

## Compensation consultants and CEO pay: UK evidence

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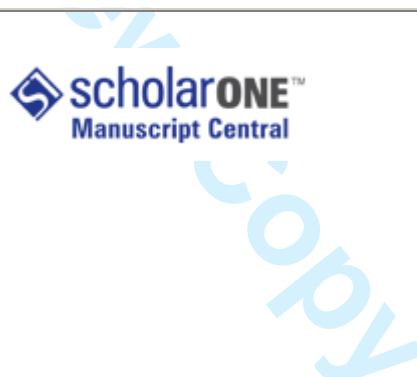
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## Compensation Consultants and CEO Pay: UK Evidence

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# Compensation Consultants and CEO Pay: UK Evidence

## ABSTRACT

**Manuscript type:** Empirical

**Research Question/ Issue:** This paper provides new evidence on the effect of compensation consultants on CEO pay.

**Research Findings/ Insights:** We produce new evidence on the managerial power approach (MPA) to corporate governance by examining the influence of compensation consultants on CEO pay structures and the decision to hire a compensation consultant in the UK. We find evidence that is not consistent with the MPA. Contrary to the MPA predictions, we find that the positive effect of consultants on CEO pay levels mainly stems from an increase in equity based compensation. We show that consultants exert a negative influence on basic (cash) pay. In addition, we illustrate that the choice of hiring a consultant can be explained by economic determinants, e.g. firm governance characteristics. The existence of a powerful CEO does not increase the likelihood of hiring a pay consultant. The results are robust to several model specifications and tests for selection bias.

**Theoretical/Academic Implications:** The results indicate that compensation consultants may have a positive effect on the structure of CEO pay since they encourage incentive based compensation. We also show that economic determinants, rather than CEO power, explain the decision to hire compensation consultants. Overall, our results cast doubts on the conclusions of the MPA regarding the role of compensation consultants. Their role can be better explained within the optimal contracting framework.

**Practitioner/Policy implications:** This study offers insights to the positive effect the hiring of a pay consultant could have towards the design of a CEO pay contract.

**Keywords:** Corporate Governance, Compensation Consultants, Executive Compensation.

## 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 paper 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, Fried and Walker, 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<sup>1</sup> 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 managerial power hypothesis, 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 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.

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This paper 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 managerial power hypothesis. 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.

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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 managerial power hypothesis, but as part of the solution, i.e. contribute towards the achievement of an optimal contract.

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, Jensen and Murphy, 1998; Bizjak, Lemmon and Naveen, 2007; Murphy, 1998; Wade, Porac and Pollock, 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 (Armstrong, Ittner and Larcker, 2009; Conyon, Peck, Read and Sadler, 2009a). However, this result does not seem to hold for UK firms (Conyon et al., 2009a). 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., 2009a). With the use of matching pairs for economic and corporate governance characteristics, Armstrong et al. (2009) 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.

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, Carter and Hillegeist (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 managerial power hypothesis regarding the role of compensation consultants and in particular, the relationship between CEO power and the consultant choice. 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., 2009a), we investigate the whole structure of UK CEO pay. As we show later in our paper, 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 consultants.

## 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 Wilekens, 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.

## THEORETICAL DEVELOPMENT

### 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 with in 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. Hanlon, Rajgopal and Shevlin, 2003; Grinstein and Hribar, 2004). 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 (Bernille 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.

