.673***	-0.749*	-0.686**	
	(-3.45)	(-1.81)	(-2.32)	
AUD	-0.980	-0.970	1.077	
	(-0.10)	(-0.09)	(0.27)	
SEGMENTS	1.009	1.032	-0.997	
	(0.48)	(0.98)	(-0.11)	
PPE to MARKET VALUE	-0.810***	-0.760**	-0.756***	
	(-2.74)	(-2.21)	(-2.73)	
R&D to SALES	-0.946***	-0.951**	-0.945***	
	(-4.48)	(-2.20)	(-3.96)	
ASSETS GROWTH	1.007***	1.006	1.007***	
	(3.57)	(1.58)	(2.92)	
SALES GROWTH	-0.995*	-0.992	-0.996	
	(-1.67)	(-1.59)	(-1.18)	
IDUM	YES	YES	YES	
YEAR	YES	YES	YES	
Pseudo R-squared	0.061	0.063	0.060	
Observations	2618	1016	1602	

TABLE 4.7
Earnings Management and Timely Loss Recognition pre-and-post IFRS for UK firms

This table presents the results for firms in the UK, where IFRS were compulsorily adopted in 2005. DNI is the change to the firm's Net Income divided by Total Assets; DCF is the change to the firm's Cash Flows from operating activities divided by Total Assets; CF is the annual Cash Flows from operating activities divided by total assets; ACC is the difference between NI and CF. DNI*, DCF*, ACC* and CF* are the variances of the residuals from equations 4.2, 4.3, 4A.3 and 4A.2 respectively. SPOS is a dummy that takes the value of one if net income scaled by total assets is between 0 and 0.01 and zero otherwise. For timely loss recognition we use LNEG, a dummy variable that takes the value of one when annual net income divided by total assets is less than -0.20 and zero otherwise. The coefficients for SPOS and LNEG are taken from the logistic regressions as described in equations 4A.5 and 4A.7 respectively. The significance levels for the differences reported are at the 1% (***), 5%(**) and 10% (*) level.

| Earnings Management | Observations | | Pre IFRS | Post IFRS | Difference | Expected | Sign. |
	Pre IFRS	Post IFRS	(1)	(2)	(2)-(1)	Sign	Level
Variability of DNI*	1214	1790	0.0052	0.0050	-0.0002	+	*
Variability of DNI* over DCF*	1214	1790	1.1521	1.2308	0.0787	+	***
Correlation between CF* and ACC*	1214	1790	-0.0475	-0.0418	0.0057	-	
Small Positive NI (SPOS)	3004		-0.3851			-	***
Timely Loss Recognition							
Large Negative NI (LNEG)	3004		0.8845			+	***

TABLE 4.8
Rank Ordered Logit on the Firm's EPS TargetWeight Choice (treatment sample)

The table presents odds ratios for different Rank Ordered Logit Models on the firm's choice of EPS performance mix, where we use financial firms as a treatment sample and services firms as a control sample. EPS TargetWeight takes the value of zero when the firm makes use of a market based performance target; one when the firm uses an EPS target combined with a market related target; two when the firm makes use of an EPS target exclusively. IFRS takes the value of one if the firm has adopted IFRS and zero otherwise; FINANCE takes the value of one for financial firms and zero for services firms. SIZE is the natural logarithm of the year end market value of equity; RET is the raw annual stock return; LEV is the end of year total liabilities to total assets; VOL is the annual standard deviation of daily stock returns; CONSULT takes the value of one if the firm has retained a compensation consultant and zero otherwise; AUD takes the values of 1 if the firm's auditors is any of the PricewaterhouseCoopers, Deloitte and Touche, Ernst and Young, KPMG, Arthur Andersen and zero otherwise; SEGMENTS is the number of the four-digit SIC codes that the firm operates; PPE to MARKET VALUE is the ratio of the year end book value of Property, Plant and Equipment to market value of equity; R&D to SALES is the ratio of R&D expenditure to net sales expresses as a percentage; MTBV is the firm's stock market to book value ratio; ASSETS GROWTH is the percentage change of the firm's total assets during the year; SALES GROWTH is the percentage change of the firm's net sales. The significance levels reported are at the 1% (***), 5%(**) and 10% (*) level. All estimators are robust.

