

# Say on Pay Vote and CEO Compensation: Evidence from the UK

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## **Abstract:**

In this study, we examine the effect on CEO pay of new legislation introduced in the United Kingdom (UK) at the end of 2002 that mandates an annual, non-binding shareholder vote (“say on pay”) on the executive pay report prepared by the board of directors. Based on a large sample of UK firms over the period from 2000 to 2005, we find no evidence of a change in the level and growth rate of CEO pay after the adoption of say on pay. However, we document an increase in the sensitivity of CEO pay to poor performance. The effect is more pronounced in firms with high voting dissent but it extends more generally to firms with excessive compensation in the “pre” period (2000-2002), regardless of the voting dissent, suggesting that some firms responded to threat of a negative vote by acting ahead of the annual meeting. Anecdotal evidence on explicit changes to CEO pay contracts in response to specific shareholder requests also indicates a shift toward greater sensitivity of CEO pay to poor performance. Overall, these findings appear consistent with calls for less “rewards for failure” that led to the legislation’s introduction. Our evidence may be of interest to regulators and investors who are pondering the merits of adopting say on pay in the US and other countries.

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## 1. Introduction

In recent years there has been an increasing interest in the effect of a number of monitoring mechanisms, such as institutional ownership and board structure, on executive pay (Hartzell and Starks, 2003; Chhaochharia and Grinstein, 2009; Dikolli, Kulp and Sedatole, forthcoming). At the same time, there has been an intense debate on the appropriate role of shareholder “voice” in corporate governance.

In this study, we extend and combine these two avenues of research by examining the effect on CEO pay of a legislation introduced in the United Kingdom (UK) in 2002 which mandates an annual, advisory shareholder vote on the executive compensation report prepared by the board of directors (hereinafter “say on pay” legislation).<sup>1</sup> The say on pay vote was introduced by the UK government to increase “accountability, transparency, and performance linkage” of executive pay (Baird and Stowasser, 2002) in response to investors’ concerns with rapid growth in CEO pay and the adoption of controversial US-style compensation practices (The Economist, 2003). In previous years, stories of “fat cat pay” and “rewards for failure” (e.g., generous golden parachutes, option repricings) often made headlines in the British press, involving high-profile firms like GlaxoSmithKline, Marconi and Vodafone (FT, 1998; Independent, 2000; BBC News, 2001, 2002a, 2002b).

In May 2003, during the first proxy season under the new legislation, a highly-publicized majority vote against its executive compensation report led the board of GlaxoSmithKline to modify or remove a number of contentious provisions from its executive pay plan and launch an extensive and ongoing consultation process with its

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<sup>1</sup> The legislation is called Directors’ Remuneration Report Regulations 2002 (DRR 2002). In the UK the term “directors” is used to indicate both executive and non-executive directors.

shareholders (BBC News, 2003).<sup>2</sup> As shown in Appendix 1, many other firms also adjusted their CEO pay practices in response to the pressure of say on pay votes, particularly with respect to provisions perceived as pay for failure (severance terms, retesting of vesting conditions, etc.).<sup>3</sup> Encouraged by the UK experience, other countries have adopted similar legislation (ISS, 2007) and say on pay has become a central theme in the governance reform debate in the US.<sup>4</sup>

Motivated by the growing academic and practitioners' interest, we examine the impact of say on pay legislation in the UK. Using data for a large sample of UK firms before (2000-2002) and after (2003-2005) the introduction of say on pay, we find no evidence of a change in the level and growth rate of CEO pay—*after* controlling for firm performance, size and other determinants of CEO pay—, consistent with levels and growth of CEO pay in the UK being by and large the result of market forces. However, we find an increase in the sensitivity of CEO pay to poor performance, consistent with

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<sup>2</sup> In particular, shareholders objected to the large severance arrangement for the CEO (with an estimated value of 22 million UK pounds), the presence of a single performance hurdle target, and rolling retesting. In response to the vote, the company reduced the severance package (from two times salary to one), removed rolling retesting, and introduced a new performance condition (total shareholder return against a global pharmaceutical peer group). Besides, in the year subsequent to the vote, the chair of the remuneration committee met shareholders representing almost half of the firm's equity capital. See Appendix 1 for details.

<sup>3</sup> A study commissioned by the UK government in 2004 (Deloitte, 2004) reports that, among the FTSE 100 firms, the percentage of executive directors with 24-month notice periods fell from 32% in 2001 to 1% in 2004, with all firms converging to the practice of a 12-month notice period, effectively implying severance payments equal to one year's salary instead of two. Also, according to the same study, between 2001 and 2004, provisions banning retesting increased from 10% to 43% of the new plans in FTSE 100 companies. Retesting occurs when a firm fails to meet the performance target in the set timeframe (say, 3 years) and the board extends the test for additional years (with a corresponding adjustment of the performance target).

<sup>4</sup> Between 2006 and 2008, shareholder activists led by AFSCME (a union pension fund) targeted more than 150 US firms with non-binding shareholder proposals requesting the adoption of "say on pay" (Hogan, 2007). These proposals have been supported by prominent investors (Council for Institutional Investors, TIAA-CREF) and averaged more than 40% of votes in favor—an unusually high degree of support for compensation-related proposals (Johnson and Shackell 1997; Thomas and Martin 1999). In April 2007, the House of Representatives approved a bill seeking to introduce a say on pay rule (H.R. Bill 1257). Shortly thereafter, an analogous bill was introduced in the Senate (Senate Bill 1811) by then-Presidential Candidate Barack Obama (Walton, 2007; CFO.com 2008). Say on pay has been part of the bailout discussions in recent months and a handful of US firms have voluntarily adopted say on pay". For more details on the events related to "say on pay" in the US, please see Cai and Walkling (2007).

the anecdotal evidence in Appendix 1 and suggesting that the explicit changes made by GlaxoSmithKline and other firms were not “camouflaged” through offsetting adjustments to other aspects of CEO pay.

The increase in the sensitivity of CEO pay to poor performance is most pronounced in firms experience substantial voting opposition against the remuneration report, consistent with boards responding to shareholder votes in spite of their advisory nature. Notably, the increase in the sensitivity of CEO pay to poor performance is also most pronounced in firms with an ‘excessive’ level of CEO pay (i.e. excessive relative to its predicted value based on economic determinants) before the adoption of say on pay, *regardless* of the voting dissent. The result is consistent with (at least some) firms responding to the threat of a shareholder vote, consistent with anecdotal evidence of firms consulting with shareholders and changing CEO pay practices ahead of the annual meeting to win shareholder support (Appendix 1) and with practitioners’ claims of enhanced dialogue between firms and shareholders (Davis 2007). Interestingly, we do *not* find that the increase in the sensitivity of CEO pay to poor performance is more pronounced in firms with higher raw levels of CEO pay, suggesting that shareholders did not use the power of the say on pay vote to indiscriminately attack large CEO pay packages, but only to pressure firms with levels of CEO pay larger than justified by economic factors.

Finally, we do not find a similar increase in the sensitivity of CEO pay to poor performance in a control sample of UK firms not subject to say on pay (firms traded on the Alternative Investment Market). The fact that the increase in sensitivity of CEO pay to poor performance only seems to occur in UK firms subject to say on pay—and mostly

in those ex ante expected to be affected (e.g. firm with excessive CEO pay, firms with high voting dissent)—, combined with our evidence of explicit changes in response to (or in anticipation) of say on pay votes (Appendix 1), supports a causality interpretation of our findings.

While the interpretation and policy making implications of our findings remain subject to some caveats (see Section 5.4), overall we interpret them as suggesting that say on pay in the UK was effective in achieving one of its major goals—to reduce the “rewards for failure” through a stronger link between pay and realizations of poor performance at firms with controversial CEO pay practices.

Our study contributes to the literature on executive pay and the one on shareholder voting. With respect to the former, first we provide direct, large-sample evidence on the effects of a controversial regulation adopted by (or being considered for adoption) numerous countries, thereby informing the ongoing policy-making debate on reforming CEO pay practices (e.g., Buffet 2003; Jensen, Murphy and Wruck 2004; Cook 2005; Immelt 2006). In particular, we provide evidence on the effect of one form of “outrage”— a shareholder vote—, that has been argued to be the only effective constraint on CEO pay (Bebchuk and Fried, 2004).<sup>5</sup> Our results complement the analysis in Cai and Walkling (2007), who document significantly positive abnormal returns around the House of Representatives’ passage of a say-on-pay bill for firms with high abnormal CEO compensation and low pay-for-performance. Second, we add to an emerging yet

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<sup>5</sup> Critics of CEO pay point to increasing levels of pay, weak and asymmetric pay-to-performance sensitivities and opaque disclosures as evidence of a flawed pay determination process, captured by powerful CEOs. According to this “managerial power” view (Bebchuk and Fried, 2003), boards are willing to monitor pay arrangements only when they become ‘outrageous’ and the directors’ reputation is at risk. Under this view, shareholder votes become a low-cost means to express outrage. According to the “efficient contracting” view, on the contrary, pay arrangements are mostly the result of labor market forces and properly reflect the value of managerial skills (for extensive reviews of the empirical evidence, see Holmstrom and Kaplan, 2003, and Core, Guay and Thomas, 2004).

limited literature on the role of institutional investors and shareholder activists in executive compensation design (e.g., Hartzell and Starks 2003; Ferri and Sandino 2007; Dikolli, Kulp and Sedatole, forthcoming). Previous studies had concluded that pay-related shareholder proposals had no effect on CEO pay (Johnson and Shackell, 1997; Thomas and Martin, 1999; Ertimur, Ferri and Muslu, 2008). Finally, we contribute to the literature on the effect of regulatory intervention on CEO pay and the political dynamics of CEO pay (e.g., Jensen and Murphy 1990; Murphy 1995), and add to the limited body of work on executive pay outside the US (e.g., Conyon and Murphy 2000; Conyon, Core and Guay 2006).

With respect to the literature on shareholder voting, we extend to an international setting the recent evidence of greater impact of advisory shareholder votes on corporate decision making (Ertimur, Ferri and Stubben 2007; Thomas and Carter, 2007; Del Guercio, Wallis and Woidtke, 2008; Cai, Garner and Walkling, forthcoming), thereby contributing to the ongoing debate about expanding shareholder voting rights and reforming proxy voting rules.

The paper proceeds as follows. Section 2 discusses the institutional background. Section 3 outlines the theoretical basis for the study and develops our empirical predictions. Section 4 describes the research design and the data used in the analysis. Section 5 presents our empirical results and discusses their implications, as well as a number of caveats. Concluding remarks are in Section 6.

## **2. Institutional background**

### *2.1 The road to “Say on Pay” in the UK*

UK legislators' interest in executive pay began in the early 1990s. At a time of stagnant employees' salaries and numerous layoffs, rapidly increasing levels of executive pay and cases of tenuous links between pay and performance made headlines in the press and generated an outcry among the public (e.g. FT 1995), with Labour Party politicians calling for legislative reform.<sup>6</sup> The then-Conservative government ultimately did not take action, relying instead on the "Greenbury" Report, a Code of Best Practice on Executive Pay issued in 1995 by a panel set up by the Confederation of British Industry.<sup>7</sup> The main theme of the report was greater disclosure of executive pay. Among other things, it recommended that boards would provide shareholders every year with a report on executive pay, including a description of compensation policies and details about each element of the pay package. Consistent with its emphasis on disclosure, the Greenbury Report did not endorse the idea of an annual shareholder vote on executive pay, arguing that shareholders prefer to focus on overall performance rather than the details of pay packages – a position echoed by the 1998 Hampel Report. However, the Greenbury Report recommended that boards invite shareholders to vote on executive pay at the annual meeting under special circumstances (e.g. changes in remuneration policy, controversial issues)—a recommendation incorporated in the Combined Code but followed only by a handful of firms (DTI 1999).<sup>8</sup>

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<sup>6</sup> For a detailed account of these events, see Cheffins and Thomas (2001).

<sup>7</sup> The 1995 Greenbury report, together with the 1992 Cadbury Report, the 1998 Hampel Reports and the 2003 Higgs report forms the basis of the Combined Code of Principles of Good Governance and Code of Best Practice (usually referred to as 'Combined Code'), the 'handbook' of corporate governance best practices in the UK. A key feature of the Combined Code is its disclosure-oriented focus: listed firms are encouraged but not obliged to comply with best practices. However, failure to comply must be disclosed and explained (the so-called "comply or explain" approach).

<sup>8</sup> The Greenbury Report also recommended that shareholders vote on various types of long-term incentive plans—a recommendation eventually embodied in the UKLA Listing Rules.

While the Greenbury Report – widely adopted by UK firms – resulted in greater pay disclosure and firms began to adopt more incentive-based pay schemes, pay levels kept increasing and the sensitivity of pay to performance continued to be questioned. The Labour Party’s victory in the 1997 elections raised the expectations of regulatory reform. However, when the Department of Trade and Industry in 1999 released a consultation paper (hereinafter DTI), the central theme was that shareholders, not government, should impose sensible limits to executive pay. For this purpose, the DTI called for better disclosures to allow shareholders to assess the link between pay and performance. Unlike the Greenbury and Hampel Reports, though, the DTI also favored enhanced power to shareholder votes with respect to executive pay. The DTI reasoned that other mechanisms available to shareholders were practically ineffective<sup>9</sup> and that a more direct shareholder involvement would benefit the communication between shareholders and boards. Among other options, the DTI put forth the possibility of a mandatory, advisory annual shareholder vote on executive pay. The DTI did not result in any immediate action.

In March 2001, the Trade and Industry Secretary announced that disclosure regulation would be restructured and that it would be done through legislation, rather than an amendment of the UKLA Listing Rules (the approach favored by some of the largest

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<sup>9</sup> Voting against the approval of the company’s accounts (which include the remuneration report prepared by the board) at the annual meeting was viewed by investors as an excessive measure to deal with executive pay problems. A more targeted approach—voting against the re-election of directors sitting on the remuneration committee—faced some practical challenges, since usually in UK only one-third of the directors are elected each year (for a three-year term). Besides, voting against the re-election of an otherwise valuable director because of concerns with executive pay policies may not serve well the interest of shareholders. Indeed, pay-related vote-no campaigns against directors’ have been rare and not successful in the UK (FT 2001). Another available option (under section 376 of the Companies Act 1985) was for shareholders to submit for a vote at the annual meeting proposals on executive pay issues. However, this option was only available to those few shareholders owing at least 5% of the voting rights. Besides, these proposals are usually non-binding.



institutional investors; Baird and Stowasser, 2002). However, the question of whether to give shareholder more direct involvement in the setting of executive pay was postponed.