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3 This implies that an element of risk shifting is present in any form of equity based pay, even the  
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5 sub-optimally set ones. In addition, we believe that such practices are the exceptions to the rule,  
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7 as amply illustrated by the extent of the above mentioned scandal. In markets with high levels of  
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9 transparency, like the US and the UK, these practices are not expected to be widespread and  
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11 systematic. The recent financial crisis, which has put managerial compensation on the spotlight,  
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13 has illustrated that it is systematic widespread errors on incentive setting, rather than issues of  
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15 “camouflaging” that can cause havoc in the markets. The emphasis on short term, market share  
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17 growth incentives, which lead to excessive managerial risk-taking, is highlighted as one of the  
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19 main reasons for the recent crisis (Bebchuk and Fried, 2010).  
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24 Therefore, we argue that a positive relation between equity based pay and the use of pay  
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26 consultants would serve as an indication that consultants urge firms to use pay plans that tie  
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28 managers’ pay to shareholders’ wealth.  
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31 More formally, our three main hypotheses are:  
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33 *Hypothesis 1: Pay consultants have an increasing effect on the levels of total CEO pay.*  
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35 *Hypothesis 2: Pay consultants have an increasing effect on the salary level and proportion of*  
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37 *CEO pay.*  
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39 *Hypothesis 3: Pay consultants have a non-positive effect on the level and proportion of*  
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41 *incentive based CEO pay.*  
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45 Empirical evidence on the decision to hire a compensation consultant is also potentially  
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47 relevant for assessing the MPA. The notion of CEO power is extremely important in the MPA.  
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49 According to Bebchuk et al. (2002), in all firms with dispersed ownership the CEO has a certain  
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51 degree of power which provides opportunities for rent extraction. However, depending on the  
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53 combination of specific firm/CEO characteristics (e.g. CEO ownership and tenure, board  
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55 independence, existence of large institutional shareholders) the power of the CEO can vary.  
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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.*

**RESEARCH DESIGN**

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

$$\text{Level of CEO Pay} = \beta_0 + \beta_1 * \text{consultant dummy} + \beta_2 * \text{other compensation related variables} + \varepsilon_i \tag{1}$$

$$\text{Proportion of CEO Pay} = \beta_0 + \beta_1 * \text{consultant dummy} + \beta_2 * \text{other compensation related variables} + \varepsilon_i \quad (2)$$

In total we run seven different regressions. The first four refer to the levels of CEO pay (equation 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) 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:

$$\text{Consultant Dummy} = \delta_0 + \delta_1 * \text{CEO power} + \delta_2 * \text{other selection related variables} + \varepsilon_i \quad (3)$$

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.

**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 (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 101<sup>st</sup> to the 350<sup>th</sup> 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.

## 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, Peck and Sadler (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%.<sup>2</sup>

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, Hambrick and Baumrin (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, O'Reilly and Wade, 1994; Newman and Mozes, 1998) have shown 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 (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 (sub)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.

### **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 paper.

**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.<sup>3</sup>

**Fees and Location.** Based on the auditor independence literature (Abbott, Parker and Peters, 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 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).

**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 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 Uzua, 2010). The model we apply is a switching regression model, where we have two different regression equations and a criterion function – equation 6, which determines the system of equations to be used (Lee, 1978; Maddala, 1985).

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:

$$P_{ci} = \theta_{c0} + \theta_{c1}X_{ci} + \varepsilon_{ci} \quad (4)$$

$$P_{ni} = \theta_{n0} + \theta_{n1}X_{ni} + \varepsilon_{ni} \quad (5)$$

$$C_i = \delta_0 + \delta_1X_i + \delta_2Z_i + \varepsilon_i \quad (6)$$

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:

$$\begin{aligned} &P_{ci} \text{ when } C_i=1 \text{ and} \\ &P_{ni} \text{ when } C_i=0, \text{ but never both.} \end{aligned}$$

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  $\delta_0, \delta_1, \delta_2$  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:

$$P_{ci} = \theta_{c0} + \theta_{c1}X_{c1} + \sigma_{1\varepsilon} \left( -\frac{f(\Psi_i)}{F(\Psi_i)} \right) + \eta_c \quad (7)$$

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:

$$P_{ni} = \theta_{n0} + \theta_{n1} X_{n1} + \sigma_{2\varepsilon} \left( -\frac{f(\Psi_i)}{1 - F(\Psi_i)} \right) + \eta_n \quad (8)$$

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

The parameters  $(\theta_{ci})$  can be estimated by regressing the pay related variable  $P_{ci}$  on  $X_{ci}$  and  $(-f(\hat{\Psi}_i)/F(\hat{\Psi}_i))$ , 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  $(\theta_{ni})$ . 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:

$$\hat{P}_{ci} = \hat{\theta}_{c0} + \hat{\theta}_{c1} X_{c1}, \text{ for firms with consultants and} \quad (9)$$

$$\hat{P}_{ni} = \hat{\theta}_{n0} + \hat{\theta}_{n1} X_{n1}, \text{ for firms without consultants.} \quad (10)$$

The differences are derived by subtracting the predicted values from equations (9) and (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.