| | EPS TARGET WEIGHT | | | |
	DiffInDiff.	SERVICES	FINANCE/R.ESTATE	Difference
	(1)	(2)	(3)	(4)
IFRS	-0.629	-0.385	-0.603***	-0.218**
	(-1.08)	(-1.59)	(-2.87)	
FINANCE	-0.835			
	(-0.92)			
IFRS*FINANCE	-0.632**			
	(-2.42)			
SIZE	-0.823***	-0.927	-0.754***	
	(-3.66)	(-0.91)	(-3.59)	
RET	-0.998	1.000	-0.998	
	(-0.90)	(0.14)	(-0.71)	
LEV	1.003	-0.999	1.005	
	(0.87)	(-0.12)	(0.96)	
VOL	1.005	-0.995	1.007	
	(0.99)	(-0.55)	(0.78)	
CONSULT	-0.691**	-0.980*	-0.590**	
	(-1.98)	(-1.67)	(-2.14)	
AUD	1.190	-0.861	1.382	
	(0.60)	(-0.38)	(0.57)	
SEGMENTS	1.023	-0.987	1.090	
	(0.67)	(-0.27)	(1.39)	
PPE to MARKET VALUE	-0.578***	1.204	-0.508***	
	(-4..38)	(0.87)	(-3.72)	
R&D to SALES	-0.971	-0.995	-0.000	
	(-1.33)	(-0.19)	(-0.91)	
MTBV	1.090**	-0.959	1.506***	
	(2.36)	(-0.92)	(4.61)	
ASSETS GROWTH	1.007**	1.008**	1.000*	
	(2.20)	(1.99)	(1.74)	
SALES GROWTH	-0.995	1.007	-0.989**	
	(-1.11)	(0.07)	(-2.02)	
YEAR	YES	YES	YES	
Pseudo R-squared	0.053	0.045	0.099	
Observations	922	432	490	

TABLE 4.9
Exogenous Noise for Firms' Financial Performance Measures

In this Table we calculate the standard deviations of the Return on Assets (ROA-column 1) and Return on Equity (ROE- column 4) pre and post IFRS for companies in the 3-digit industry classification (for all firms) and in the 4-digit industry classification (for each industry separately). We assume that the exogenous noise in financial performance measures is an en increasing function of the variance in the industry financial performance measures. Columns 7 to 9 are based on the results from Table 4.2. EPS TargetWeight takes the value of zero when the firm makes use of a market based performance target; one when the firm uses an EPS target combined with a market related target; two when the firm makes use of an EPS target exclusively. The significance levels for the differences reported are at the 1% (***), 5%(**) and 10% (*) level.

Industry		st.d.ROA	diff.		st.d. ROE	diff.		EPSTargetWeight	diff.	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All	Pre-IFRS	0.022			0.064			0.958		
	Post-IFRS	0.034	0.012	***	0.100	0.036	***	0.828	-0.129	***
Petroleum	Pre-IFRS	0.011			0.028			0.233		
	Post IFRS	0.027	0.016	***	0.055	0.027	***	0.205	-0.028	
Finance/Real estate	Pre-IFRS	0.009			0.027			0.859		
	Post IFRS	0.038	0.029	***	0.114	0.087	***	0.722	-0.137	**
Consumer Durables	Pre-IFRS	0.030			0.079			1.065		
	Post IFRS	0.033	0.003		0.092	0.013		0.956	-0.109	
Basic Industry	Pre-IFRS	0.024			0.078			0.875		
	Post IFRS	0.041	0.017	***	0.088	0.010	*	0.566	-0.309	***
Food/tobacco	Pre-IFRS	0.027			0.077			0.844		
	Post IFRS	0.044	0.017		0.095	0.018		0.715	-0.129	
Construction	Pre-IFRS	0.025			0.047			1.031		
	Post IFRS	0.031	0.006	*	0.066	0.019	*	1.020	-0.011	
Capital Goods	Pre-IFRS	0.031			0.104			1.142		
	Post IFRS	0.037	0.006	**	0.115	0.011	*	0.942	-0.200	*
Transportation	Pre-IFRS	0.017			0.057			0.925		
	Post IFRS	0.023	0.006		0.083	0.026		0.733	-0.192	
Utilities	Pre-IFRS	0.031			0.111			0.686		
	Post IFRS	0.035	0.004		0.133	0.022		0.594	-0.092	
Textiles/Trade	Pre-IFRS	0.031			0.079			1.160		
	Post IFRS	0.030	-0.001		0.084	0.005		1.203	0.043	

TABLE 4.9 (continued)

Industry		st.d.ROA	diff.		st.d. ROE	diff.		EPSTargetWeight	diff.	
		(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Services	**Pre-IFRS**	0.023			0.062			1.148		
	Post IFRS	0.025	0.002		0.076	0.014		1.055	-0.093	
Leisure	**Pre-IFRS**	0.027			0.066			1.031		
	Post IFRS	0.031	0.004		0.104	0.038	*	0.892	-0.139	