## *2.2 The Director Remuneration Report*

In August 2002 the UK government introduced the Directors' Remuneration Report Regulations 2002 (DRR 2002)—a new legislation aimed at increasing “accountability, transparency, and performance linkage of executive pay” (Baird and Stowasser, 2002) – the three guiding principles advocated by the 1995 Greenbury report.

The DRR, which was effective starting in fiscal years ending on and after December 31, 2002, amended several sections of the Companies Act 1985. In particular, it required companies to: i) include an executive pay report in their annual filing with enhanced disclosures (see Section 5.3.2 for details); and ii) submit such report to a nonbinding shareholder vote (by ordinary resolution) at the annual meeting—the first time the concept of “advisory” vote was used in UK company law (Cheffins and Thomas, 2001).

The DRR applied to all firms incorporated in the UK and listed on major UK or foreign stock exchanges. Hence, it did not apply to UK firms trading on the Alternative Investment Market (AIM)—a feature that we exploit in our empirical analysis.<sup>10</sup> Also, it did not apply to foreign firms listed in the UK, as it had been instead requested by some commentators during the consultation period (Baird and Stowasser 2002).

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<sup>10</sup> The Alternative Investment Market is a sub-market of the London Stock exchange which allows smaller companies to float shares with a more flexible regulatory system relative to the Main Market.

### 3. Related Literature and Empirical Predictions

#### 3.1 Theoretical foundations: the role of shareholder voice

Executive compensation plans are formed within a complex system of interrelated constraints that arise due to cognitive, social-psychological, informational, and incentive-compatibility limitations. As a result of these constraints, contracts between a firm and its CEO are inevitably incomplete and the efficiency of CEO pay practices will depend critically on the conditions under which *ex-post* bargaining takes place.

Critics contend that CEO remuneration contracts are often determined under suboptimal bargaining conditions and, as a result, do not reflect shareholders' best interests (e.g., Jensen and Murphy 1990; Khurana 2002; Bebchuk and Fried 2004). According to some of these critics, enhanced shareholder "voice," as reflected and formalized in an advisory vote on the remuneration report, will alter those conditions in a way that is conducive to "arms-length" bargaining, resulting in more efficient executive compensation contracting (Bebchuk, 2007). In particular, the existence of an advisory shareholder vote may make it easier for boards to overcome social-psychological barriers in negotiating with CEOs on behalf of shareholders.<sup>11</sup>

In order for advisory votes to affect compensation practices, incentives must be attached to the threat or the realization of an adverse voting outcome. These incentives are likely implicit/reputational (e.g. Fama 1980). By reducing the cost of aggregating and disseminating information regarding shareholders' discontent, "say on pay" may provide shareholders with an important bargaining lever – the threat of negative public opinion.

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<sup>11</sup> A compensation committee's bargaining power may be constrained by social-psychological factors, namely the desire to build social cohesion in the boardroom (e.g. Bebchuk and Fried, 2004). Former SEC Commissioner Roel Campos has argued that mandatory shareholder advisory votes will give compensation committees the backbone to oppose exorbitant pay packages (Campos, 2007).

Such a threat can be highly effective, as no insurance policy can protect a director from reputational penalties (Dyck and Zingales 2002; Fama and Jensen 1983). Consistent with these arguments, a number of studies show that, especially in the post-Enron environment, advisory shareholder votes have a significant impact on corporate decisions as well directors' reputation in the labor market.<sup>12</sup>

However, the implicit incentives attached to advisory votes may simply result in directors pandering to shareholders and adopting sub-optimal pay practices (Singh, 2006). Hence, an additional condition for advisory votes to result in more efficient CEO pay contracts is that shareholders have the ability to discriminate between “high-quality” and “low-quality” compensation plans as well as a means to aggregate and communicate their preferences to the board. This ability may be limited. For example, dispersed shareholders may lack the required specific knowledge, or the incentives to acquire the knowledge (Bainbridge 2007).<sup>13</sup> On the other hand, anecdotal evidence from the UK experience suggests that a key effect of an advisory vote is the enhanced communication between compensation committees and shareholders *in advance* of the annual meeting and greater resources devoted by investors to the analysis of compensation plans (Deloitte 2004). Such enhanced communication may lead to more informed voting decisions and to the adoption of superior pay practices supported by shareholders.

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<sup>12</sup> Ertimur, Ferri and Stubben (2007) and Del Guercio, Seery and Woidtke (2008) find, respectively, that in recent years directors ignoring shareholder proposals receiving a majority vote and directors subject to vote- no campaigns suffer reputation penalties in the director labor market (Fama, 1980).

<sup>13</sup> Shareholders may also engage in strategic voting behavior (Maug and Rydqvist, 2004). Besides, shareholder votes are subject to social choice problems (e.g., Mas-Colell, Whinston, and Green 1995), since different shareholders will have different preferences over alternative remuneration schemes. For example, even shareholders opposing the remuneration report may support it if they expect an adverse voting outcome to result in what they perceive as an inferior remuneration policy advocated by other shareholder groups.

Ultimately, whether a mandated advisory shareholder vote on the executive pay report has any impact and the nature of such impact remains an empirical question.

### *3.2 Empirical Predictions*

Developing empirical predictions on the effect of the say on pay legislation is a challenge. There is no *ex ante* theoretical reason to expect that say on pay will have a certain impact on CEO remuneration. A vote (or the threat of a vote) against a remuneration report *per se* does not call for any specific change in the CEO compensation contract. The effect (if any) of say on pay will depend on the perceived problem in compensation practices that shareholders want to solve (e.g. level of pay, mix, use of perks) and the solution negotiated with the board ahead of or after the vote. This problem and its solution may differ across firms, as shown in Appendix 1. However, it appears that in the UK say on pay legislation was mostly introduced in response to institutional investors' concerns with the low sensitivity of CEO pay to poor performance. Hence, we predict that, if say on pay legislation was effective in pressuring boards and in forcing more dialogue with key shareholders (see Section 3.1), its introduction led to a higher sensitivity of CEO pay to poor performance. Also, we predict that, if say on pay was effective at achieving its intended purpose, this effect would be more pronounced in (or limited to) firms with more controversial CEO pay packages in the period prior to its introduction.<sup>14</sup>

Finally, we examine whether the effect of say on pay depends on the intensity of alternative monitoring mechanisms (e.g. the concentration of institutional ownership). If say on pay is a substitute monitoring mechanism, then we would predict a stronger effect

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<sup>14</sup> While we focus our empirical prediction on the changes in the sensitivity of CEO pay to poor performance, our research design (Section 4.2) allows us to capture any other effect of say on pay (e.g. change in sensitivity of CEO pay to industry performance, etc.).

in firms with low monitoring. On the other hand, if say on pay is a complementary mechanism, then we would expect a stronger effect in firms where the level of monitoring is already significant.<sup>15</sup>

## **4. Sample Selection and Research Design**

### *4.1 Sample Selection*

Our sample is based primarily on a compensation and governance database compiled by BoardEx, an independent, UK-based, corporate research company.<sup>16</sup> From this database, we obtain CEO compensation, CEO ownership and other corporate governance data (board independence and institutional ownership) for about 600 UK firms. We supplement the BoardEx file with financial data from Worldscope and stock returns data from Datastream. For a subset of UK firms (the FTSE 350 index), we obtain data about the votes cast in favor and against the remuneration report at the 2003 and 2004 annual meetings from Manifest, a UK proxy voting service firm

### *4.2 Research Design*

To examine the effect of the say on pay legislation on CEO pay we compare the sensitivity of CEO pay to its economic determinants for a large sample of (non-AIM) UK firms before (2000-2002) and after (2003-2005) the introduction of say on pay. In particular, we estimate the following model using an ordinary least squares (OLS) regression:

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<sup>15</sup> This test has important implications for policy-makers considering the adoption of say on pay. For example, in the UK, the high concentration and stability of institutional ownership is often credited for the tradition of collective engagement and behind-the-scene dialogue between firms and shareholders—a key feature of the UK corporate governance environment. If say on pay was effective only in firms with high concentration of institutional ownership and required the pre-existence of intense communication between boards and shareholders, its adoption in other countries may be less effective.

<sup>16</sup> BoardEx collects detailed information on corporate governance for approximately 8,000 firms, including 5,000 US firms and 3,000 European firms. For a subset of these firms, BoardEx also collects remuneration data for both executive and non-executive directors.

$$\begin{aligned}
 \text{CEO Compensation} &= \text{Pre Period} * [ \sum_{j=1}^{10} \alpha_j * \text{Pay Determinants}_j ] + \text{Post} \\
 &\text{Period} * [ \beta_0 + \sum_{j=1}^{10} \beta_j * \text{Pay Determinants}_j ] + \text{Firm Fixed Effects} + \varepsilon.
 \end{aligned}
 \tag{1}$$

where:

*CEO Compensation* = natural log of either CEO cash compensation (*Ln CEO Cash Pay*) or CEO total direct compensation (*Ln CEO Total Pay*).<sup>17</sup>

*Pre (Post) Period* = an indicator variable equal to 1 for the years 2000-2002 (2003-2005), and 0 otherwise.

*Pay Determinants* = set of explanatory variables identified by previous studies as determinants of CEO pay (see Section 4.3).

In essence, Equation (1) represents the stacking of two regressions: the first where the observations are from the pre-say on pay period and the second where the observations are from the post-say on pay period. However, ‘stacking’ the regressions enables us to test for changes in the coefficients between the two periods.<sup>18</sup>

To ensure consistency in the sample composition between the Pre and Post period, we restrict the analysis to firms with relevant data in at least one year in the Pre period and one year in the Post period. Also, we exclude firm-year observations with CEO turnover, to avoid the effect of the confounding events that typically accompany

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<sup>17</sup> Cash compensation is defined as the sum of salary and annual bonus, while total direct compensation also includes pensions, the value of equity grants, and the value of long-term incentive payouts and other benefits. Note that we focus on CEO pay as opposed to top executives’ pay because the DRR requires compensation disclosures only for executives sitting on the board (rather than, say, the CEO and the highest paid executive officers). Thus, in theory, the DRR may have led to changes in the identity of non-CEO executives sitting on the board, possibly affecting a comparison of executive pay between Pre and Post period. Besides, most of the debate centers around CEO pay.

<sup>18</sup> See Maddala (1992) for a discussion of stacked regressions. Because this technique will capture any (potential) correlation across the error terms, it allows for statistical tests of differences in coefficients across regressions. The primary assumption underlying stacked regressions is that the error term from each regression has the same distribution. Under this assumption, stacking will result in consistent coefficient estimates.

CEO turnover<sup>19</sup> and to maintain a clearer link between firm performance and the compensation of a single CEO. This also means that our findings may not be ascribed to the reduction in severance terms documented in Appendix 1. Finally, we estimate heteroskedasticity-robust standard errors clustered by firm to account for the fact that we have multiple observations for each company (Froot 1989). Next, we discuss the variables used to estimate Equation (1).

In drawing our inferences on the effect of say on pay on the pay-to-performance sensitivity we rely mostly on the analysis of CEO cash compensation. Due to the nature of most cash-based bonus plans, there is typically a direct structural link between *realized* cash pay and realized performance (e.g. Murphy, 1999). Instead, the link between the value of equity awards (the major component on non-cash total direct compensation) and realized performance is not clear.<sup>20</sup> A positive relation would be observed if firms used award equity grants mostly or only for compensatory purposes (i.e. to reward good performance and penalize bad performance)—for example through the use of “fixed-number” stock option plans (Hall, 1999). However, the grant-date value of equity awards usually represents an *ex-ante* compensation opportunity, rather than realized compensation, since firms use equity-based pay mostly to re-align incentives for future

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<sup>19</sup> CEO turnover years have been shown to be characterized by abnormal compensation arrangements (e.g. Yermack, 1995)—such as make-whole mega-grants for new CEOs, severance payments for outgoing CEOs, etc.—and distortions in *reported* measures of firm performance (e.g. income-reducing accounting method changes, asset write-offs, downward earnings management, divestitures of previous acquisitions; see Hallock and Murphy, 1999).

<sup>20</sup> Prior studies find no significant association between equity grants and accounting performance (e.g. Baber, Janakiraman and Kang, 1996; Barber, Kang and Kumar, 1998). Similarly, Yermack (1995) finds that the association between incentives from new option grants and *contemporaneous* stock performance is “virtually zero”. Core and Guay (1999) find a positive relation, but they warn that the relation is “potentially spurious”, due to the mechanical correlation between stock returns and the grant date stock price (which affects the incentives value of the award). Besides, they note, contemporaneous returns may proxy for changes in the optimal incentive level during the year of the grant. Core and Guay (1999) also find no relation between *lagged* returns (less subject to these problems) and incentives from new options grants.

performance (Core and Guay, 1999), to attract and retain executives (Oyer and Schaefer 2005), and for liquidity, accounting and tax-related reasons (Core, Guay and Larcker 2003). As a result, the relation between the value of equity grants and realized performance can be null or even negative.<sup>21</sup>

Hence, we view the analysis of total direct compensation mostly as a robustness test to check whether the effects documented for the CEO cash compensation analysis are generally offset by other elements of compensation. It is important to note, however, that relative to US-based compensation studies, cash compensation is especially relevant in UK firms since over the sample period it represents on average two thirds of CEO total pay (see Table 1)—twice as much as in US firms.

#### *4.3 Description of Independent Variables (Pay Determinants)*

Standard agency models (e.g. Holmstrom, 1979) predict that CEO compensation varies directly with firm performance (viewed as an indicator of unobservable CEO's actions). Hence, similar to prior studies, we include price-based (stock returns) and accounting-based (return on operating assets, ROA) measures of firm performance.<sup>22</sup> We

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<sup>21</sup> For example, poor past performance may be followed by larger, rather than smaller, grants in an attempt to realign incentives going forward and retain the executives. This can be accomplished ex ante—through a “fixed value” option plan (Hall 1999)—or ex post, through special grants or the repricing of existing grants (e.g. Brenner, Sundaram and Yermack, 2000). As noted by some practitioners (e.g., O’Byrne 1995; Reilly and Enright 2007), the dominant approach to setting equity-based pay—calibrating total compensation opportunity to, say, the 75<sup>th</sup> percentile of a size-based comparator group, and then varying the pay mix in order to provide the desired incentive strength—seems mostly driven by retention concerns and by construction affords little opportunity to link ex ante target pay opportunity to realized performance.