## RESULTS

### Descriptive Statistics

Table 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



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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.

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Insert Table 1 about here  
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In Table 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). In the third column, we report the market share of each consultant.

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 about here

Table 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 3 about here

Table 4 reports descriptive statistics on the variables used in our analysis, while Table 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 4 about here

Insert Table 5 about here

Main Results

Table 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., 2009a; Murphy and Sandino, 2010) and thus we confirm Hypothesis 1. We note that Conyon et al. (2009a) 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 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) have shown 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 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 6 and 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 ( $t = 5.04, p < .001$ ) and higher proportions of long-term equity based pay ( $t = 4.41, p < .001$ ). 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 paper. 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 6 about here

Insert Table 7 about here

**Consultant Selection and Selection Bias**

Table 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 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 ( $p < .000$  in all cases), 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 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.

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Insert Table 8 about here

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Insert Table 9 about here  
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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.

**CONCLUSION**

This paper 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 managerial power hypothesis 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., 2009; Conyon et al., 2009a). 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 managerial power hypothesis in favor of optimal contracting, we can claim that it is not possible to reject the optimal contracting hypothesis in favor of the managerial power hypothesis 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 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;



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3 hence our study is not immune to it. Despite this, the “camouflage” argument is in any case  
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5 difficult to substantiate. Also, given the recent public scrutiny over CEO pay arrangements it is  
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7 difficult to see how UK firms, especially the larger, more visible ones, would get away with such  
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9 practices. Finally, our results on the selection of pay consultants are unaffected by the  
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11 camouflage argument. Still, they all point against the predictions of the managerial power  
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13 hypothesis.  
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17 Overall, we believe our results suggest that compensation consultants are not part of the  
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19 agency problem, as claimed by Bebchuk et al. (2002), but can actually be part of the solution to  
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21 the problem of designing an optimal executive pay contract. These results entail important  
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23 practical implications for firms, since the hiring of a compensation consultant can ultimately  
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25 have a positive effect on the design of a CEO pay contract. Firms should concentrate their efforts  
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27 on strengthening the internal governance mechanisms; the hiring of outside, expert opinion can  
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29 help in this direction.  
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**NOTES**

1. According to the managerial power hypothesis these relationships arise when nominally independent directors are connected to members of the management team by bonds of interest, collegiality, or affinity.
2. We have also tested different ownership thresholds, i.e. 5% and 7.5%, and the results remain qualitatively the same.
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, Peck, Read and Sadler (2009b); firms with higher complexity in their pay packages are more likely to hire a pay consultant (p. 8)

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**TABLE 1**  
**Number of Firms using Compensation Consultants in Aggregate and per Index in 2006**

	Number of Firms	Without consultants	With Consultant	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 Small Cap	204	97	107	100	5	2

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).

**TABLE 2**  
**Number of client firms per Compensation Consultant in 2006**

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%

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 than one consultant.

**TABLE 3**  
**Portfolio of client firms per Compensation Consultant and Index**

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
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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.