Appendix 4A

Description of variables

We follow Barth et al. (2008) to calculate different metrics for accounting quality related to income smoothing and earnings variability. To do this we firstly use the variability of the changes in net income and the correlation between accruals and cash flows. We run the following equations:

$$DNI_{it} = b_0 + b_1 SIZEit + b_2 GROWTH_{it} + b_3 EISUEit + b_4 LEV_{it} + b_5 DISSUE_{it} + b_6$$
$$TURN_{it} + b_7 CF_{it} + b_8 AUD_{it} + b_9 NUMEXit + b_{10} XLISTit + b_{11} CLOSE + \sum_{i=1}^{8}$$
$$b_{k+11} IDUM_{it} + \varepsilon_{it,} \qquad (4A.1)$$

$$CF_{it} = b_0 + b_1 SIZEit + b_2 GROWTH_{it} + b_3 EISUEit + b_4 LEV_{it} + b_5 DISSUE_{it} + b_6$$
$$TURN_{it} + b_8 AUD_{it} + b_9 NUMEXit + b_{10} XLISTit + b_{11} CLOSE + \sum_{i=1}^{8} b_{k+11}$$
$$IDUM_{it} + \varepsilon_{it,} \qquad (4A.2)$$

$$ACC_{it} = b_0 + b_1 SIZEit + b_2 GROWTH_{it} + b_3 EISUEit + b_4 LEV_{it} + b_5 DISSUE_{it} + b_6$$
$$TURN_{it} + b_8 AUD_{it} + b_9 NUMEXit + b_{10} XLISTit + b_{11} CLOSE + \sum_{i=1}^{8} b_{k+11}$$
$$IDUM_{it} + \varepsilon_{it,} \qquad (4A.3)$$

where DNI is the change to the firm's net income divided by total assets; CF is the annual cash flows from operating activities divided by total assets; ACC is the difference between NI and CF; GROWTH is the percentage change in sales; EISSUE is the percentage change in common stock; DISSUE is the percentage change in total liabilities; TURN is sales divided by the end of year total assets; NUMEX is the number of stock exchanges on which a firm's stock is listed; XLIST is a dummy variable that takes the value of one if the firm is listed on any US stock exchange; CLOSE is the percentage of closely held shares of the firm.

We calculate two different earnings management metrics: We use the variance of the residuals from equation 4A.1, DNI*; and the correlations of the residuals from equations 4A.2 and 4A.3, CORREL (ACC*; CF*). We then use each one of them as a dependent variable in the following rank ordered logit model:

$$
\begin{aligned}
\text{EPS Performance Weight } (0,1,2)_{it} = {} & b_0 + b_1 EARN.MNGMT_{it} + b_2 SIZE_{it} + b_3 RET_{it} + b_4 LEV_{it} + b_5 VOL_{it} \\
& + b_6 CONSULT_{it} + b_7 AUD_{it} + b_8 SEGMENTS_{it} + b_9 PPE\ to\ MARKET\ VALUE_{it} + b_{10}\ R\&D\ to\ SALES_{it} + b_{11} MTBV_{it} + b_{12}\ ASSETS\ GROWTH_{it} + b_{13}\ SALES\ GROWTH_{it} + \sum_{i=1}^{8} b_{k+14} IDUM_{it} + \\
& \sum_{i=1}^{7} b_{k+22} YEAR + \varepsilon_{it} \qquad\qquad (4A.4)
\end{aligned}
$$

Based on the predictions of optimal contracting theory, if we find that the variability of the net income metric is negatively correlated with the weight EPS based performance measures receive, then this would indicate that an increased variability in earnings entails an increase to the "signal-to-noise" ratio. If this negative correlation increases post IFRS and earnings have become more informative for valuation purposes (i.e. more volatile), this would imply that this extra piece of information due to the introduction of IFRS decreases the "signal to noise" of earnings for managerial performance. The results predicted are in the opposite direction for the correlations between accruals and cash flows.

We also adopt an earnings quality metric from Barth et al (2008) related to managing towards positive earnings. In particular, we construct a dummy variable for small positive net income, SPOS, which is equal to one if net income scaled by total assets is between 0 and 0.01 and zero otherwise. According to Barth et al. (2008) the observation of a smaller number of small positive earnings is a sign of higher earnings quality and hence there should be a negative relationship between SPOS and IFRS, if firms manage less towards

positive earnings after their introduction. To control whether this is the case for UK firms we run the following logit model where we expect a negative coefficient for SPOS:

$$
\begin{aligned}
IFRS(0,1)_{it} \quad = \quad & b_0 + b_1 SPOS_{it} + b_1 SIZE_{it} + b_2 GROWTH_{it} + b_3 EISUE_{it} + b_4 LEV_{it} + \\
& b_5 DISSUE_{it} + b_6 TURN_{it} + b_7 CF_{it} + b_8 AUD_{it} + b9 NUMEX_{it} \\
& +_{10}XLIST_{it} + b_{11}CLOSE + \sum_{i=1}^{8} b_{k+11} IDUM_{it} + \varepsilon_{it,} \qquad (4A.5)
\end{aligned}
$$