<sup>22</sup> Many studies document a positive association between executive compensation and both accounting- and price-based performance measures (e.g., Murphy, 1985; Lambert and Larcker, 1987; Jensen and Murphy, 1990; Sloan, 1993; Core, Holtausen and Larcker, 1999; Core, Guay and Verrecchia, 2003). The theoretical justification for including price-based performance measures in compensation contracts is that stock returns reflect both the short-run and the long-run impact of all value-relevant management actions, and are less affected by accounting distortions. The argument for the use of accounting-based measures is that, because stock prices are affected by factors beyond management's control, accounting information can be more informative with respect to management's actions (Gjesdal, 1981). Moreover, because accounting returns are the lower variance measure, their use as performance indicators promotes efficient risk-sharing among contracting parties (Sloan, 1993). The explicit use of accounting measures in bonus plans is well documented (e.g. Murphy, 1999; Murphy, 2001).



allow for asymmetric sensitivity of pay to performance by including separate variables capturing ‘positive’ and ‘negative’ realizations of firm performance.<sup>23</sup> We also split firm performance into a firm-specific component and a sector component,<sup>24</sup> resulting in the following six variables:<sup>25</sup>

*Industry-Adjusted Returns*<sup>+(−)</sup> = difference between 1-year stock returns of a given firm and its *Industry Returns*, if positive (negative), zero else;

*Industry Returns* = average 1-year stock returns of firms in a given industry (using the classification in Boardex);

*Industry-Adjusted ROA*<sup>+(−)</sup> = difference between the ROA of a given firm and its *Industry ROA*, if positive (negative), zero else;

*Industry ROA* = average ROA of firms in a given industry.

Note that we include the above variables as determinants of both total *and* cash CEO compensation. While cash bonus contracts are usually written based on accounting

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<sup>23</sup> Previous studies show that CEO cash compensation is less sensitive to “bad news” items—e.g. losses, pension expense—than the corresponding “good news” items—e.g. gains, pension income (Gaver and Gaver, 1998; Comprix and Muller, 2006). More generally, critics of CEO pay practices point to a number of mechanisms that may reduce the sensitivity of pay to poor performance, such special option grants, severance payments, repricing of out-of-the-money stock options and discretionary bonuses (e.g. Bebchuk and Fried, 2004). Hall and Liebman (1998), however, document that the growing use of stock options has significantly strengthened the relation between CEO wealth and negative performance, through the effect of stock price decreases on the value of option *holdings*.

<sup>24</sup> According to standard agency models (e.g. Holmstrom, 1979) it is more efficient for firms to filter common risk out of the measures of executive performance, so that pay will be only tied to controllable factors. However, numerous studies find a positive relation between CEO pay and observable, ‘uncontrollable’ shocks to performance (e.g. Bertrand and Mullainathan, 2001)—often operationalized as sector performance—particularly when these shocks are positive (“pay for luck”, e.g. Garvey and Milbourn, 2006). While some view these findings as evidence of rent extraction, a number of arguments have been provided over time to explain the relation between CEO pay and industry performance (for a summary, see see Core, Guay and Larcker 2003). For example, Oyer (2004) develops a model where it can be optimal to pay CEOs for industry-level performance (“luck”) if industry performance is correlated with the executives’ outside opportunities. Rajgopal, Shevlin and Zamora (2006) find empirical support for Oyer (2004)’s prediction.

<sup>25</sup> We do not split the industry performance measures in positive and negative because there are no industries with negative average ROA and there is only one industry with negative average stock returns in the Post period.

earnings and not explicitly on stock returns (Murphy, 1999), stock returns may proxy for other (omitted) performance measures explicitly used in compensation contracts (individual and non-financial performance measures; e.g. Bushman and Smith, 2001) or implicitly used in determining discretionary bonuses (e.g. Murphy and Oyer, 2003).

Following previous studies, we also control for size, growth options and CEO ownership through the following proxies:

*Ln Sales* = natural log of firm sales.

*Market-to-Book Ratio* = ratio of market to book value of equity.

*CEO Ownership* = percentage of firm equity held by the CEO.

The strong cross-sectional and time-series association between executive pay and size—one of the “best stylized facts” in the executive pay literature (Rosen, 1992)—is consistent with the notion that larger firms are more complex and, thus, require better skilled (and more ‘expensive’) executives.<sup>26</sup> The positive relation between CEO pay and growth options (e.g. Smith and Watts, 1992) has been interpreted as evidence that firms with greater growth options need to attract higher quality managers and tend to make larger use of risky pay (requiring a risk premium in terms of compensation). The negative relation between CEO pay and CEO ownership (e.g. Core, Holthausen and Larcker, 1999) suggests lower need for incentive pay when there is greater alignment of interests through ownership.

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<sup>26</sup> In particular, Gabaix and Landier (2008) develop a simple equilibrium model of CEO pay where CEOs have different talents and are matched to firms in a competitive assignment model and show that, in market equilibrium, a CEO’s pay will depend on both the size of his firm and the aggregate firm size in the market. The empirical calibration of their models shows that the “the sixfold increase of US CEO pay between 1980 and 2003 can be fully attributed to the sixfold increase in market capitalization of large companies during that period”.

To control for any time-specific trends affecting growth in CEO pay (e.g. managerial labor market conditions, market for corporate control), we also include a linear *Trend* variable, equal to the fiscal year (FY) minus 1999 in the Pre period and equal to the FY minus 2002 in the Post period. Finally, we include firm fixed effects to control for omitted firm-specific characteristics that are constant through time, such as firm-specific differences in compensation policies and monitoring technology (e.g. Murphy, 1985).

## **5. Empirical Results**

### *5.1 Descriptive Statistics*

Table 1, Panel A and B, show the trends in the level and composition of CEO compensation over the period from 2000 to 2005 for our sample of UK firms subject to the say on pay rule. Both cash and total CEO pay were relatively flat in the Pre period, and then increased steadily in the Post period (Panel A). This is likely a reflection of the change in the economic environment—the dotcom burst and a stagnant economy in the Pre period, followed by a strong economic recovery in the Post period. Indeed, Table 2 shows that the stock performance of UK firms was significantly better in the Post period (while the accounting performance was similar). Table 1 also reveals that the relative weight of salary decreased in the Post period, while bonus and equity pay increased (see Panel B), though, again, this may be a result of the better economic performance in the Post period. Within equity pay, in the Post period we observe a gradual but substantial shift from stock options to restricted stock, probably in response to the decline of the equity market in 2001-2002 and investors' concerns with option-based compensation after the Enron-type accounting scandals.

Table 3 reports descriptive statistics on the voting outcome in 2003 and 2004 for a constant sample of 245 firms from the FTSE 350. Two insights emerge from these data. First, remuneration reports are generally approved by an overwhelming majority of votes cast. For example, in the proxy season 2003, voting dissent (against plus abstention votes) averaged 14.6%, with only 3 cases where dissent was greater than 50% and about one fourth of the cases where dissent was greater than 20% (a threshold often viewed as an indication of substantial opposition). The low average voting dissent mirrors the equally low average percentage of votes in favor of pay-related shareholder proposals (Thomas and Martin, 1999; Ferri, Ertimur and Muslu) and votes against the approvals of management-sponsored equity incentive plans (Thomas and Martin, XXX) in the U.S. One interpretation is that shareholders generally view compensation arrangements as the result of market forces and tend to protest against them only in extreme cases of abuse and, perhaps, when other available mechanisms do not work. The second insight is that boards clearly do respond to voting dissent. At the 3 firms where in 2003 the degree of dissent was greater than 50%, it dropped from an average of 60.4% in 2003 to an average of 9.5% in 2004. At the 65 firms where in 2003 it was greater than 20%, it dropped from an average of 30.6% in 2003 to an average of 11.6% in 2004. Notably, only 9 of those 65 firms experienced again a dissent greater than 20% in 2004.

To shed light on how firms manage to reduce voting dissent, in Table 4, column (i) we analyze the changes to compensation policies made during 2003 (*after* the vote) by the 30 firms with the highest voting dissent against the FY 2002 remuneration report. Three insights emerge from the analysis. First, a significant number of changes appear directed at removing or modifying provisions that increase the likelihood of pay for

failure. Strikingly, ten of the twelve firms with a notice period greater than 12 months (usually 24 months) reduced it to 12 months, implying a lower severance payment. Six of the twelve firms allowing retesting eliminated (4) or shortened (2) the retesting provision. Six firms imposed tougher performance targets in the vesting conditions of their equity plan (e.g. requiring higher EPS growth for stock options to vest), while three firms replaced the FTSE 100 (perceived as an ‘easy’ benchmark by investors) with a global or local industry index as comparator group used in their performance-based restricted stock plan. The second insight is a general shift from stock options to restricted stock (consistent with the evidence in Table 1), through a change in the pay mix or the complete replacement of option plans with restricted stock plans. At the same time, almost one third of the firm took initiatives to encourage executives’ ownership (e.g. minimum ownership requirements, programs to offer shares in lieu of cash bonuses, mandatory holding periods for shares obtained from option exercises, etc.). The third insight is that a number of firms responded to the voting dissent by hiring a new compensation consultant to perform an independent review or by establishing a formal consultation with major shareholders (or both). Notably, about one fourth of the firms explicitly describe the above changes as the result of their consultation with shareholders, particularly in the case of those pay-for-failure provisions discussed above (see Appendix 1 for examples).

The fact that firms manage to reduce potential voting dissent by consulting and negotiating with shareholders ahead of the next vote also implies that the low dissent in the first year under say on pay may be partly due to actions taken by firms *ahead* of the annual meeting to prevent an adverse voting outcome. We provide some evidence on this

issue in Table 4, column (ii), where we summarize changes to compensation policies made during 2002 (i.e. *before* the vote) by 30 firms subsequently receiving low voting dissent against their FY 2002 remuneration report. While somewhat lower relative to the high voting dissent group, the overall frequency of changes in ‘pay-for-failure provisions (particularly for severance contracts and retesting) and the number of firms consulting with shareholders (and linking those changes to the consultation process) is still substantial.<sup>27</sup> It is also noteworthy the high frequency (14 out of 30) of firms hiring a compensation consultant to perform an independent review, perhaps to ensure compliance with best practices and improve disclosure ahead of the annual meeting. While descriptive, this evidence suggests that an exclusive focus on firms with high *realized* voting dissent may understate the impact of the legislation, which may have affected also firms with high *expected* voting dissent. For this reason, we initially focus our empirical analysis on the full sample of UK firms subject to say on pay.

## 5.2 Multivariate Results

### 5.2.1 The impact of say on pay on CEO Compensation

Table 5 provides the results of the analysis of the determinants of the level of CEO compensation in the Pre and Post period. Our main focus is on the test for differences in coefficients across the two periods (‘Difference Post-Pre’ column).

The analysis of CEO cash compensation (Panel A) yields two main insights. First, there is a marked increase in the sensitivity of CEO cash pay to poor performance after the introduction of the DDR. In particular, the coefficients on *Industry-Adjusted ROA*<sup>-</sup> and *Industry-Adjusted Returns*<sup>-</sup>—both negative and insignificant in the Pre period—

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<sup>27</sup> Presumably a significant fraction of firms with low voting dissent simply did not have controversial compensation practices and thus did not have to make significant changes to win shareholder support at the annual meeting.

become significant and positive in the Post period, and the increase in the coefficients is statistically significant. One interpretation of this finding is that CEO cash pay was insured against negative outcomes in the Pre period and the introduction of say on pay led to higher accountability for poor performance—consistent with calls for less “rewards for failure”. Second, there does not appear to be a systematic shift in the level and growth rate of CEO cash pay after the introduction of say on pay. The coefficient on the *Post Period* indicator is insignificant and the coefficient on *Trend*—while significantly positive in both periods (reflecting a general increase in CEO cash pay over time)—does not change significantly different in the Post period.<sup>28</sup>

These findings are confirmed in the analysis of CEO total compensation (Panel B). Again, there appears to be a significant increase in the sensitivity of CEO pay to poor operating and stock performance, while the coefficients on *Post Period* and *Trend* do not indicate any significant change in level and growth rate across the two periods.<sup>29</sup>

We perform a number of robustness tests (unreported). First, we restrict the analysis to firms with relevant data in at least two (rather than one) years in both the Pre and Post period (resulting in an 11% drop in sample size). Second, we remove the observations for 2002, to allow for the possibility that some firms may have adjusted their compensation packages already in 2002 in response to the announcement of the upcoming legislation. Third, we compute standard errors clustered by industry rather than by firm. Industry effects are a major determinant of executive pay (Karuna, 2007) and it

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<sup>28</sup> In both the Pre and Post period, as expected and consistent with prior studies, CEO cash pay shows a significantly positive association with size (*Ln Sales*), positive operating performance (*Industry-Adjusted ROA<sup>+</sup>*) and growth options (*Market-to-Book ratio*). CEO cash pay is also positively related to *Industry ROA* and (only in the Post Period) *Industry Returns*.

<sup>29</sup> In both the Pre and Post period, CEO total pay shows a significantly positive association with size (*Ln Sales*), positive stock and operating performance (*Industry-Adjusted ROA<sup>+</sup>* and *Industry-Adjusted Returns<sup>+</sup>*) and *Industry Returns*. As for CEO cash pay, the *Trend* variable is significant in both periods.

is possible that variation in the response to say on pay occurred at the industry level rather than the firm level.<sup>30</sup> Under all these alternative specifications, the key finding of Table 5—a significant increase in the sensitivity of CEO pay to poor performance after the introduction of say on pay—remains unchanged.

### *5.2.2 Is the impact of say on pay more pronounced in firms with controversial CEO pay practices?*

In this section, we examine whether the impact of say on pay on the sensitivity of CEO pay to its economic determinants is different for firms with controversial CEO pay practices in the Pre period. To identify such firms, we use two proxies. The first is the degree of voting dissent against the remuneration report in the 2003 proxy season (the first under the say on pay rule). Carter and Zamora (2009) show that voting dissent is higher in firms with higher salaries, weaker pay-for-performance sensitivity in bonus pay and greater potential dilution in equity pay. Anecdotal evidence also suggests that voting dissent is higher in firms with controversial features in CEO contracts (e.g. re-testing of performance conditions in equity grants; Sheehan, 2007). The second proxy is a regression-based measure of ‘excessive’ CEO pay in the Pre period. This measure has been shown to be associated with weaker governance structure and worse future performance (Core, Holthausen and Larcker, 1999).

To explore the effect of the voting outcome, we construct an indicator variable *High (Low) Voting Dissent* equal to 1 for firms where the sum of ‘against’ and ‘abstention’ votes was greater (smaller) than 20% of the votes cast in the 2003 proxy

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<sup>30</sup> The results are unchanged also if we cluster by firm-period (where the periods are the Pre and Post periods), following Chhaochharia and Grinstein (2009), who also study the impact of a regulatory event (board independence changes mandated by the Sarbanes Oxley Act) on CEO pay.



season,<sup>31</sup> resulting in about one-fourth of the firms being classified as *High Dissent* firms.