**TABLE 4**  
**Descriptive Statistics**

Variables	Mean	Median	St.Deviation	Min	Max	Skewness	Kurtosis
Total pay	3,155.99	1,866.00	3,830.88	27.00	35,188.00	4.00	19.00
Salary	778.66	654.00	518,069.90	.00	6,540.00	3.83	32.61
Bonus	625.78	377.50	886,986.70	.00	9,607.00	4.17	27.55
Equity Based Pay	1,572.27	618.50	3,070,689.90	.00	35,188.00	5.29	40.02
Other pay	190.81	95.00	11.98	.00	1,756.00	2.90	9.89
Salarymix	0.38	0.33	.21	.00	1.00	0.93	3.56
Bonusmix	0.20	0.19	.16	.00	0.93	1.13	5.05
Equitymix	0.33	0.36	.25	.00	1.00	0.16	2.26
Dividend Yield	2.35	2.32	1.69	.00	8.27	0.53	3.19
Leverage	0.21	0.18	.19	.00	1.33	1.35	6.39
Book-to-Market	0.45	0.39	.33	-1.20	1.92	0.64	5.47
Total Assets	25,794.11	984.40	160,270.69	1.00	1,949,167.00	9.80	104.10
Volatility	5.49	5.00	2.45	.00	20.00	1.60	7.58
Non-Executives Ratio	0.59	0.60	.12	.00	1.00	-0.21	3.77
Compensation Committee	3.45	3.00	1.03	.00	8.00	0.70	5.27
Tenure	5.53	4.30	2.45	.00	39.50	1.60	7.58
Institutional Shareholders	15.43	10.60	19.16	.00	96.16	1.35	4.26
Pay Complexity	1.60	1.45	1.41	.00	9.00	1.49	6.74

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.



Table 5  
Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Ln(total pay)	1.00														
2 Ln(salary)	.84***	1.00													
3 Ln(bonus)	.38***	.23***	1.00												
4 Ln(equity)	.48***	.25***	.25***	1.00											
5 Consultant Dummy	.21***	.12**	.17***	.28***	1.00										
6 Institutional Shareholders	-.01	-.02	-.07†	.03	.00	1.00									
7 Non-Executives Ratio	.16***	.06	.00	.21***	.21***	.00	1.00								
8 Compensation Committee	.35***	.13**	.20***	.25***	.28***	-.05	.24***	1.00							
9 Ln(Assets)	.57***	.24***	.25***	.33***	.27***	-.13**	.18***	.39***	1.00						
10 Dividend Yield	.02	.04	-.06	.09*	.09*	-.01	.02	.16***	.27***	1.00					
11 Leverage	.02*	.01	.02	.11**	.14**	-.05	.07†	.12**	.23***	.12**	1.00				
12 Book-to Market	.00	-.00	-.05	-.02	-.09*	-.08†	.03	-.09*	.14***	.07†	-.17***	1.00			
13 Volatility	-.19***	-.14***	-.12**	-.04	-.07†	.16***	-.06	-.18***	-.19***	-.19***	-.07	-.06	1.00		
14 CEO tenure	-.07	-.02	-.07†	-.08†	-.10*	-.08*	-.23***	-.10*	-.07	-.05	-.04	.04	.00	1.00	
15 Stock Return	.04	.00	.22***	.01	.00	-.06	-.11**	.03	.04	-.29***	-.08†	-.12**	.01	.04	1.00

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. The asterisks indicate a 1%(\*\*\*), 1%(\*\*), 5%(\*) and 10%(†) level of statistical significance.

**TABLE 6**  
**Linear Regression on Levels of Compensation on Compensation Consultant Dummies and other Executive Pay related Variables**