We then run the following rank ordered logit model for all firms in the sample and also after splitting between non-IFRS and IFRS firms:

$$
\begin{aligned}
EPS \\
Performance \quad = \quad & b_0 + b_1 SPOS_{it} + b_2 SIZE_{it} + b_3 RET_{it} + b_4 LEV_{it} + b_5 VOL_{it} + \\
Weight \quad & b_6 CONSULT_{it} + b_7 AUD_{it} + b_8 SEGMENTS_{it} + b_9 PPE \ to \ MARKET \\
(0.1.2)_{it} \quad & VALUE_{it} + b_{10} R\&D \ to \ SALES_{it} + b_{11}MTBV_{it} + b_{12} ASSETS \ GROWTH_{it} \\
& + b_{13} \ SALES \ GROWTH_{it} + \sum_{i=1}^{8} b_{k+14}IDUM_{it} + \sum_{i=1}^{7} b_{k+22}YEAR + \varepsilon_{it,} \\
& (4A.6)
\end{aligned}
$$

From an optimal contracting perspective, a positive coefficient for SPOS would indicate that the recognition of large positive or large negative earnings makes accounting earnings more volatile and most likely a noisier performance measure for managerial performance. Therefore, firms with smoother and most likely less "noisy" accounting earnings are expected to increase the weight of an EPS related target in their managerial contracts. If Hypothesis 1 stands, we would expect a higher positive coefficient for firms in the post IFRS period.

We finally use a metric for timely loss recognition as in Barth et al. (2008). We create a dummy variable, LNEG, which takes the value of one when annual net income divided by total assets is less than -0.20 and zero otherwise. After the introduction of IFRS firms are more likely to recognise higher losses and hence there is a positive relationship between

IFRS and LNEG. To control whether this is also the case for UK firms we run the following equation where we expect to find a positive coefficient for LNEG:

$$IFRS(0,1)_{it} = b_0 + b_1LNEG_{it} + b_1\,SIZE_{it} + b_2\,GROWTH_{it} + b_3\,EISUE_{it} + b_4\,LEV_{it}$$
$$+ b_5\,DISSUE_{it} + b_6\,TURN_{it} + b_7\,CF_{it} + b_8\,AUD_{it} + b9\,NUMEX_{it}$$
$$+_{10}XLIST_{it} + b_{11}CLOSE + \sum_{i=1}^{8} b_{k+11}\,IDUM_{it} + \varepsilon_{it,} \qquad (4A.7)$$

We then run the following rank ordered logit model for all firms in the sample and also after splitting between non-IFRS and IFRS firms:

$$EPS\ Performance\ Weight\ (0,1,2)_{it} = b_0 + b_1LNEG_{it} + b_2SIZE_{it} + b_3RET_{it} + b_4LEV_{it} + b_5VOL_{it} + b_6CONSULT_{it} + b_7\,AUD_{it} + b_8SEGMENTS_{it} + b_9PPE\ to\ MARKET\ VALUE_{it} + b_{10}\,R\&D\ to\ SALES_{it} + b_{11}MTBV_{it} + b_{12}\ ASSETS\ GROWTH_{it} + b_{13}\ SALES\ GROWTH_{it\,+} \sum_{i=1}^{8} b_{k+14}IDUM_{it}$$
$$+ \sum_{i=1}^{7} b_{k+22}YEAR + \varepsilon_{it} \qquad (4A.8)$$

From an optimal contracting perspective, a negative coefficient for LNEG would indicate that the recognition of large negative earnings makes accounting earnings more volatile and most likely a noisier performance measure for managerial performance. Therefore, firms with smoother and most likely less "noisy" accounting earnings are expected to increase the weight of an EPS related target in their managerial contracts. If Hypothesis 1 stands, we would expect a more negative coefficient for firms in the post IFRS period.

Results

Table 4A.1 presents the results of the model described in equation 4A.4 for the variability of change in Net Income. The table reports a direction in the results which are consistent with our expectations and similar to the results we had from Table 4.6 in the main part of this chapter. The coefficient for DNI* is negative and statistically significant at the 1%

level for all firms. From an optimal contracting perspective this implies that more volatile net income might be better for valuation purposes but the increased volatility makes earnings based performance measures less useful for contracting purposes because this extra information contains more "noise". Columns 2 and 3 indicate a small decrease in the coefficient and the difference between post and pre IFRS is statistically significant at the 10% level. This is consistent with the results from Table 4.7 in the main part of the chapter, which reports a very small change in the variability of net income post IFRS. The remaining results in the table are consistent with the results in Table 4.6 of the chapter.