Then, we modify Equation (1) as follows:

$$\begin{aligned}
 \text{CEO Compensation} &= \text{Low Voting Dissent} * [\text{Pre Period} * (\sum_{j=1}^{10} \alpha_j * \\
 &\text{Pay Determinants}_j) + \text{Post Period} * (\beta_0 + \sum_{j=1}^{10} \beta_j * \text{Pay Determinants}_j)] + \text{High} \\
 &\text{Voting Dissent} * [\text{Pre Period} * (\sum_{j=1}^{10} \alpha_j * \text{Pay Determinants}_j) + \text{Post Period} * (\beta_0 + \\
 &\sum_{j=1}^{10} \beta_j * \text{Pay Determinants}_j)] + \text{Firm Fixed Effects} + \varepsilon. \quad [2]
 \end{aligned}$$

Equation (2) effectively represents now the stacking of four regressions, two for the *High Voting Dissent* firms (one for the Pre and one for the Post period) and two for the *Low Voting Dissent* firms. Stacking the regressions enables us to test not only for changes in the coefficients across the two periods, but, most importantly, to test whether such changes differ significantly across the different sub-samples, essentially resulting in a ‘difference-in-difference’ test.

As shown in Table 6, in the CEO cash compensation regression (Panel A) we find a positive and significant increase in the coefficient on *Industry-Adjusted ROA* only in the *High Voting Dissent* sub-sample and the increase is significantly higher than for the *Low Voting Dissent* group (‘Difference in Difference’ column). Noticeably, the magnitude of the increase in the coefficient is much larger than in the overall sample reported in Table 5. Similar results occur when the dependent variable is CEO total compensation (Panel B, where we report only the ‘Difference in Difference’ test to preserve space). However, in both panels, the degree of voting dissent does not seem to

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<sup>31</sup> According to Manifest, a proxy voting service in the UK, when casting an “abstention” vote investors express dissent from the remuneration report (albeit less than through an against vote). We choose 20% dissent because it is considered a high level of dissent by activists and proxy voting services (the mean voting dissent in 2003 is 14.6%, see Table 3). Note that the sample used for this test is smaller than the overall sample of UK firms used in Table 4 because we obtained voting data only for firms in the FTSE 350 index.

affect the change in the sensitivity of CEO pay to *Industry-Adjusted Returns* or any of the other determinants.

To test whether say on pay had a different effect on firms with excessive CEO pay in the Pre period, we proceed as follows: i) we run the regression in Equation (1) over the Pre period, using the natural log of total compensation as dependent variable;<sup>32</sup> ii) for each firm, we compute an average residual over the Pre period (i.e. across the yearly residuals); iii) we construct an indicator variable, *Excess (No Excess) CEO Pay*, equal to 1 for firms with an average residual value in the top 25% (bottom 75%) of the distribution, and 0 otherwise; and iv) we use these indicator variables in Equation 2.

Table 7 presents the results. While there is an increase in the sensitivity of CEO cash pay to *Industry-Adjusted ROA* between the Pre and Post period in both subsamples, the increase is significant only for the *Excess CEO Pay* firms (see ‘Difference Post – Pre’ columns).<sup>33</sup> More importantly, the increase is significantly larger for the *Excess CEO Pay* firms (see ‘Difference in Difference’ column). Instead, the sensitivity of CEO cash pay to *Industry-Adjusted Returns*, while higher in the Post period for both groups, does not appear to experience a greater increase in *Excess CEO Pay* firms. The results are qualitatively similar in Panel B, where there is also some evidence of a greater increase in sensitivity of CEO total pay to *Industry-Adjusted Returns* in *Excess CEO Pay* firms (p-value=0.11, ‘Difference in Difference’ test).

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<sup>32</sup> We include industry effects rather than fixed effects since fixed effects may (also) capture firms’ propensity to over-pay and their inclusion may reduce our ability to capture ‘excessive’ pay through the regression residual.

<sup>33</sup> Since our definition of *Excess CEO Pay* firms is based on residuals from a regression of CEO pay on all determinants, a firm can be classified as having *Excess CEO Pay* for a number of reasons (e.g. ‘excessive’ pay-to-size sensitivity, etc). Panel A shows that in the Pre period the coefficient on *Industry-Adjusted ROA* for *Excess CEO Pay* firms is significantly *negative*, suggesting that a form of “reward for poor performance” was (at least) one reason for their classification as *Excess CEO Pay* firms.

The evidence in Table 6 and 7 raises the question of whether our proxies for voting dissent and excessive pay are capturing the same construct. This does not appear the case, since the correlation between *High Voting Dissent* and *Excess CEO Pay* is only 0.148 (p-value<0.001), consistent with the notion that voting dissent captures aspects of pay (e.g. severance terms, forward looking changes to CEO pay) not necessarily reflected in realized CEO total direct pay. Notably, in untabulated tests we repeat the analysis in Table 7 for the sub-sample of *Low Voting Dissent* firms and still find a higher increase in sensitivity of CEO pay to poor operating performance in *Excess CEO Pay* firms. This result has an important implication, in that it suggests that an advisory shareholder vote may affect CEO pay not only ex post (through firms' response to high voting dissent) but also ex ante, through the *threat* of high voting dissent (in other words, *Excess CEO Pay* firms may be viewed as a proxy for firms that would have faced high voting dissent had they not adjusted their CEO pay contracts to avoid it). Hence, focusing only on the effect of realized voting outcome on CEO pay is likely to understate the true effect of advisory votes. This is consistent with anecdotal evidence of consultation with institutional investors *ahead* of the annual meeting (see Appendix 1 and Table 4).<sup>34</sup>

The result in Table 7 also raises the question of whether the effect of say on pay is really more pronounced for *Excess CEO Pay* firms, or more generally for firms with 'high' levels of pay. In other words, is the say on pay vote used by investors as a 'hatchet' to go after firms with high levels of CEO pay, even when justified by economic considerations? Or is it used as a 'scalpel' to identify and correct those cases where CEO pay appears abnormal? To shed light on this question, we construct an indicator, *High*

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<sup>34</sup> This may explain also why Sheehan (2007) finds a similar frequency of explicit changes to compensation contracts in firms with high and low voting dissent.

*(Low) Total CEO Pay*, equal to 1 for firms with an average value of CEO total pay in the Pre period in the top 25% (bottom 75%) of the distribution, and 0 otherwise. Then, we include these two indicators in Equation 2 and re-run the test.

As shown in Table 8, we do not find a greater increase in the sensitivity of CEO pay to poor performance in *High Total CEO Pay* firms (see ‘Difference in Difference’ column). Indeed, the coefficients on *Industry-Adjusted ROA* and *Industry-Adjusted Returns* increase in the Post period only for *Low Total CEO Pay* firms.

Combined, Table 7 and 8 suggest that shareholders use the power of the say on pay vote to pressure firms to reform CEO pay practices only when the level of CEO pay is higher than justified by performance and other economic determinants.

### 5.2.3 *Is the impact of say on pay a function of the level of monitoring in place?*

In this section, we examine whether the change in sensitivity of CEO pay to its economic determinants after the introduction of say on pay depends on the level of monitoring already in place.

As proxies for monitoring, we look at concentration of institutional ownership (percentage of equity collectively held by institutional investors owning more than 3% of equity), board independence (percentage of independent directors sitting on the board) and firms size (level of sales). Prior studies show that higher institutional ownership concentration and greater board independence result in higher monitoring of executive compensation practices (e.g. Core, Holthausen and Larcker, 1999; Hartzell and Starks, 2003; Chhaochharia and Grinstein, 2009). External scrutiny and political costs have long been recognized to increase with the size of the firm (e.g. Watts and Zimmerman, 1986).

For each of these variables, we create two indicator variables denoting, respectively, firms above and below the sample median as of the end of 2002. For example, *Large (Small) Firms* is equal to 1 for firms with sales above (below) the sample median in 2002 and 0 otherwise. We then re-run the regression in Equation 2 using these indicator variables.

The results are reported in Table 9, 10 and 11. Overall, it appears that the increased sensitivity to (cash and total) CEO pay to poor performance documented in Table 5 occurs in both firms with lower monitoring and firms with higher monitoring, across our three proxies (see Difference Post - Pre' column). Most importantly, though, the increase does not differ significantly based on the level of monitoring (see 'Difference in Difference' column). The test does not provide clear support for the view of say on pay as substitute or complementary mechanism, suggesting that its interaction with other monitoring mechanisms may be more nuanced.

### *5.3 Alternative explanations*

#### *5.3.1 The effect of contemporaneous changes in the UK governance environment*

A major challenge in studies focused on regulatory events is to attribute the documented effects to the event of interest—the introduction of say on pay—rather than to other events occurring around the same time.

To account for the effect of country-level changes affecting all UK firms (e.g. other governance reforms, trends in the managerial labor market in the UK), we employ a control sample of UK firms traded on the Alternative Investment Market (AIM), and, thus, not subject to the say on pay legislation (see Section 2). In particular, we construct an indicator variable *AIM Firms* equal to 1 for firms traded on the AIM (and 0 otherwise)

and an indicator variable *Non-AIM UK Firms* equal to 1 for UK firms traded on the major exchanges and subject to say on pay (and 0 otherwise). Then, we include these two indicators in Equation (2) and re-run the analyses.

As shown in Table 12, it appears that the increase in pay to poor performance documented in Table 5 only occurred for UK firms subject to say on pay, though the ‘Difference in Difference test’ is only weakly significant for *Industry-Adjusted Returns*.<sup>35</sup> There are a number of caveats in interpreting this test. AIM firms are significantly smaller and have weaker governance structures than their counterparts traded on major exchanges, raising the question of whether a difference-in-difference test is informative. Besides, the sample of AIM firms with available data is fairly small (70 firms) and the analysis may lack power. Indeed, few variables are significant in the Pre and Post period (see Panel A), though the direction and magnitude of the coefficients on the key variables (*Ln Sales*, *Industry-Adjusted ROA+*) is in line with the results for the non-AIM UK sample. In spite of these limitations, overall the test does not suggest that our results are driven by other contemporaneous changes affecting all UK firms.

Since our evidence of increased sensitivity of CEO pay to poor performance is driven by firms with controversial CEO pay practices (Section 5.2.2), of particular concern are concurrent events related to executive pay. Two significant initiatives related to executive pay took place around the same time as the say on pay legislation. In December 2002, two of the most influential institutional investor groups in the UK—the National Association of Pension Funds (NAPF) and the Association of British Insurers

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<sup>35</sup> The weaker result may be due to the fact that some firms traded on the AIM exchange chose to voluntarily comply with the DRR regulations. More generally, any change in compensation practices due to the “say on pay” rule might have influenced AIM firms as well, due to their need to be competitive in the managerial labor market or an imminent plan to list on non-AIM exchanges. These factors bias against finding any difference between AIM firms and firms not traded on AIM.

(ABI)—released a handbook of “best practice” guidelines on executive pay to provide firms and shareholders with guidelines on how to design and assess remuneration packages in view of the say on pay legislation. However, the handbook largely summarized executive pay principles already codified in previous reports and seems unlikely to be causing our findings.

The other important event was the “Rewards for Failure” report released in June 2003 by the UK government in response to some highly publicized cases of large severance payments (DTI, 2003). The report may have played a role in causing UK firms to adopt shorter notice periods (and thus lower severance), but it is not likely to explain our findings on changes in the sensitivity of CEO pay (which does *not* include severance payments) to performance. Indeed, the fact that changes in severance provisions may not be due the say on pay legislation provides further motivation to study the ordinary elements of CEO pay.

Overall, while we cannot completely rule out the possibility that concurrent events affect our findings, the AIM test and the analysis of these events alleviates this concern.

### *5.3.2 The effect of contemporaneous changes in mandated disclosures on executive pay*

As mentioned in Section 2, the DRR also mandated enhanced compensation disclosures with respect to executives’ severance contracts, use of remuneration consultants and future remuneration policy (see Appendix 2 for details). This raises the possibility that our findings are driven by the additional disclosures.<sup>36</sup> However, a

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<sup>36</sup> This issue has significant implications for the generalizability of the findings to other countries. For example, opponents of “say on pay” in the US have argued that it would be redundant in view of the new executive pay disclosures mandated in 2006 by the Securities Exchange Commission (Executive Office of the President, 2007; Kaplan 2007). Others, however, have argued that, without stronger shareholder rights,

number of factors make this alternative explanation unlikely. First, the direction and nature of the effect (if any) of enhanced disclosure on the sensitivity of CEO pay to performance is not clear.<sup>37</sup> Second, the additional disclosures mandated by the DRR appear quite minimal relative to pre-existing disclosure requirements and the ‘best practice’ disclosures recommended by the UK Combined Code (see Appendix 2; Baird and Stowasser, 2002). Third, the additional disclosures mostly concerned termination payments and pensions. Thus, it seems unlikely that they caused our findings, particularly with respect to CEO cash pay. Fourth, and perhaps most importantly, according to a survey, most UK institutional investors explicitly attribute the changes in CEO pay practices observed subsequent to the introduction DRR to the advisory shareholder vote rather than the disclosure component (Deloitte 2004).

### *5.3.3 Alternative explanations for the higher sensitivity of CEO pay to Industry-Adjusted ROA*

The nature of *Industry-Adjusted ROA* may differ between the Pre and Post periods. In the Pre period (declining economy), low or negative realizations of ROA are more likely to reflect restructuring, impairment and other one-time charges “optimally” excluded from the compensation contract, while in the Post period (robust economy) they are more likely to reflect actual realizations of poor, recurring operating performance, “optimally” penalized in terms of lower pay. Such a pattern would explain the greater sensitivity of CEO pay to *Industry-Adjusted ROA* in the Post period. To account for this possibility, in untabulated tests we replace operating income with cash flow from

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more disclosure is (a necessary but) not a sufficient condition for greater shareholder involvement in the executive pay setting process (Bebchuk, 2007).

<sup>37</sup> Most studies focus on the effect of greater disclosures on the *level* of pay. Even with respect to the level of pay, it has been argued that more disclosure may actually lead to an *increase* in pay, through a ratcheting process that has been likened to Garrison Keillor’s fable of “Lake Wobegon”.



operations as numerator in the definition of ROA, since cash flow from operations is generally not affected by special items and restructuring charges. The coefficient on *Industry-Adjusted ROA* continues to exhibit a significant increase in the Post period.<sup>38</sup> Also, note that if our result had been driven by the change in the nature of ROA over time it would not be clear why it would be more pronounced in firms with high voting dissent and excessive CEO pay and why it would not occur in AIM firms.

#### *5.4 Policy-making implications: caveats*

Similar to other empirical studies on regulation, our goal is to inform the policy-making debate rather than provide normative recommendations. In assessing the evidence from the UK, policy-makers in other countries should reflect on a number of factors not addressed in our study.