		Dependent Variables			
		ln(total pay) (1)	ln(salary) (2)	ln(bonus) (3)	ln(equity) (4)
		Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)
Control Variables	Institutional Shareholders	.00 (1.05)	.00 (.46)	-.01 (-.87)	.02 <sup>†</sup> (1.65)
	Non-Executives Ratio	.62 (1.09)	.07 (.16)	-2.14 (-1.19)	5.21* (2.01)
	Compensation Committee	.08* (1.80)	.01 (.23)	.40 (1.56)	.45 <sup>†</sup> (1.83)
	ln(Assets)	.23*** (5.04)	.13*** (3.85)	.55*** (4.46)	.60*** (3.59)
	Dividend Yield	-.09* (-2.26)	-.03 (-.88)	-.35* (-2.17)	.00 (.01)
	Leverage	-.79 <sup>†</sup> (-1.81)	-.45 (-1.15)	-1.62 (-1.30)	.67 (.42)
	Book-to Market	-.24 (-1.30)	-.07 (-.51)	-.84 (-.88)	-.91 (-.81)
	Volatility	-.08 (-1.29)	-.07 (-1.26)	-.17 <sup>†</sup> (-1.68)	.10 (.75)
	CEO tenure	-.00 (-.39)	-.00 (-.16)	-.06 (-1.31)	-.00 (-.14)
	Stock Return	.06 (.40)	.02 (.16)	2.50*** (3.22)	.44 (.50)
Main Explanatory Variable	Consultant Dummy	.28* (2.23)	.11 (1.07)	.96 <sup>†</sup> (1.90)	2.20** (3.18)
Constant		11.44*** (17.09)	12.08*** (24.04)	5.74*** (2.65)	-5.71* (-2.04)
Industry Dummies		Yes	Yes	Yes	Yes
R-squared		.24	.13	.28	.21
Observations		500	500	500	500

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. In parentheses we have t-statistics and the asterisks indicate a 1% (\*\*\*) , 1% (\*\*) , 5% (\*) and 10% (†) level of statistical significance. All estimators are robust.

**TABLE 7**  
**Linear Regression on the Proportions of Compensation on Compensation Consultant Dummies and other Executive Pay related Variables**

		Dependent Variables		
		Salarymix (1)	Bonusmix (2)	Equitymix (3)
		Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)
Control Variables	Institutional Shareholders	-.00 (.84)	-.00 (-1.04)	.00 <sup>***</sup> (2.14)
	Non-Executives Ratio	-.18 <sup>†</sup> (-1.88)	-.17 <sup>**</sup> (2.65)	.32 <sup>***</sup> (3.27)
	Compensation Committee	-.01 (-1.46)	.00 (.31)	.01 (.99)
	ln(Assets)	-.02 <sup>***</sup> (-4.43)	.00 (1.04)	.02 <sup>***</sup> (4.41)
	Dividend Yield	.01 (1.64)	-.01 <sup>*</sup> (-2.49)	-.00 (.14)
	Leverage	.03 (.61)	-.07 <sup>*</sup> (-1.82)	.00 (.11)
	Book-to Market	.07 <sup>†</sup> (1.82)	-.00 (-.04)	-.05 (-1.21)
	Volatility	-.00 (-.76)	-.00 (-1.56)	.00 (.98)
	CEO tenure	.00 (1.24)	-.00 <sup>*</sup> (-1.98)	.00 (.12)
	Stock Return	-.03 (-1.21)	0.04 <sup>*</sup> (2.00)	.00 (.01)
	Consultant Dummy	-.07 <sup>**</sup> (-3.04)	-.00 (-.35)	.06 <sup>**</sup> (2.51)
	Constant	.95 <sup>***</sup> (8.92)	0.32 <sup>***</sup> (4.41)	-.38 <sup>***</sup> (-3.64)
	Industry Dummies	Yes	Yes	Yes
R-squared		.29	.20	.24
Observations		500	500	500

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. In parentheses we have t-statistics and the symbols indicate a 1%<sup>\*\*\*</sup>, 5%<sup>\*\*</sup>, and 10%<sup>†</sup> level of statistical significance. All estimators are robust.