Insert Table 4A.1 about here

Table 4A.2 presents the results of the model described in equation 4A.4 for the correlation of the residuals between accruals and cash flows. Although statistically significant, the economic significance of the coefficient for all firms is very small and it does not provide any ground for safe conclusions. Moreover, there is not a statistically significant difference pre and post IFRS, something which is consistent with the results from Table 4.7 of the main part of the chapter.

Insert Table 4A.2 about here

Tables 4A.3 and 4A.4 present results from the models described in equations 4A.6 and 4A.8 respectively. Column 1 from Table 4A.4 shows that firms that report big losses and thus have more volatile earnings place a higher weight on market based measures rather than on accounting based ones. From an optimal contracting perspective these results imply that smoother earnings are less volatile and more likely to contain a smaller amount of inherent "noise" with respect to managerial performance.

The results in columns 2 and 3 of Table 4A.3 report results for the pre and post IFRS period respectively. Pre IFRS the existence of smoother earnings does not seem to affect the weight choice for accounting based figures. Interestingly, this result changes completely post IFRS where the coefficient becomes positive and statistically significant at the 1% level. This implies, combined with the results from Table 4.7 from the main part of this chapter, that firms are more likely to report more volatile earnings post IFRS but the ones with "smoother" earnings have a higher probability of placing a higher weight on accounting based performance measures. From an optimal contracting point of view, this indicates that firms report more volatile earnings due to IFRS but these earnings become a "noisier" measure of the manager's actions. In Table 4A.4, we do not manage to show any strong difference pre and post IFRS concerning the effect of the existence of large losses on the weight of EPS related performance measures in executive pay contracts.

Insert Table 4A.3 about here

Insert Table 4A.4 about here

Tables for Appendix 4A

TABLE 4A.1
EPS TargetWeight choice and the Variability of Changes in Net Income

The table reports odds ratios of a rank ordered logit model as described in equation 4A.4. DNI is the change to the firm's Net Income divided by Total Assets and DNI* is the variance of the residuals from the regression described in equation 4A.2. EPS TargetWeight takes the value of zero when the firm makes use of a market based performance target; one when the firm uses an EPS target combined with a market related target; two when the firm makes use of an EPS target exclusively. IFRS takes the value of one if the firm has adopted IFRS and zero otherwise; SIZE is the natural logarithm of the year end market value of equity; RET is the raw annual stock return; LEV is the end of year total liabilities to total assets; VOL is the annual standard deviation of daily stock returns; CONSULT takes the value of one if the firm has retained a compensation consultant and zero otherwise; AUD takes the values of 1 if the firm's auditors is any of the PricewaterhouseCoopers, Deloitte and Touche, Ernst and Young, KPMG, Arthur Andersen and zero otherwise; SEGMENTS is the number of the four-digit SIC codes that the firm operates; PPE to MARKET VALUE is the ratio of the year end book value of Property, Plant and Equipment to market value of equity; ASSETS GROWTH is the percentage change of the firm's total assets during the year. The significance levels reported are at the 1% (***), 5%(**) and 10% (*) level. All estimators are robust.

| | EPS TARGET WEIGHT | | | |
| | All Firms | Pre IFRS | Post IFRS | Difference |
	(1)	(2)	(3)	(4)
DNI*	-0.921***	-0.942**	-0.946***	-0.004*
	(-3.68)	(-2.01)	(-2.62)	
SIZE	-0.831***	-0.831***	-0.843***	
	(-6.97)	(-4.30)	(-4.93)	
RET	-0.999	1.000	-0.998	
	(-0.15)	(0.57)	(-1.01)	
LEV	-0.997	-0.995	-0.997	
	(-1.15)	(-0.95)	(-0.91)	
VOL	-0.997	-0.991*	1.003	
	(-0.80)	(-1.86)	(0.82)	
CONSULT	-0.701***	-0.731**	-0.694**	
	(-3.18)	(-2.03)	(-2.26)	
AUD	-0.884	-0.779	1.016	
	(-0.60)	(-0.81)	(0.06)	
SEGMENTS	1.039**	1.053*	1.028	
	(2.01)	(1.67)	(1.10)	
PPE to MARKET VALUE	-0.738***	-0.752**	-0.711***	
	(-3.94)	(-2.40)	(-3.36)	
R&D to SALES	-0.957***	-0.972	-0.947***	
	(-3.85)	(-1.42)	(-3.79)	
ASSETS GROWTH	1.006***	1.004	1.007***	
	(2.73)	(1.03)	(2.68)	
SALES GROWTH	-0.996	-0.994	-0.997	
	(-1.34)	(-1.18)	(-0.77)	
IDUM	YES	YES	YES	
YEAR	YES	YES	YES	
Pseudo R-squared	0.046	0.041	0.033	
Observations	2618	1016	1602	