First of all, a set of well-established best practices—a key feature of the UK governance system—, detailed disclosure requirements on executive pay, an active financial press, a well developed director labor market and significant shareholder powers in electing directors may be necessary prerequisites for the documented effects of “say on pay”. Codified best-practices provide firms and shareholders with a clear benchmark against which to make assessments of pay practices and high-quality disclosures are necessary to make such assessments. Media coverage, a deep director labor market and, most importantly, strong shareholder power in directors’ election will strengthen

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<sup>38</sup> Another possibility is that the optimal coefficient on *Industry-Adjusted ROA* is close to zero at extremely low realizations of *Industry-Adjusted ROA* and positive at intermediate and moderately low levels. If so, our findings may simply reflect a different range of values for *Industry-Adjusted ROA* between the two periods (due to the different economic environment). However, Table 2, Panel A, shows that the distribution of Negative ROA is similar across the two periods. Also, the results are unchanged if we exclude the bottom 1% observations of *Industry-Adjusted ROA*.

directors' reputational incentives associated with adverse shareholder votes.<sup>39</sup> Second, policy-makers need to assess the merits of “say on pay” vis-a-vis alternative mechanisms. For example, in the US the ownership threshold for submitting pay-related proposals for a vote at the annual meeting are minimal relative to the UK and the use of these proposals has increased in recent years (Ertimur, Ferri and Muslu, 2008). Third, the intended goal of “say on pay” in other countries may be different (e.g. reduce levels of pay) and so may be its effectiveness with respect to such goal. Finally, our study does not consider potential side effects of “say on pay”.<sup>40</sup>

## 6. Conclusion

CEO pay has become a major concern for institutional investors, both in the US and internationally (e.g., Watson Wyatt Worldwide 2006). In response to these concerns academics, practitioners, and regulators have advocated various reforms. A mechanism that has received considerable attention is the annual advisory shareholder vote on the compensation committee report (“say on pay” vote) introduced through legislation in the UK in 2002 (Directors’ Remuneration Report Regulations, DRR).

In this study, we examine the effect of the say on pay legislation in a large sample of UK firms by comparing the determinants of CEO pay before (2000-2002) and after (2003-2005) its introduction. We find no evidence of a change in the level and growth rate of CEO pay, *after* controlling for firm performance and other determinants of CEO pay—consistent with levels and growth of CEO pay being mostly the result of market

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<sup>39</sup> In the UK, shareholders owning at least 5% of the voting rights have the power to nominate their candidates to the board and ask for the removal of incumbent directors. This power may increase the effectiveness of advisory votes such as the say on pay vote.

<sup>40</sup> Supporters of say on pay in the US often note that greater communication between firms and shareholders on executive pay may spill over to other corporate decisions and strengthen investors’ confidence in the financial markets (Ferlauto, 2007). Critics have argued that greater uncertainty of CEO pay under a say on pay regime may reduce the supply of managerial talent to publicly traded firms.

forces. However, consistent with calls for less “rewards for failure” that led to introduction of say on pay, we find an increase in the sensitivity of CEO pay to poor performance, particularly in firms with controversial CEO pay practices.

While the interpretation and policy-making implications of our findings are subject to a number of caveats, our study may inform the regulatory and academic debate on the merits of greater shareholder voice in the CEO pay setting process. It also extends the literature on the role of institutional investors and shareholder activists in CEO pay design and on the effect of regulatory intervention on CEO pay, as well as a growing body of research on the role of shareholder votes in corporate governance.

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## **Appendix 1 Examples of changes in compensation policies in response to shareholder pressure**

### **Consultation/communication with shareholders**

“The remuneration policy set out in this report was finalised after undertaking an extensive consultation process with shareholders and institutional bodies during the course of 2003. During the year the Chairman of GlaxoSmithKline and the Chairman of the Committee met shareholders, representing nearly half of GlaxoSmithKline's share capital...as a result [the Committee] has instigated a major shift in the way GlaxoSmithKline sets the remuneration of its most senior executives... Any significant changes in the measures used to assess performance will be discussed with shareholders...” *GlaxoSmithKline, FY 2003, Annual Report*

“We have recently consulted the Company's principal shareholders on the detailed terms of the new share arrangements and the overall remuneration policy...Following completion of this consultation process, the majority of shareholders of the Company (by percentage holding) have indicated to the Company that they are supportive of the proposals contained in this circular.” *Alphameric 1 March 2004 Circular*

“This [new] policy was formulated by the Remuneration Committee in response to concerns raised by shareholders at the 2003 AGM and was only finalised after extensive consultation with the Company's major shareholders and institutional shareholder bodies, such as the ABI, NAPF and PIRC. *Berkeley Group Holdings, FY 2003, Annual Report*

“The Remuneration Committee carried out a comprehensive review of its executive compensation arrangements with its retained consultants, Halliwell Consulting...The Remuneration Committee, while noting that there was no obligation by the Company to consult with shareholders on the proposals arising from the review, endorses current corporate governance best practice and therefore chose to consult with shareholders in advance on the proposals. This consultation was extensive involving the Company's major shareholders at that time and the main shareholder representative bodies the ABI and NAPF...“In light of the Remuneration Committee's desire to have full shareholder support for a new Executive remuneration policy for 2005/2006 a number of amendments to the original proposals were made to address shareholders' views coming out of the consultation process”. *Punch Tavern, Annual Report, FY 2004*

“As part of its continued review of executive remuneration policy...the Chairman consulted a number of the Company's principal institutional shareholders and other major institutional bodies regarding its executive remuneration arrangements. *International Power, Annual Report, FY 2003*

“The chairman of the company and the chairman of the remuneration committee are available to shareholders to discuss remuneration policy.” *Brammer, Annual Report, FY 2004*

“The Committee has established a policy that it believes is balanced whereby Executive Directors can receive an annual grant of options of up to one times base salary per annum (granted in two half-yearly tranches) and an annual grant of performance shares of up to one times base salary per annum. The Committee intends to consult leading institutional shareholders should it wish to alter this policy in future to allow additional grants to be made.” *Acambis, Annual Report, FY 2002*

“On 10 November 2003 the Company announced that it would instigate a review of its remuneration policy. To assist the Remuneration Committee in this review, it appointed Towers Perrin, an independent firm of remuneration consultants who have provided no other services to the company...This review has involved communicating with representatives of the Company's leading investors and seeking their views on all aspects of remuneration. Having considered these views, the Company has implemented a number of changes that are described below...The Chairman of the Remuneration Committee will always be available to hear investors' views on remuneration matters and can be contacted via the Company Secretary.” *Freeport, FY 2003, Annual Report*

### **Reduction in notice periods to 12 months (1-year severance)**

“Dr Garnier and Mr Coombe have agreed to changes in their own contractual terms without compensation to come broadly in line with the new contractual framework, including the reduction of contractual notice period from 24 to 12 calendar months.” *GlaxoSmithKline, FY 2003, Annual Report*

“During the period, as requested by some shareholders, Stephen Thomas and the Company agreed an amendment to his contract to reduce the notice period to 12 months.” (31) *Luminar plc, Annual Report, Fiscal Year (FY) 2003*

“Shareholders should note that...the executive directors have agreed to reduce the notice periods of their contracts to twelve months”. *Whitbread, FY 2003, Annual Report*

“To reflect current market practice, Lord Browne has agreed to reduce the notice period in his contract to one year and it has been amended to reflect this. All executive directors' service contracts now either expire this year or can be terminated on one year's notice.” *BP, Annual Report, FY 2002*

The Committee has made some policy changes to its executive Director contracts of employment following consultation with some of the Company's major shareholders in 2003” *Shire Pharmaceuticals Group, FY 2003, Annual Report*

### **Reduction/elimination of re-testing provisions from performance-based equity plans**

“...The Remuneration Committee has taken into account the wishes of shareholders and this option to the Group Managing Director will not allow re-testing of the performance target.” *Berkeley Group Holdings, FY 2003, Annual Report*

“The Remuneration Committee, after consultation with some of its major institutional shareholders in 2003, has decided that, for options granted under the scheme from 2004 onwards, the performance condition should be retested once only, at five years after the grant...Any new option scheme established in the future will not contain a retesting feature.” *Shire Pharmaceuticals Group, FY 2003, Annual Report*

“Shareholders should note that... the Remuneration Committee has endorsed the policy that performance conditions applying to executive share options should not be subject to retesting” *Whitbread, FY 2003, Annual Report*

“Shareholders' views of the appropriateness of the re-testing of performance under the Executive Share Option Plan...have evolved since the plan was approved by shareholders in 2001. The Committee is aware of these views and has considered whether the policy of allowing two re-testing opportunities for future grants of options should continue to be provided...The conclusion of the review was that for grants made in 2004, one re-test only will be allowed at the end of year five against the full period since grant. A further review of the policy relating to re-tests will take place prior to any grant of options in 2005.” *Bae Systems, FY 2003, Annual Report*

“The Remuneration Committee has taken account of current market practice with regard to the re-testing of options and has decided to withdraw re-testing for all future grants within the existing scheme.” *FKI, Annual Report, FY 2003*

“In line with company policy, extensive consultation took place with the company's principal shareholders...as well as institutional investor bodies. Taking on board views expressed during the consultation process, a number of modifications were made to the application of the Executive Share Option Plan and the Performance Share Plan.” *Bae Systems, FY 2003, Annual Report*

### **Choice of comparator group**

“Following consultation with principal shareholders and institutional investor bodies in 2003, conditional awards were granted to executive directors under the Performance Share Plan for which the eventual quantum capable of exercise will be determined by a TSR ranking relative to a comparator group of 18 other defense and aerospace companies operating in the international arena...Use of a sectoral comparator group was considered by our principal shareholders and institutional investor bodies to be more appropriate than using the FTSE 100 as had been the case historically with awards under this plan.” *Bae Systems, FY 2003, Annual Report*

“Comparative performance was previously measured by reference to the FTSE 100 but the Committee concluded that the measurement of performance against the performance comparator group of pharmaceutical companies...would provide a better assessment of the company's performance.” *GlaxoSmithKline, FY 2003, Annual Report*

### **Choice of performance measures/targets**

“In determining the performance measure for the Executive Share Option Plan, the Committee took the view that our major investors believe EPS to be a key indicator of long-term financial performance...” *Bae Systems, FY 2003, Annual Report*

“Prior to 2003...in order for the options to vest in full, EPS growth had on average to be at least 3 percentage points per annum more than the increase in the UK Retail Prices Index (RPI) over any 3-year performance period. For the 2003 grant, vesting increases on a straight line basis for EPS performance between the hurdles set out in the table below.

<i>Annualized growth in EPS</i>	<i>Percentage of award vesting</i>
>RPI+5%	100%
RPI+4%	75%
RPI+3%	50%
<RIP + 3%	0%

This performance condition is substantially consistent with UK shareholder guidelines and expectations and is considerably more demanding than any operated by other global pharmaceutical companies. This *GlaxoSmithKline, FY 2003, Annual Report*

“The Committee...has concluded, after consulting with certain institutional investors, and taking advice from its independent advisers, that a combination of total shareholder return ("TSR") and earnings per share ("EPS") are the most appropriate measures at the current stage of the Company's development.” *MFI (Galiform), FY 2004, Annual Report*

“In recognition of our principal shareholders' and institutional investor bodies' requirement to retain a secondary financial measure (which was previously EPS), release of the awards will also be conditional on the Committee being satisfied that there is a sustained improvement in the company's underlying financial performance. [For this purpose] the Committee may consider (but not exclusively)...net debt/cash, PBIT, order book, turnover, risk, and underlying project performance” *Bae Systems, FY 2003, Annual Report*

### **Change in the bonus plan / Approval of new bonus plan**

“To date the maximum bonus potential for Executives has been uncapped. However, the Remuneration Committee has taken into account the concerns of shareholders regarding the uncapped nature of the Executive bonus arrangements and has decided to alter the structure of the bonus to reflect these concerns (further details of the new structure are set out below). In anticipation of the future change in policy, the Executives agreed to the introduction of a retrospective cap on bonuses for the current bonus year (1 May 2003 - 30 April 2004) of 300% of salary. However, for the year ended 30 April 2004, where the Remuneration Committee did in fact determine a bonus greater than 200% of salary for the Group Managing Director and the Group Finance Director, they decided of their own volition to cap the bonus payment at 200% of salary.” *Berkeley Group Holdings, FY 2003, Annual Report*

“Arising from the remuneration review, the Remuneration Committee has redesigned the annual bonus scheme. Bonuses for executive directors will in future be based on the out-

turn in the Group's profits compared to the budgeted profits approved by the Board at the beginning of the financial year. This replaces the FTSE 100 share index multiplier approach adopted in the past which was criticised during the review process.” *Freeport, FY 2003, Annual Report*

“Following consultation with some of its major shareholders and the subsequent revision of the design of the Plan, the Company asked shareholders in 2003 to approve a Deferred Bonus Plan...This Plan provides for participants to use up to 50% of their annual bonus to buy shares in the company. The company will match any shares bought, but the matched shares will vest for executive directors only if the company’s EPS grows more than 15% in excess of RPI over a 3-year period” *Shire Pharmaceuticals Group, FY 2003, Annual Report*

### **Approval of new long term incentive plans**

“Following consultation with a number of the Company's larger institutional investors, a Long-Term Incentive Plan for the Chief Executive was approved at the Annual General Meeting in 2002 with performance criteria which had been selected by the Committee as being appropriately challenging.” *Alpha Airports Group, FY 2002, Annual Report*

“During the period ended 29 February 2004, and following consultation with the major shareholders, the Company asked the shareholders to approve a long-term incentive plan for Executive Directors, called the Deferred Bonus Plan. The shareholders approved this on 24 February 2004.” *Luminar plc, Annual Report, Fiscal Year (FY) 2003*

“The 2004 LTIP was approved by shareholders at the EGM on 24 February 2004. Prior to the EGM, the Company conducted a full consultation with major shareholders and shareholder bodies which ensured that the terms of the Plan were acceptable to the majority of shareholders by percentage holding and complied with corporate governance best practice.” *Berkeley Group Holdings, FY 2003, Annual Report*

### **Approval of specific awards**

“...the Committee has, following extensive consultation with major institutional investors, made an award over £400,000 and 240,000 ordinary shares of 2p each” *Chrysalis Group, Annual Report, FY 2002*

“We have recently consulted the Company's principal shareholders on the detailed terms of the new share Arrangements” *BP, Annual Report, FY 2002*

### **Hiring of (additional) compensation consultant for a review of pay practices**

“...Towers Perrin...provides strategic advice on general remuneration and benefit planning...[in 2003] the Committee appointed Deloitte & Touche LLP to conduct a comprehensive review of executives’ remuneration at GlaxoSmithKline...Deloitte’s independent review produced the following key findings...” *GlaxoSmithKline, Annual Report, FY 2003*

## Appendix 2: Executive Compensation Disclosure Requirements in UK

	<b>Remuneration-related disclosure requirements under the Director Remuneration Report Regulations</b>	<b>Remuneration-related disclosures already required under the UKLA Listing Rule 12.43A*</b>
<b>Auditable Information**</b>	Emoluments and Compensation: salary, annual bonuses, termination payments, non-cash benefits	Similar to DRR, except that DRR also requires disclosure of termination payments
	Stock Options: <ul style="list-style-type: none"> <li>- Number of options outstanding at the beginning and the end of the fiscal year, with details about new grants, cancellations, modifications, expirations and exercises occurring during the year.</li> <li>- Exercise price, vesting date and maturity for any option award still outstanding at the end of the year.</li> <li>- Market price at exercise date for any option exercised during the year.</li> <li>- Performance criteria upon which the award or exercise is contingent upon.</li> <li>- The above data need to be provided separately for options with different terms and conditions.</li> </ul>	Broadly similar to DRR, except that DRR requires more detailed information.
	Long-term incentive schemes: <ul style="list-style-type: none"> <li>- Similar to stock options disclosures</li> <li>- Requirement to disclose the value of money or assets receivable for schemes that have vested.</li> </ul>	Broadly similar to DRR, except that DRR requires more detailed information.
	Pension and retirement benefits: accrued benefits at the end of the year and changes during the year.	Not required.
	Above information also for non-executive directors	Not required
<b>Non-Auditable Information</b>	Names of members of Remuneration Committee	Same as DRR
	Details of any advisors to the Remuneration Committee, their connection with the company (e.g. other services provided) and description of who appointed them.	Not required.
	Details of executives' service contracts: duration of contracts, notice periods, termination payments, etc.	Not required
	Stock returns performance graph for past five years relative to a broad equity market index	Not required
	Company's policy on remuneration for the subsequent years: including: i) explanation of the performance conditions (or lack thereof) attached to the long term incentives schemes and the stock options; ii) rationale for the performance conditions chosen (or for their absence) and for any planned amendment, iii) details on use of external benchmarks (e.g. peer groups), iv) policy on duration of contracts and termination payments.	Not required

Source: prepared by authors.