**TABLE 8**  
**Probit Selection Model and Split Linear Regressions controlling for Selectivity Bias**

		Dependent Variables						
		All firms (1)	ln(total pay) (2)	ln(total pay) (3)	equitymix (4)	equitymix (5)	salarymix (6)	salarymix (7)
		Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient t (t-statistic)	Coefficient t (t-statistic)	Coefficient t (t-statistic)
Control Variables	Institutional Shareholders	.00 (.63)	-.00 (-.40)	-.00 (-1.11)	.00 <sup>†</sup> (1.68)	-.00 (-.39)	-.00 (-.40)	.00 (.84)
	Non-Executives Ratio	1.20* (2.15)	.41 (1.10)	-.76 (-1.40)	.07 (.61)	-.21 (-1.46)	-.03 (-.36)	.43** (2.80)
	Compensation Committee	.19* (2.33)	-.01 (-.37)	-.15 <sup>†</sup> (-1.71)	-.02* (-2.00)	-.05* (-2.16)	.02* (2.09)	-.00 (-.35)
	ln(Assets)	.05 (1.34)	.17*** (8.26)	.06 <sup>†</sup> (1.88)	.01* (2.16)	-.01 (-1.10)	-.01*** (-3.39)	.02 (.28)
	Dividend Yield	.02 (.69)	-.06** (-2.66)	-.08 <sup>†</sup> (-1.98)	-.00 (-.15)	-.02* (-2.06)	.01* (1.72)	.02* (2.27)
	Leverage	.29 (.84)	-.51* (-2.55)	-1.02** (-2.92)	-.06 (-1.00)	-.21* (-2.20)	.05 (1.00)	.19* (1.98)
	Book-to Market	-.34 (-1.64)	-.23 <sup>†</sup> (-1.96)	.18 (.79)	-.01 (-.48)	.17** (2.74)	.00 (.15)	-.08 (-1.23)
	Volatility	-.01 (-.61)	-.00 (-.46)	-.01 (-.55)	.00 <sup>†</sup> (1.72)	.00 (.53)	-.00 (-1.37)	-.00 (-.32)
	Stock Return	.04 (.22)	-.03 (-.34)	-.16 (-.75)	.02 (.57)	-.03 (-.58)	-.04 (-1.57)	-.06 (-.94)
	CEO tenure	-.00 (-.25)	.01* (2.01)	.01 (1.38)	.00 <sup>†</sup> (1.86)	-.00 (-.18)	-.00 (-.46)	.00 (1.26)
Selectivity Bias Variables	Ln(audit fees)	.11* (2.48)						
	Fee Ratio	1.13***						

1		(3.19)					
2							
3	Location	-.08					
4		(-.62)					
5	Pay Complexity	.17**					
6		(3.07)					
7	CEO Ownership	-.52					
8		(-.84)					
9	Industry Competition	.68					
10		(.54)					
11	Constant	-3.04***	13.90***	9.57***	0.73***	-1.03***	1.04***
12		(-3.91)	(19.80)	(14.44)	(3.24)	(-5.70)	(4.57)
13	Industry Dummies		Yes	Yes	Yes	Yes	Yes
14	Selectivity Variable		-4.24***	-4.02***	-1.54***	-1.40***	1.41***
15			(-5.06)	(-5.02)	(-5.69)	(-6.38)	(7.47)
16	R-squared	.17	.44	.38	.23	.35	.38
17	Observations	500	361	139	361	139	361
18							
19							
20							

21  
22 *Selectivity Variable for columns 2,4,6 =  $-f(\gamma_0 + \gamma_1 X_i + \gamma_2 Z_i) / F(\gamma_0 + \gamma_1 X_i + \gamma_2 Z_i)$ - Firms with Consultants*  
23 *Selectivity Variable for columns 3,5,7=  $f(\gamma_0 + \gamma_1 X_i + \gamma_2 Z_i) / (1 - F(\gamma_0 + \gamma_1 X_i + \gamma_2 Z_i))$ - Firms without Consultants*  
24 *Predicted from the selection model that we ran for all firms (Column 1 - Z is the vector of the exogenous variables)*  
25

26  
27 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  
28 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  
29 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  
30 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  
31 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.  
32 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  
33 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  
34 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  
35 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  
36 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  
37 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  
38 CEO pay. In parentheses we have the t-statistics (z-statistics for column 1) and the asterisks indicate a 1%(\*\*\*) , 1%(\*\*), 5%(\*) and 10%(+) level of statistical significance.  
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**TABLE 9**  
**Average Predicted Percentage Differences**

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

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%(\*\*\*), 1%(\*\*), 5%(\*) and 10%(†) level of statistical significance.