TABLE 4A.2
EPS TargetWeight choice and the Correlation between Accruals and Cash Flows

The table reports odds ratios of a rank ordered logit model as described in equation 4A.4. NI is the annual Net Income divided by Total Assets, CF is the annual Cash Flows from operating activities divided by total assets and ACC is the difference between NI and CF; CF* and ACC* are the variances of the residuals from the regression described in equation 4A.2 and 4A.3 respectively. EPS TargetWeight takes the value of zero when the firm makes use of a market based performance target; one when the firm uses an EPS target combined with a market related target; two when the firm makes use of an EPS target exclusively. IFRS takes the value of one if the firm has adopted IFRS and zero otherwise; SIZE is the natural logarithm of the year end market value of equity; RET is the raw annual stock return; LEV is the end of year total liabilities to total assets; VOL is the annual standard deviation of daily stock returns; CONSULT takes the value of one if the firm has retained a compensation consultant and zero otherwise; AUD takes the values of 1 if the firm's auditors is any of the PricewaterhouseCoopers, Deloitte and Touche, Ernst and Young, KPMG, Arthur Andersen and zero otherwise; SEGMENTS is the number of the four-digit SIC codes that the firm operates; PPE to MARKET VALUE is the ratio of the year end book value of Property, Plant and Equipment to market value of equity; ASSETS GROWTH is the percentage change of the firm's total assets during the year. The significance levels reported are at the 1% (***), 5%(**) and 10% (*) level. All estimators are robust.

| | EPS TARGET WEIGHT | | | |
| | All Firms | Pre IFRS | Post IFRS | Difference |
	(1)	(2)	(3)	(4)
ACC*&CF* Correlation	-0.000***	-0.000**	-0.000***	-0.000
	(-5.56)	(-3.34)	(-3.12)	
SIZE	1.096*	-0.982	1.095	
	(1.92)	(-0.29)	(1.33)	
RET	1.000	1.001	-0.999	
	(0.28)	(0.75)	(-0.68)	
LEV	-0.986***	-0.984***	-0.990***	
	(-4.63)	(-3.03)	(-2.81)	
VOL	-0.998	-0.991	1.005	
	(-0.57)	(-1.63)	(1.28)	
CONSULT	-0.665***	-0.761*	-0.613***	
	(-3.58)	(-1.72)	(-2.93)	
AUD	-0.736	-0.683	-0.967	
	(-1.47)	(-1.18)	(-0.12)	
SEGMENTS	1.001	1.020	-0.988	
	(0.10)	(0.61)	(-0.46)	
PPE to MARKET VALUE	-0.818***	-0.812*	-0.786***	
	(-2.60)	(-1.65)	(-2.40)	
R&D to SALES	-0.960***	-0.965	-0.948***	
	(-3.13)	(-1.56)	(-3.31)	
ASSETS GROWTH	1.008***	1.011**	1.007***	
	(3.78)	(2.40)	(2.83)	
SALES GROWTH	1.007**	1.006	1.002	
	(2.32)	(1.11)	(0.64)	
IDUM	YES	YES	YES	
YEAR	YES	YES	YES	
Pseudo R-squared	0.065	0.065	0.069	
Observations	2618	1016	1602	

TABLE 4A.3
EPS TargetWeight choice and Managing towards Small Positive Earnings

The table reports odds ratios of a rank ordered logit model as described in equation 4A.6. SPOS is a dummy that takes the value of one if net income scaled by total assets is between 0 and 0.01 and zero otherwise EPS TargetWeight takes the value of zero when the firm makes use of a market based performance target; one when the firm uses an EPS target combined with a market related target; two when the firm makes use of an EPS target exclusively. IFRS takes the value of one if the firm has adopted IFRS and zero otherwise; SIZE is the natural logarithm of the year end market value of equity; RET is the raw annual stock return; LEV is the end of year total liabilities to total assets; VOL is the annual standard deviation of daily stock returns;CONSULT takes the value of one if the firm has retained a compensation consultant and zero otherwise; AUD takes the values of 1 if the firm's auditors is any of the PricewaterhouseCoopers, Deloitte and Touche, Ernst and Young, KPMG, Arthur Andersen and zero otherwise; SEGMENTS is the number of the four-digit SIC codes that the firm operates; PPE to MARKET VALUE is the ratio of the year end book value of Property, Plant and Equipment to market value of equity; ASSETS GROWTH is the percentage change of the firm's total assets during the year. The significance levels reported are at the 1% (***), 5%(**) and 10% (*) level. All estimators are robust.