\* UKLA: United Kingdom Listing Authority.

\*\* In their report to shareholders, auditors must; i) indicate whether the auditable portion of the remuneration report has been properly prepared, ii) highlight any non-compliance (DRR, 2002)

**Table 1 Level and Composition of CEO Pay in UK Firms, 2000 – 2005**

Panel A: Level and Composition of CEO Pay (in UK pounds), 2000-2005														
Year	Mean							Median						
	2000	2001	2002	2003	2004	2005	All	2000	2001	2002	2003	2004	2005	All
N	473	558	611	602	566	495	3305	473	558	611	602	566	495	3305
<i>Salary</i>	281	290	302	318	331	366	314	250	245	256	272	285	325	270
<i>Bonus</i>	149	127	144	181	208	256	176	56	46	60	94	107	141	78
<b><i>Cash Pay</i></b>	<b>430</b>	<b>417</b>	<b>446</b>	<b>499</b>	<b>538</b>	<b>622</b>	<b>491</b>	<b>310</b>	<b>314</b>	<b>335</b>	<b>378</b>	<b>404</b>	<b>484</b>	<b>363</b>
<i>Stock Options</i>	216	250	174	198	159	143	190	0	6	3	4	0	0	0
<i>Restricted Stock</i>	121	103	144	228	312	447	223	0	0	0	0	0	82	0
<b><i>Equity Pay</i></b>	<b>338</b>	<b>355</b>	<b>321</b>	<b>434</b>	<b>481</b>	<b>610</b>	<b>420</b>	<b>72</b>	<b>82</b>	<b>48</b>	<b>121</b>	<b>136</b>	<b>214</b>	<b>100</b>
<i>Other Pay</i>	61	65	70	70	94	103	77	28	29	34	34	39	44	34
<b><i>Total Pay</i></b>	<b>828</b>	<b>836</b>	<b>835</b>	<b>1000</b>	<b>1105</b>	<b>1323</b>	<b>984</b>	<b>468</b>	<b>478</b>	<b>467</b>	<b>585</b>	<b>622</b>	<b>820</b>	<b>549</b>

  

Panel B: Composition of CEO Pay (in %), 2000-2005														
Year	Mean							Median						
	2000	2001	2002	2003	2004	2005	All	2000	2001	2002	2003	2004	2005	All
<i>Salary</i>	53%	54%	56%	50%	48%	44%	51%	50%	54%	55%	46%	44%	40%	48%
<i>Bonus</i>	14%	13%	15%	16%	17%	18%	16%	11%	10%	13%	14%	16%	17%	14%
<b><i>Cash Pay</i></b>	<b>67%</b>	<b>67%</b>	<b>70%</b>	<b>66%</b>	<b>65%</b>	<b>63%</b>	<b>67%</b>	<b>69%</b>	<b>69%</b>	<b>73%</b>	<b>68%</b>	<b>67%</b>	<b>60%</b>	<b>68%</b>
<i>Stock Options</i>	16%	16%	11%	14%	11%	8%	13%	0%	1%	1%	0%	0%	0%	0%
<i>Restricted Stock</i>	8%	7%	7%	11%	14%	20%	11%	0%	0%	0%	0%	0%	12%	0%
<b><i>Equity Pay</i></b>	<b>23%</b>	<b>23%</b>	<b>19%</b>	<b>25%</b>	<b>25%</b>	<b>29%</b>	<b>24%</b>	<b>19%</b>	<b>20%</b>	<b>13%</b>	<b>23%</b>	<b>23%</b>	<b>31%</b>	<b>21%</b>
<i>Other Pay</i>	9%	10%	11%	9%	10%	9%	10%	7%	7%	9%	7%	7%	7%	7%
<b><i>Total Pay</i></b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

All figures (except percentages) are reported in (nominal) UK Pounds (thousands). In Panel A: *Salary* represents the CEO's annual salary; *Bonus* indicates the annual performance bonus. *Cash Pay* includes salary, performance bonus and other cash annual payments (if any); *Stock Options* represents the Black-Scholes estimate of the value of stock options granted to the CEO during the year; *Restricted Stock* indicates the fair value of the restricted stock granted to the CEO during the year; *Equity Pay* indicates the fair value of all equity awards (stock options, restricted stock) granted to the CEO during the year; *Other Pay* indicates the value of pension and other pay items not included in the other categories; *Total Pay* represents the sum of Cash Pay, Equity Pay and Other Pay. In Panel B, all the items in Panel A are expressed as a fraction of *Total Pay* before computing sample means and medians. For example, *Salary* is the sample mean (or median) of the ratio of Salary to Total Pay.



**Table 2 Descriptive statistics**

	Pre Period (2000-2002) (N = 1,642 )				Post Period (2003-2005) (N = 1,663 )				2000-2005 (N= 3,305 )	
	Q1	Median	Mean	Q3	Q1	Median	Mean	Q3	Median	Mean
<i>CEO Cash Pay (thousands)</i>	210	320	432	499	257	413	549	672	363	491
<i>CEO Total Pay (thousands)</i>	283	470	833	881	370	658	1132	1225	549	984
<i>Industry-Adjusted Returns</i>	-21.9%	-1.8%	1.9%	20.0%	-24.9%	-5.1%	-0.1%	16.4%	-3.5%	0.9%
<i>Industry Returns</i>	-18.4%	-3.1%	-4.5%	10.6%	17.0%	27.8%	32.8%	46.0%	13.2%	14.3%
<i>Industry-Adjusted ROA</i>	-2.8%	0.9%	1.5%	6.5%	-2.8%	0.6%	1.5%	6.0%	0.8%	1.5%
<i>Industry ROA</i>	2.3%	5.9%	5.0%	10.6%	2.9%	6.4%	5.6%	9.0%	6.3%	5.3%
<i>Sales (millions)</i>	64	220	2496	730	74	237	2669	831	227	2583
<i>Market-to-Book Ratio</i>	1.1	1.8	3.5	3.6	1.2	1.9	2.7	3.0	1.8	3.1
<i>CEO Ownership</i>	0.0%	0.2%	2.7%	1.1%	0.1%	0.4%	2.5%	1.3%	0.3%	2.6%

Table 2 reports descriptive statistics for the UK firms with available data on the variables used in the regressions used in Table 5-12. All figures (except percentages and ratios) are reported in (nominal) UK Pounds. *CEO Cash Pay* includes salary, performance bonus and other cash annual payments (if any); *CEO Total Pay* represents the sum of cash Pay, equity pay and other pay. *Industry-Adjusted Return* is the difference between the 1-year stock return of a given firm and its *Industry Returns*; *Industry-Adjusted ROA* is the difference between the 1-year ROA of a given firm and its *Industry ROA*. *Industry Returns (ROA)* is the average stock returns (ROA) of firms in a given industry. *Sales* is the annual revenues. *Market-to-Book Ratio* is the ratio of the market to the book value of firm equity. *CEO Ownership* is the percentage of firm equity held by the CEO

**Table 3 Proposals to Approve Remuneration report - Voting Outcome**

Variable	Proxy Season 2003 (FY 2002)	Proxy Season 2004 (FY 2003)
	FTSE 350	FTSE 350
Average Voting Dissent (AVD)* - Constant Sample (N=245)	14.6% **	10.3% **
Number (%) Firms with AVD > 50%	3 (1.2%)	4 (1.6%)
Among Firms with AVD > 50%:		
# Firms with decrease in voting dissent next year	3 out of 3	N/A
Average decrease in voting dissent next year	50.9% (from 60.4% to 9.5%)	N/A
# of Firms with AVD>50% next year	0 out of 3	N/A
Number (%) Firms with AVD > 20%	65 (26.5%)	29 (11.8%)
Among Firms with AVD > 20%:		
# Firms with decrease in voting dissent next year	51 out of 65	N/A
Average decrease in voting dissent next year	19.0% (from 30.6% to 11.6%)	N/A
# of Firms with AVD>20% next year	9 out of 65	N/A

\* Voting Dissent is computed as the sum of votes against and abstention votes, divided by all votes cast on the proposal to approve the remuneration report.

Table 3 reports descriptive statistics on the voting outcome of proposal to approve the remuneration report at UK firms in the FTSE 350 index in 2003 and 2004. To provide a meaningful comparison of 2003 and 2004 data, we present statistics for a constant sample of 245 firms with available data in both years. Statistics for the full sample with available data (278 firms in 2003 and 316 in 2004) are similar (average voting dissent 14.6% and 10.2% in 2003 and 2004, respectively).

**Table 4 Changes to compensation policies: ex ante and ex post effect of say on pay votes**

	(i)	(ii)
	30 firms with highest voting dissent in FY 2002	30 firms with low voting dissent in FY 2002
Number of firms that report...	...changes in FY 2003, after the vote	...changes in FY 2002, before the vote
<b>...change to severance contract</b>		
...reduction of notice period (NP) to 12 months	10	8
...as a % of 12 firms with NP >12 months	83%	89%
<b>...change to stock option plan</b>	18	18
...as a % of 29 firms with a stock option plan	62%	75%
...elimination/reduction of retesting provisions	6	3
...as a % of 12 firms allowing retesting	50%	33%
...'tougher' performance-based vesting conditions	5	3
...other changes in performance-based vesting conditions	4	4
...replacement of options plan with restricted stock plan	3	1
...discontinuation of option plan	2	1
...other changes (e.g. capping option grants as % of salary)	3	3
<b>...change to performance-based restricted stock plan</b>	14	16
...as a % of 19 firms with a restricted stock plan	74%	80%
...'tougher' comparator group	3	0
...'tougher' performance-based vesting conditions	1	0
...other changes in performance-based vesting conditions	5	6
...introduction of new performance-based restricted stock plan	5	8
<b>...change to annual bonus plan</b>	14	12
...as a % of 29 firms with a bonus plan	48%	41%
...change in performance measures	4	4
...change in bonus formula (e.g. change cap to bonus)	6	8
...adoption of (or plan to adopt) new bonus plan	4	2
<b>...other changes</b>	14	17
...hiring of (add'l) comp consultant to conduct review	10	14
...initiatives to increase executive ownership	10	8
...shift of pay mix from options to restricted shares	3	0
...others	3	2
<b>...at least one of the above changes</b>	26	26
...as a % of 30 firms	87%	87%
<b>...introduction of process of consultation with shareholders</b>	7	4
...as a % of 30 firms	23%	13%
<b>...an explicit link between (at least one of) the above changes to consultation with shareholders</b>	7	3
...as a % of 26 firms reporting at least one change	27%	12%

Table 4, column (i), reports significant changes in compensation policies reported during FY 2003 (e.g. *after* the vote) by 30 firms with the highest voting opposition to the FY 2002 remuneration report (average 39.9%). Column (ii) reports significant changes in compensation policies reported during FY 2002 (i.e. *before* the vote) by a sample of 30 firms with low voting opposition to the FY 2002 remuneration report (average: 6.1%).