| | EPS TARGET WEIGHT | | | |
| | All Firms | Pre IFRS | Post IFRS | Difference |
	(1)	(2)	(3)	(4)
SPOS	1.161	-0.923	**1.407***	**2.330***
	(1.48)	(-0.50)	**(2.54)**	
SIZE	**-0.891***	**-0.867***	**-0.921**	
	(-3.86)	**(-2.89)**	**(-2.10)**	
RET	1.000	1.001	-0.998	
	(0.24)	(0.94)	(-0.82)	
LEV	**-0.994**	-0.993	-0.994	
	(-2.20)	(-1.54)	(-1.63)	
VOL	-0.998	**-0.990**	1.007	
	(-0.55)	**(-1.98)**	(1.56)	
CONSULT	**-0.666***	**-0.750***	**-0.631***	
	(-3.56)	**(-1.81)**	**(-2.77)**	
AUD	1.053	-0.972	1.166	
	(0.26)	(-0.09)	(0.55)	
SEGMENTS	1.003	1.028	-0.980	
	(0.15)	(0.85)	(-0.76)	
PPE to MARKET VALUE	**-0.783***	**-0.761**	**-0.746***	
	(-3.18)	**(-2.20)**	**(-2.79)**	
R&D to SALES	**-0.932***	**-0.941***	**-0.939***	
	(-5.70)	**(-2.74)**	**(-4.30)**	
ASSETS GROWTH	**1.006***	1.005	**1.005**	
	(2.73)	(1.29)	**(2.09)**	
SALES GROWTH	-0.997	-0.995	-0.996	
	(-1.03)	(-1.05)	(-0.97)	
IDUM	YES	YES	YES	
YEAR	YES	YES	YES	
Pseudo R-squared	0.058	0.059	0.042	
Observations	2618	1016	1602	

TABLE 4A.4
EPS Performance Mix choice and Timely Loss Recognition

The table reports odds ratios of a rank ordered logit model as described in equation 4A.8. SPOS is a dummy that takes the value of one if net income scaled by total assets is between 0 and 0.01 and zero otherwise EPS TargetWeight takes the value of zero when the firm makes use of a market based performance target; one when the firm uses an EPS target combined with a market related target; two when the firm makes use of an EPS target exclusively. IFRS takes the value of one if the firm has adopted IFRS and zero otherwise; SIZE is the natural logarithm of the year end market value of equity; RET is the raw annual stock return; LEV is the end of year total liabilities to total assets; VOL is the annual standard deviation of daily stock returns; CONSULT takes the value of one if the firm has retained a compensation consultant and zero otherwise; AUD takes the values of 1 if the firm's auditors is any of the PricewaterhouseCoopers, Deloitte and Touche, Ernst and Young, KPMG, Arthur Andersen and zero otherwise; SEGMENTS is the number of the four-digit SIC codes that the firm operates; PPE to MARKET VALUE is the ratio of the year end book value of Property, Plant and Equipment to market value of equity; ASSETS GROWTH is the percentage change of the firm's total assets during the year. The significance levels reported are at the 1% (***), 5%(**) and 10% (*) level. All estimators are robust.

| | EPS TARGET WEIGHT | | | |
| | All Firms | Pre IFRS | Post IFRS | Difference |
	(1)	**(2)**	**(3)**	**(4)**
LNEG	**-0.643***	-0.403	-0.742	-0.339
	(-1.75)	(-1.62)	(-1.02)	
SIZE	**-0.892***	**-0.855***	**-0.931***	
	(-3.84)	**(-3.15)**	**(-1.85)**	
RET	-0.999	1.001	-0.998	
	(-0.01)	(0.71)	(-1.04)	
LEV	**-0.994**	-0.993	-0.995	
	(-2.02)	(-1.70)	(-1.46)	
VOL	-0.998	**-0.991***	1.007	
	(-0.44)	**(-1.82)**	(1.52)	
CONSULT	**-0.663***	**-0.749***	**-0.617***	
	(-3.60)	**(-1.80)**	**(-2.91)**	
AUD	1.037	-0.954	1.175	
	(0.18)	(-0.15)	(0.58)	
SEGMENTS	1.004	1.025	-0.984	
	(0.22)	(0.79)	(-0.61)	
PPE to MARKET VALUE	**-0.781***	**-0.748***	**-0.767***	
	(-3.21)	**(-2.32)**	**(-2.65)**	
R&D to SALES	**-0.932***	**-0.944***	**-0.924***	
	(-5.70)	**(-2.60)**	**(-5.18)**	
ASSETS GROWTH	**1.005***	1.004	**1.006***	
	(2.67)	(1.11)	**(2.61)**	
SALES GROWTH	-0.997	-0.994	-0.998	
	(-1.09)	(-1.12)	(-0.57)	
IDUM	YES	YES	YES	
YEAR	YES	YES	YES	
Pseudo R-squared	0.058	0.060	0.062	
Observations	2618	1016	1602	

Chapter 5

Summary and suggestions for future research

5.1. Summary

In this thesis I examine the interrelation between executive pay practices in the UK and two external, to the principal-agent relationship, influences: pay consultants (chapter 2) and the introduction of International Financial Reporting Standards (IFRS) (chapters 3 and 4).

Chapter 2 examines the role of pay consultants in UK CEO pay practices. The results of the chapter illustrate that their role is not consistent with the predictions of the managerial power theory. More specifically, pay consultants do not try to help managers towards the expropriation of shareholders' wealth; on the contrary I show strong indications that pay consultants urge firms towards the adoption of more incentive based CEO compensation. Moreover, I report that economic characteristics (e.g. firm size, complexity of the contract) rather than CEO power explain the firm's choice to hire a compensation consultant. These results are robust to selection bias controls. The results of chapter 2 indicate that pay consultants play a less "sinister" role than what the managerial power theory suggests and that their advice and expertise can assist firms design an optimal executive pay contract.

Chapter 3 examines the existence of managerial opportunism at the switch from UK GAAP to IFRS. In this chapter, I show strong indications that the restatements from UK GAAP to IFRS have not been manipulated by managers. I examine the existence of such behaviour under different specifications and for different types of CEOs that one would expect to engage in such opportunistic behaviour to maximise the expected personal wealth. The research design that I adopt makes the results of this chapter less prone to methodological issues common in studies in this area. Positive Accounting Theory literature has established that managerial opportunism seriously affects accounting choice.

The results of this chapter imply that with respect to IFRS restatements, where managers had strong incentives to manage future earnings, I find no signs of manipulation. This chapter thus puts into question the Positive Accounting Theory Paradigm.

Chapter 4 examines the effect of IFRS on the use of performance measures for evaluating and rewarding managers. The results illustrate that firms make less use of accounting based performance measures due to the introduction of IFRS. I explain these results based on the predictions of optimal contacting theory. I claim that IFRS adds unnecessary "noise" to accounting numbers not relevant to the managers' actions. This is mainly due to the adoption of "fair value" accounting, which makes accounting earnings more value relevant and useful for firm valuation purposes; however, "fair value" accounting also makes accounting numbers more volatile and sensitive to market movements. If this increase in volatility is related to events outside the managers' control, this makes the use of accounting based performance measures less useful for evaluating and rewarding managers. The results of the chapter imply that IFRS might have made accounting earnings more useful for stock market purposes, e.g. firm valuation, but this has happened at the expense of other purposes that accounting serves, e.g. contracting.

5.2. Suggestions for future research

Chapter 2 of this thesis focuses on the role of pay consultants in executive pay practices. I believe that this is a topic of great interest and there is great scope for further research. Literature so far, including chapter 2, mainly studies the role of pay consultants in the "Anglo-Saxon" world; it would be very interesting to examine whether the role and behaviour of pay consultants changes significantly under different corporate governance systems, for example through a multi-country study. There is also scope for the study of

the role of pay consultants with the use of different research tools, e.g. field studies and interviews. These will provide us with a deeper understanding of their role in firms' corporate governance mechanisms and give us further insights in the executive pay determination process in general.

This thesis also studies the interrelation between the introduction of IFRS and executive pay practices. Chapters 3 and 4 make an attempt to close an existing gap in the IFRS related literature; the majority of studies on IFRS so far mainly focus on the market and informational consequences from their adoption. However, accounting serves further purposes other than informing stock markets, for example contracting or stewardship related ones. Having this in mind, chapter 3 studies the possibility that contracting related motives could have affected IFRS related accounting choice while chapter 4 shows strong indications that accounting numbers have become less useful for contracting purposes post IFRS. It would be also interesting to conduct comparative studies between the UK and other less stock market oriented economies using similar to chapters 3 and 4 research designs. More generally, we need to further expand and study the consequences from adapting a unified set of accounting standards in multiple settings that also take into account the different purposes that accounting serves. Additionally, there is also scope for more international analysis of these issues. This will provide us with further information on the implications from the adoption of IFRS and the role of accounting in general.