**Table 5 Determinants of CEO pay in the UK Pre- and Post- Say on Pay legislation**

Variable	Panel A						Panel B					
	Y = Ln (CEO Cash Pay)						Y = Ln (CEO Total Pay)					
	Pre Period		Post Period		Difference Post - Pre		Pre Period		Post Period		Difference Post - Pre	
	Coeff.	P val	Coeff.	P val	Coeff.	P val	Coeff.	P val	Coeff.	P val	Coeff.	P val
<i>Post Period</i>			0.12	0.35	0.12	0.35			0.18	0.36	0.18	0.36
<i>Trend</i>	0.09 ***	0.00	0.08 ***	0.00	0.00	0.80	0.06 ***	0.00	0.08 ***	0.00	0.01	0.63
<i>Industry-Adjusted Returns</i> <sup>+</sup>	0.04	0.22	0.04	0.20	-0.01	0.87	0.16 *	0.05	0.08 **	0.03	-0.07	0.39
<i>Industry-Adjusted Returns</i> <sup>-</sup>	0.09	0.14	0.25 ***	0.00	0.16 *	0.05	0.15 *	0.08	0.44 ***	0.00	0.29 ***	0.01
<i>Industry Returns</i>	0.01	0.89	0.10 **	0.05	0.09	0.29	0.14 *	0.10	0.29 ***	0.00	0.15	0.16
<i>Industry-Adjusted ROA</i> <sup>+</sup>	0.94 ***	0.00	1.06 ***	0.00	0.12	0.63	1.14 ***	0.00	1.12 ***	0.00	-0.01	0.97
<i>Industry-Adjusted ROA</i> <sup>-</sup>	-0.26	0.24	0.69 **	0.02	0.95 ***	0.00	-0.26	0.41	0.75 *	0.09	1.01 **	0.01
<i>Industry ROA</i>	0.91 ***	0.01	1.07 ***	0.00	0.16	0.55	0.27	0.55	0.61	0.16	0.34	0.31
<i>Ln Sales</i>	0.08 ***	0.00	0.06 **	0.03	-0.02	0.13	0.10 ***	0.01	0.11 ***	0.01	0.00	0.68
<i>Market-to-Book Ratio</i>	0.00 **	0.05	0.01 *	0.07	0.00	0.48	0.00	0.32	0.01	0.18	0.00	0.43
<i>CEO Ownership</i>	0.06	0.66	0.08	0.70	0.02	0.93	-0.12	0.61	-0.17	0.47	-0.05	0.85

Table 5, Panel A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:  $CEO\ compensation = Pre\ Period * [\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j] + Post\ Period * [\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j] + Firm\ Fixed\ Effects + \epsilon$ . *Pre (Post) Period* is an indicator variable equal to 1 for observations occurring in the 2000-2002 (2003-2005) period, and 0 otherwise. This equation effectively represents the stacking of two regressions, one for the *Pre Period* and one for the *Post Period*. The stacking of the two regressions allows statistical tests of differences in coefficient estimates across the two periods, reported in the column ‘Difference Post – Pre’. \*\*\* (\*\*, \*) denotes significance at the 0.01 (0.05, 0.10) level. Reported p-values are based on heteroskedasticity-adjusted standard errors clustered by firm. The dependent variable (*CEO compensation*) is the natural log of CEO cash compensation (CEO total direct compensation) in Panel A (Panel B). The set of *Pay Determinants* includes the following variables: *Trend* is a linear trend variable, equal to the fiscal year (FY) minus 1999 in the *Pre Period* and FY minus 2002 in the *Post Period*; *Industry-Adjusted Returns*<sup>+(<sup>-</sup>)</sup> is the difference between the 1-year stock return of a given firm and its *Industry Returns*, if positive (negative), zero else; *Industry-Adjusted ROA*<sup>+(<sup>-</sup>)</sup> is the difference between the 1-year ROA of a given firm and its *Industry ROA*, if positive (negative), zero else. *Industry Returns (ROA)* is the average stock returns (ROA) of firms in a given industry. *Ln Sales* is the natural log of firm sales. *Market-to-Book Ratio* is the ratio of the market to the book value of firm equity. *CEO Ownership* is the percentage of firm equity held by the CEO.

**Table 6 Determinants of CEO pay in the UK Pre- and Post- Say on Pay legislation: the effect of voting dissent**

Variable	Panel A										Panel B	
	Y = Ln (CEO Cash Pay)										Y = Ln (CEO Total Pay)	
	Low Voting Dissent				High Voting Dissent				High - Low		High - Low	
	Pre Period	Post Period	Difference Post - Pre		Pre Period	Post Period	Difference Post - Pre		Difference in Difference		Difference in Difference	
Coeff.	Coeff.	Coeff.	P val	Coeff.	Coeff.	Coeff.	P val	Coeff.	P val	Coeff.	P val	
<i>Post Period</i>	.	0.15	0.15	0.32	.	0.22	0.22	0.19	0.07	0.65	0.14	0.61
<i>Trend</i>	0.08 ***	0.06 ***	-0.02	0.59	0.06 ***	0.09 ***	0.03	0.49	0.05	0.38	0.06	0.44
<i>Industry-Adjusted Returns<sup>+</sup></i>	0.09 *	0.03	-0.06	0.38	0.30 **	0.14	-0.17	0.32	-0.11	0.54	-0.32	0.35
<i>Industry-Adjusted Returns<sup>-</sup></i>	0.02	0.22 **	0.20	0.15	0.02	0.25 *	0.22	0.18	0.02	0.83	0.47	0.21
<i>Industry Returns</i>	0.05	0.04	-0.01	0.95	-0.03 *	-0.02	0.02	0.91	0.02	0.91	0.07	0.81
<i>Industry-Adjusted ROA<sup>+</sup></i>	0.90 *	1.14 ***	0.24	0.26	0.88 ***	1.21 **	0.33	0.57	0.09	0.48	-1.06	0.28
<i>Industry-Adjusted ROA<sup>-</sup></i>	0.66	0.47	-0.20	0.61	0.61	2.84 **	2.23 **	0.03	2.43 ***	0.01	1.86 **	0.02
<i>Industry ROA</i>	0.99	1.41 ***	0.42	0.41	0.90	1.66 **	0.76	0.31	0.33	0.71	-0.49	0.65
<i>Ln Sales</i>	0.05 **	0.04	-0.01	0.38	0.06 ***	0.06 **	0.01	0.77	0.02	0.45	0.01	0.79
<i>Market-to-Book Ratio</i>	0.01 ***	0.01	0.00	0.77	0.00	-0.01	0.00	0.60	-0.01	0.57	0.01	0.74
<i>CEO Ownership</i>	0.21	0.27	0.06	0.35	-0.14	-0.10	0.04	0.86	-0.02	0.53	-0.53	0.43

Table 6, Panel A and B, present results from the following pooled OLS regression for a sample of 1,564 firm-year observations between 2000 and 2005:  $CEO\ compensation = Low\ Voting\ Dissent * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + High\ Voting\ Dissent * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + Firm\ Fixed\ Effects + \epsilon$ . *Low (High) Voting Dissent* is an indicator variable equal to 1 for firms with less (more) than 20% of votes cast against the approval of the remuneration report at the 2003 annual meeting, and 0 otherwise. *Pre (Post) Period* is an indicator variable equal to 1 for observations occurring in the 2000-2002 (2003-2005) period, and 0 otherwise. This equation effectively represents the stacking of four regressions, two for the *Low Voting Dissent* firms (one for the *Pre* and one for the *Post Period*) and two for the *High Voting Dissent* firms. The stacking of the four regressions allows statistical tests of differences in coefficient estimates across the two periods within each sub-sample of firms—reported in the column ‘Difference Post – Pre’—as well as statistical tests of whether the change in coefficient estimates across the two periods differs across the two sub-samples of firms—reported in the column ‘Difference in Difference.’ For Panel B, we only present the ‘Difference in Difference’ test. All variables are defined at the bottom of Table 5. \*\*\* (\*\*, \*) denotes significance at the 0.01 (0.05, 0.10) level. Reported p-values are based on heteroskedasticity-adjusted standard errors clustered by firm. To preserve space, we report p-values only for the ‘Difference Post-Pre’ and the ‘Difference in Difference’ coefficients.

**Table 7 Determinants of CEO pay in the UK Pre- and Post- Say on Pay legislation: the effect of excess CEO pay**

Variable	Panel A									Panel B		
	Y = Ln (CEO Cash Pay)									Y = Ln (CEO Total Pay)		
	No Excess CEO Pay Firms				Excess CEO Pay Firms				Excess Pay - No Excess Pay		Excess Pay - No Excess Pay	
	Pre Period	Post Period	Difference Post - Pre		Pre Period	Post Period	Difference Post - Pre		Difference in Difference		Difference in Difference	
Coeff.	Coeff.	Coeff.	P val	Coeff.	Coeff.	Coeff.	P val	Coeff.	P val	Coeff.	P val	
<i>Post Period</i>		0.13	0.13	0.24		0.17	0.17	0.28	0.04	0.77	0.09	0.70
<i>Trend</i>	0.10 ***	0.09 ***	-0.01	0.73	0.04	0.06 *	0.01	0.77	0.02	0.69	-0.03	0.63
<i>Industry-Adjusted Returns</i> <sup>+</sup>	0.05	0.05	0.00	0.93	0.05	-0.04	-0.09	0.28	-0.10	0.32	-0.14	0.53
<i>Industry-Adjusted Returns</i> <sup>-</sup>	0.10	0.23 ***	0.14 *	0.09	0.00	0.38 **	0.38 *	0.09	0.24	0.33	0.48	0.11
<i>Industry Returns</i>	0.06	0.10 *	0.03	0.73	-0.17	0.18	0.35 *	0.09	0.32	0.16	0.24	0.38
<i>Industry-Adjusted ROA</i> <sup>+</sup>	0.54 **	0.97 ***	0.43 *	0.10	0.90 ***	1.04 **	0.14	0.40	-0.29	0.63	-0.57	0.40
<i>Industry-Adjusted ROA</i> <sup>-</sup>	-0.11	0.38	0.49	0.12	-0.46 **	1.14 **	1.60 ***	0.00	1.11 **	0.04	0.80 *	0.07
<i>Industry ROA</i>	0.88 **	1.08 ***	0.21	0.46	0.93	1.07 **	0.14	0.68	-0.06	0.70	-0.55	0.18
<i>Ln Sales</i>	0.09 ***	0.08 ***	-0.01	0.50	0.08 *	0.07 **	0.00	0.79	0.00	0.64	-0.03	0.36
<i>Market to Book</i>	0.00 **	0.00	0.00	0.95	0.00 **	0.02 *	0.02	0.12	0.02	0.15	0.01	0.55
<i>CEO Ownership</i>	-0.05	-0.15	-0.10	0.57	0.84	1.13	0.29	0.70	0.39	0.61	-1.50	0.14

Table 7, Panel A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:  $CEO\ compensation = No\ Excess\ CEO\ Pay\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + Excess\ CEO\ Pay\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + Firm\ Fixed\ Effects + \varepsilon$ . *Excess (No Excess) CEO Pay Firms* is an indicator variable equal to 1 for firms with average ‘excess CEO pay’ (defined as the residual from a yearly regression of total CEO pay on its economic determinants) in the top 25% (bottom 75%) of the sample distribution over the Pre period (2000-2002). This equation effectively represents the stacking of four regressions, two for the *No Excess CEO Pay Firms* (one for the *Pre* and one for the *Post Period*) and two for the *Excess CEO Pay Firms*. The stacking of the four regressions allows statistical tests of differences in coefficient estimates across the two periods within each sub-sample of firms—reported in the column ‘Difference Post – Pre’—as well as statistical tests of whether the change in coefficient estimates across the two periods differs across the two sub-samples of firms—reported in the column ‘Difference in Difference.’ For Panel B, we only present the ‘Difference in Difference’ test. All variables are defined at the bottom of Table 5. \*\*\* (\*\*, \*) denotes significance at the 0.01 (0.05, 0.10) level. Reported p-values are based on heteroskedasticity-adjusted standard errors clustered by firm. To preserve space, we report p-values only for the ‘Difference Post-Pre’ and the ‘Difference in Difference’ coefficients.

**Table 8 Determinants of CEO pay in the UK Pre- and Post- Say on Pay legislation: the effect of total CEO pay**

Variable	Panel A										Panel B	
	Y = Ln (CEO Cash Pay)										Y = Ln (CEO Total Pay)	
	Low Total CEO Pay Firms				High Total CEO Pay Firms				High - Low		High - Low	
	Pre Period	Post Period	Difference Post - Pre		Pre Period	Post Period	Difference Post - Pre		Difference in Difference		Difference in Difference	
Coeff.	Coeff.	Coeff.	P val	Coeff.	Coeff.	Coeff.	P val	Coeff.	P val	Coeff.	P val	
<i>Post Period</i>		0.29 *	0.29 *	0.08		0.31	0.31	0.23	0.03	0.93	-0.03	0.90
<i>Trend</i>	0.08 ***	0.09 ***	0.01	0.66	0.10 ***	0.06 **	-0.04	0.34	-0.05	0.29	-0.04	0.50
<i>Industry-Adjusted Returns</i> <sup>+</sup>	0.03	0.04	0.01	0.82	0.06	0.00	-0.06	0.68	-0.07	0.64	-0.20	0.22
<i>Industry-Adjusted Returns</i> <sup>-</sup>	0.11 *	0.27 ***	0.15 *	0.08	0.02	0.28 *	0.27	0.28	0.11	0.67	0.11	0.78
<i>Industry Returns</i>	0.04	0.10	0.05	0.57	-0.09	0.20 *	0.28	0.16	0.23	0.30	0.08	0.74
<i>Industry-Adjusted ROA</i> <sup>+</sup>	0.76 ***	1.10 ***	0.34	0.23	0.99 ***	0.88 *	0.11	0.46	-0.23	0.37	-0.23	0.73
<i>Industry-Adjusted ROA</i> <sup>-</sup>	-0.16	0.74 **	0.90 ***	0.00	-0.26 *	0.23	0.49	0.33	-0.41	0.73	-0.05	0.98
<i>Industry ROA</i>	0.87 **	1.08 ***	0.21	0.49	1.12	0.46	-0.65	0.28	-0.86	0.20	-1.17	0.19
<i>Ln Sales</i>	0.09 ***	0.09 ***	-0.01	0.67	0.06	0.04	0.02	0.69	0.03	0.74	0.02	0.61
<i>Market to Book</i>	0.00	0.00	0.00	0.91	0.01 *	0.02 **	0.01	0.35	0.01	0.39	0.00	0.98
<i>CEO Ownership</i>	0.05	0.04	-0.01	0.95	0.63	-0.26	-0.90 *	0.09	-0.89	0.12	0.17	0.23

Table 8, Panel A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:  $CEO\ compensation = Low\ Total\ CEO\ Pay\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + High\ Total\ CEO\ Pay\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + Firm\ Fixed\ Effects + \epsilon$ . *Low (High) Total CEO Pay Firms* is an indicator variable equal to 1 for firms with average total CEO pay in the top 20% (bottom 80%) of the sample distribution over the Pre period (2000-2002). This equation effectively represents the stacking of four regressions, two for the *Low Total CEO Pay Firms* (one for the *Pre* and one for the *Post Period*) and two for the *High Total CEO Pay Firms*. The stacking of the four regressions allows statistical tests of differences in coefficient estimates across the two periods within each sub-sample of firms—reported in the column ‘Difference Post – Pre’—as well as statistical tests of whether the change in coefficient estimates across the two periods differs across the two sub-samples of firms—reported in the column ‘Difference in Difference.’ For Panel B, we only present the ‘Difference in Difference’ test. All variables are defined at the bottom of Table 5. \*\*\* (\*\*, \*) denotes significance at the 0.01 (0.05, 0.10) level. Reported p-values are based on heteroskedasticity-adjusted standard errors clustered by firm. To preserve space, we report p-values only for the ‘Difference Post-Pre’ and the ‘Difference in Difference’ coefficients.

**Table 9 Determinants of CEO pay in the UK Pre- and Post- Say on Pay legislation: the effect of institutional ownership**

Variable	Panel A								Panel B			
	Y = Ln (CEO Cash Pay)											
	Low Instit Own Firms				High Instit Own Firms				High - Low		High - Low	
	Pre Period	Post Period	Difference Post - Pre		Pre Period	Post Period	Difference Post - Pre		Difference in Difference		Difference in Difference	
	Coeff.	Coeff.	Coeff.	P val	Coeff.	Coeff.	Coeff.	P val	Coeff.	P val	Coeff.	P val
<i>Post Period</i>		0.14	0.14	0.21		0.09	0.09	0.33	-0.05	0.53	-0.18	0.28
<i>Trend</i>	0.08 ***	0.09 ***	0.01	0.64	0.10 ***	0.07 ***	-0.03	0.30	-0.04	0.28	-0.01	0.85
<i>Industry-Adjusted Returns</i> <sup>+</sup>	0.13 **	0.03	-0.09	0.16	-0.01	0.04	0.05	0.40	0.14 *	0.10	0.01	0.98
<i>Industry-Adjusted Returns</i> <sup>-</sup>	0.12	0.30 ***	0.17	0.12	0.03	0.22 **	0.18	0.11	0.01	0.94	-0.18	0.42
<i>Industry Returns</i>	-0.01	0.16 **	0.17	0.15	0.05	0.05	0.00	0.99	-0.17	0.28	-0.16	0.46
<i>Industry-Adjusted ROA</i> <sup>+</sup>	1.00 ***	1.14 ***	0.15	0.66	0.88 ***	1.08 ***	0.19	0.57	0.05	0.92	0.86	0.18
<i>Industry-Adjusted ROA</i> <sup>-</sup>	-0.42 *	0.62	1.04 **	0.05	0.20	0.78 **	0.58	0.12	-0.46	0.44	-1.18	0.24
<i>Industry ROA</i>	0.97 **	0.99 ***	0.02	0.96	1.04 **	1.18 ***	0.14	0.72	0.12	0.83	0.73	0.39
<i>Ln Sales</i>	0.08 ***	0.05 *	-0.02	0.11	0.08 ***	0.08 ***	0.00	0.84	0.02	0.24	0.02	0.37
<i>Market to Book</i>	0.01 *	0.00	0.00	0.90	0.00	0.01 *	0.01	0.24	0.01	0.40	0.00	0.93
<i>CEO Ownership</i>	0.04	0.14	0.10	0.70	0.22	0.01	-0.21	0.48	-0.31	0.43	-0.41	0.44

Table 9, Panel A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:  $CEO\ compensation = Low\ Instit\ Own\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + High\ Instit\ Own\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + Firm\ Fixed\ Effects + \varepsilon$ . *Low (High) Instit Own Firms* is an indicator variable equal to 1 for firms with a level of concentration of institutional ownership (sum of equity holdings by institutional investors owning more than 3% of equity) below (above) the sample median as of the end of 2002. This equation effectively represents the stacking of four regressions, two for *Low Instit Own Firms* (one for the *Pre* and one for the *Post Period*) and two for *High Instit Own Firms*. The stacking of the four regressions allows statistical tests of differences in coefficient estimates across the two periods within each sub-sample of firms—reported in the column ‘Difference Post – Pre’—as well as statistical tests of whether the change in coefficient estimates across the two periods differs across the two sub-samples of firms—reported in the column ‘Difference in Difference.’ For Panel B, we only present the ‘Difference in Difference’ test. All variables are defined at the bottom of Table 5. \*\*\* (\*\*, \*) denotes significance at the 0.01 (0.05, 0.10) level. Reported p-values are based on heteroskedasticity-adjusted standard errors clustered by firm. To preserve space, we report p-values only for the ‘Difference Post-Pre’ and the ‘Difference in Difference’ coefficients.



**Table 10 Determinants of CEO pay in the UK Pre- and Post- Say on Pay legislation: the effect of board independence**

Variable	Panel A										Panel B	
	Y = Ln (CEO Cash Pay)										Y = Ln (CEO Total Pay)	
	Low Board Independence Firms				High Board Independence Firms				High - Low		High - Low	
	Pre Period	Post Period	Difference Post - Pre	P val	Pre Period	Post Period	Difference Post - Pre	P val	Difference in Difference	P val	Difference in Difference	P val
<i>Post Period</i>		0.14	0.14	0.38		0.08	0.08	0.23	-0.06	0.42	0.03	0.82
<i>Trend</i>	0.08 ***	0.08 ***	-0.01	0.78	0.09 ***	0.09 ***	-0.01	0.85	0.00	0.98	0.04	0.51
<i>Industry-Adjusted Returns</i> <sup>+</sup>	0.07	0.03	-0.03	0.52	0.01	0.04	0.03	0.59	0.07	0.39	-0.26	0.11
<i>Industry-Adjusted Returns</i> <sup>-</sup>	0.06	0.23 ***	0.17 *	0.08	0.14	0.30 ***	0.17	0.26	0.00	0.98	0.08	0.73
<i>Industry Returns</i>	0.05	0.04	-0.01	0.96	-0.06	0.20 **	0.27	0.10 *	0.27	0.15	0.14	0.53
<i>Industry-Adjusted ROA</i> <sup>+</sup>	0.85 ***	0.92 ***	0.07	0.80	1.15 ***	1.41 ***	0.26	0.60	0.19	0.75	0.90	0.21
<i>Industry-Adjusted ROA</i> <sup>-</sup>	-0.32	0.72 *	1.04 ***	0.01	0.07	0.70 ***	0.63	0.08 *	-0.41	0.43	0.62	0.42
<i>Industry ROA</i>	0.87 **	0.94 ***	0.08	0.82	0.95 **	1.27 ***	0.32	0.53	0.24	0.70	-0.05	0.94
<i>Ln Sales</i>	0.08 ***	0.06 **	-0.02	0.18	0.07 ***	0.06 *	-0.02	0.37	0.00	0.99	-0.01	0.70
<i>Market to Book</i>	0.00 *	0.00	0.00	0.76	0.01	0.01 *	0.00	0.78	0.00	0.97	0.00	0.78
<i>CEO Ownership</i>	0.04	0.02	-0.02	0.93	0.16	0.28	0.13	0.80	0.14	0.78	-0.56	0.55

Table 10, Panel A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:  $CEO\ compensation = Low\ Bd\ Indep\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + High\ Bd\ Indep\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + Firm\ Fixed\ Effects + \epsilon$ . *Low (High) Bd Indep Firms* is an indicator variable equal to 1 for firms with a percentage of independent directors below (above) the sample median as of the end of 2002. This equation effectively represents the stacking of four regressions, two for *Low Bd Indep Firms* (one for the *Pre* and one for the *Post Period*) and two for *High Bd Indep Firms*. The stacking of the four regressions allows statistical tests of differences in coefficient estimates across the two periods within each sub-sample of firms—reported in the column ‘Difference Post – Pre’—as well as statistical tests of whether the change in coefficient estimates across the two periods differs across the two sub-samples of firms—reported in the column ‘Difference in Difference.’ For Panel B, we only present the ‘Difference in Difference’ test. All variables are defined at the bottom of Table 5. \*\*\* (\*\*, \*) denotes significance at the 0.01 (0.05, 0.10) level. Reported p-values are based on heteroskedasticity-adjusted standard errors clustered by firm. To preserve space, we report p-values only for the ‘Difference Post-Pre’ and the ‘Difference in Difference’ coefficients.

**Table 11 Determinants of CEO pay in the UK Pre- and Post- Say on Pay legislation: the effect of firm size**

Variable	Panel A									Panel B		
	Y = Ln (CEO Cash Pay)										Y = Ln (CEO Total Pay)	
	Small Firms				Large Firms				Large Firms - Small Firms		Large Firms - Small Firms	
	Pre Period	Post Period	Difference Post - Pre		Pre Period	Post Period	Difference Post - Pre		Difference in Difference		Difference in Difference	
Coeff.	Coeff.	Coeff.	P val	Coeff.	Coeff.	Coeff.	P val	Coeff.	P val	Coeff.	P val	
<i>Post Period</i>		0.09	0.09	0.37		0.17	0.17	0.25	0.08	0.25	-0.24	0.34
<i>Trend</i>	0.08 ***	0.07 ***	0.00	0.95	0.09 ***	0.08 ***	-0.01	0.66	-0.01	0.82	0.00	0.94
<i>Industry-Adjusted Returns</i> <sup>+</sup>	0.02	0.03	0.02	0.77	0.10 *	0.04	-0.06	0.39	-0.08	0.39	0.10	0.53
<i>Industry-Adjusted Returns</i> <sup>-</sup>	0.09	0.20 ***	0.11	0.35	0.08	0.28 ***	0.20 *	0.10	0.09	0.61	-0.01	0.96
<i>Industry Returns</i>	-0.05	0.05	0.11	0.38	0.07	0.15 *	0.08	0.48	-0.02	0.88	-0.07	0.77
<i>Industry-Adjusted ROA</i> <sup>+</sup>	0.73 **	1.17 ***	0.44	0.20	1.37 ***	1.11 ***	-0.27	0.48	-0.71	0.16	0.16	0.80
<i>Industry-Adjusted ROA</i> <sup>-</sup>	-0.50 **	0.51 *	1.02 ***	0.00	0.29	1.58	1.30	0.24	0.28	0.81	0.86	0.57
<i>Industry ROA</i>	0.83 *	1.09 ***	0.26	0.53	1.04 **	1.37 ***	0.33	0.41	0.07	0.91	-0.10	0.89
<i>Ln Sales</i>	0.08 ***	0.03	-0.05	0.15	0.08 ***	0.08 **	0.00	0.97	0.05	0.18	0.04	0.43
<i>Market to Book</i>	0.00	0.00	0.00	0.78	0.01	0.01 *	0.00	0.48	0.00	0.86	-0.01	0.41
<i>CEO Ownership</i>	0.08	0.02	-0.06	0.83	-0.05	0.09	0.15	0.59	0.20	0.59	0.48	0.24

Table 11, Panel A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:  $CEO\ compensation = Small\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + Large\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + Firm\ Fixed\ Effects + \epsilon$ . *Small (Large) Firms* is an indicator variable equal to 1 for firms with revenues below (above) the sample median in 2002. This equation effectively represents the stacking of four regressions, two for *Small Firms* (one for the *Pre* and one for the *Post Period*) and two for *Large Firms*. The stacking of the four regressions allows statistical tests of differences in coefficient estimates across the two periods within each sub-sample of firms—reported in the column ‘Difference Post – Pre’—as well as statistical tests of whether the change in coefficient estimates across the two periods differs across the two sub-samples of firms—reported in the column ‘Difference in Difference.’ For Panel B, we only present the ‘Difference in Difference’ test. All variables are defined at the bottom of Table 5. \*\*\* (\*\*, \*) denotes significance at the 0.01 (0.05, 0.10) level. Reported p-values are based on heteroskedasticity-adjusted standard errors clustered by firm. To preserve space, we report p-values only for the ‘Difference Post-Pre’ and the ‘Difference in Difference’ coefficients.

**Table 12 Determinants of CEO pay in the UK Pre- and Post- Say on Pay legislation: AIM Firms vs. (non-AIM) UK Firms**

Variable	Panel A									Panel B		
	Y = Ln (CEO Cash Pay)									Y = Ln (CEO Total Pay)		
	AIM Firms				UK Firms (non-AIM)				UK Firms - AIM Firms		UK Firms - AIM Firms	
	Pre Period	Post Period	Difference Post - Pre		Pre Period	Post Period	Difference Post - Pre		Difference in Difference		Difference in Difference	
Coeff.	Coeff.	Coeff.	P val	Coeff.	Coeff.	Coeff.	P val	Coeff.	P val	Coeff.	P val	
<i>Post Period</i>		0.46	0.46	0.18		0.12	0.12	0.35	-0.33	0.76	0.24	0.43
<i>Trend</i>	0.01	0.04	0.03	0.72	0.09 ***	0.08 ***	0.00	0.80	-0.04	0.68	-0.18	0.28
<i>Industry-Adjusted Returns</i> <sup>+</sup>	0.06	0.17	0.11	0.38	0.04	0.04	-0.01	0.87	-0.12	0.38	-0.40	0.12
<i>Industry-Adjusted Returns</i> <sup>-</sup>	0.08	0.11	0.03	0.52	0.09	0.25 ***	0.16 *	0.05	0.13	0.13	0.14	0.11
<i>Industry Returns</i>	-0.41 **	0.11	0.52	0.12	0.01	0.10 **	0.09	0.29	-0.43	0.21	-0.47	0.27
<i>Industry-Adjusted ROA</i> <sup>+</sup>	1.26 ***	0.86	0.40	0.34	0.94 ***	1.06 ***	0.12	0.63	-0.29	0.24	-0.53	0.58
<i>Industry-Adjusted ROA</i> <sup>-</sup>	0.06	0.19	0.13	0.54	-0.26	0.69 **	0.95 ***	0.00	0.82	0.08 *	1.41 *	0.06
<i>Industry ROA</i>	0.80	0.72	0.08	0.70	0.91 ***	1.07 ***	0.16	0.55	0.09	0.67	0.24	0.26
<i>Ln Sales</i>	0.07	0.06	-0.01	0.90	0.08 ***	0.06 **	-0.02	0.13	-0.01	0.88	0.02	0.54
<i>Market to Book</i>	-0.03	0.02	0.05	0.17	0.00 **	0.01 *	0.00	0.48	-0.05	0.19	0.02	0.76
<i>CEO Ownership</i>	-0.16	-0.06	0.10	0.76	0.06	0.08	0.02	0.93	-0.08	0.83	0.09	0.86

Table 12, Panel A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:  $CEO\ compensation = AIM\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + UK\ Firms * [Pre\ Period * (\sum_{j=1}^{10} \alpha_j * Pay\ Determinants_j) + Post\ Period * (\beta_0 + \sum_{j=1}^{10} \beta_j * Pay\ Determinants_j)] + Firm\ Fixed\ Effects + \epsilon$ . *AIM Firms* is an indicator variable equal to 1 for UK firms traded on the Alternative Investment Market (AIM), while *UK Firms* is an indicator variable equal to 1 for all other UK firms. This equation effectively represents the stacking of four regressions, two for *AIM Firms* (one for the *Pre* and one for the *Post Period*) and two for *UK Firms*. The stacking of the four regressions allows statistical tests of differences in coefficient estimates across the two periods within each sub-sample of firms—reported in the column ‘Difference Post – Pre’—as well as statistical tests of whether the change in coefficient estimates across the two periods differs across the two sub-samples of firms—reported in the column ‘Difference in Difference.’ For Panel B, we only present the ‘Difference in Difference’ test. All variables are defined at the bottom of Table 5. \*\*\* (\*\*, \*) denotes significance at the 0.01 (0.05, 0.10) level. Reported p-values are based on heteroskedasticity-adjusted standard errors clustered by firm. To preserve space, we report p-values only for the ‘Difference Post-Pre’ and the ‘Difference in Difference’ coefficients.