

Say on Pay Votes and CEO Compensation: Evidence from the UK

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Abstract:

We examine the effect on CEO pay of new legislation introduced in the United Kingdom at the end of 2002 that mandates an annual, advisory shareholder vote (“say on pay”) on the executive pay report prepared by the board of directors. 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 its sensitivity to poor performance. The effect is more pronounced in firms with high voting dissent but extends more generally to firms with excess CEO pay, regardless of the voting dissent, suggesting that some firms responded to threat of a negative vote by acting ahead of the annual meeting. Evidence on explicit changes to CEO pay contracts made in response to specific shareholder requests confirms a shift toward greater sensitivity of CEO pay to poor performance. These findings are consistent with calls to eliminate “rewards for failure” that led to the introduction of say on pay and may be of interest to regulators and investors who are pondering the merits of say on pay in the US and other countries.

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1. Introduction

CEO pay has become the subject of unprecedented scrutiny in recent years, due to its alleged role in the accounting scandals of 2000-2002 and in the recent financial crisis. As a result, there has been growing interest in the relation between executive pay and monitoring mechanisms—such as institutional ownership, board independence, disclosure, financial reporting and media coverage (Carter et al. 2007; Chhaochharia and Grinstein 2009; Core et al. 2008; Dikolli et al. 2009; Grinstein et al. 2009; Hartzell and Starks 2003). At the same time, a series of governance failures have led to an intense policy debate on the appropriate role of direct expressions of shareholder “voice” in corporate governance (e.g., Bebchuk 2005; Bainbridge 2006).

In this study, we extend and combine these two avenues of research by examining the effect of shareholder voice on CEO pay. To do so, we focus on a legislation introduced in the United Kingdom (UK) in 2002 in response to investors’ concerns with rapid growth in CEO pay and high profile cases of “rewards for failure” (e.g., generous golden parachutes; BBC News 2002a, 2002b). The legislation mandates an annual, advisory (non-binding) shareholder vote on the executive compensation report prepared by the board of directors—hereinafter “say on pay” vote. In May 2003, during the first proxy season under say on pay, a highly-publicized majority vote against its executive pay report led the board of GlaxoSmithKline to substantially alter its compensation plan and launch an ongoing consultation process with its shareholders (BBC News 2003).¹

¹ 50.7% of the shares voted were cast against the approval of the remuneration report. In particular, shareholders objected to the large severance arrangement for the CEO (two years’ salary and bonus, plus other benefits, for a total estimated value of 22 million UK pounds), the presence of a single performance hurdle target, the use of the FTSE 100 as comparison group, an excessive bonus opportunity and rolling retesting of the performance-based vesting conditions in equity plans (retesting occurs when a firm fails to meet the performance target in the set timeframe and the board extends the test for additional years, with a

Other firms also adjusted their CEO pay practices in response to say on pay votes (Appendix 1). Encouraged by the UK experience, a number of countries have adopted or are considering similar legislation (ISS, 2007) and say on pay has taken center stage in the debate on governance reform in the US, providing further motivation for our study.²

To examine the effect of say on pay in the UK, we proceed as follows. First, we examine firms' responses to say on pay votes by analyzing the changes to compensation policies made in 2003 (*after* the vote) by the 30 firms with the highest voting dissent against the 2002 remuneration report. We find that a significant number of firms removed or modified provisions that investors viewed as "rewards for failure" (e.g., generous severance contracts, low performance hurdles and provisions allowing the retesting of performance conditions), often in response to institutional investors' explicit requests. Perhaps most importantly, a number of firms established a formal process for proactive consultation with their major shareholders going forward. As a result of these actions, firms were able to substantially reduce voting dissent at the next annual meeting. We also find evidence of similar actions taken in 2002 (*before* the vote) in a sample 30 firms experiencing low voting dissent, suggesting that the threat of a vote was effective in inducing firms to revise CEO pay practices ahead of the annual meeting.

corresponding adjustment of the performance target). In response to the vote, the company reduced the severance multiple from two to one, eliminated rolling retesting for future grants, replaced the FTSE 100 with a global pharmaceutical peer group and replaced the single vesting hurdle with a graded vesting schedule. See Appendix 1 for details.

² 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 a say on pay vote. In April 2007, the House of Representatives approved a bill seeking to mandate say on pay in the US (H.R. Bill 1257). Shortly thereafter, an analogous bill was introduced in the Senate (Senate Bill 1811) by then-Presidential Candidate Barack Obama. More recently, as a condition to receive TARP funds, about 400 financial institutions have been asked to subject their executive pay report to a say on pay vote. In May 2009, Senator Charles Schumer (D-NY) introduced the Shareholder Bill of Rights Act of 2009, which, among other things, would mandate say on pay for all publicly traded US firms. For more details on the events related to say on pay in the US, see Cai and Walkling (2007) and Ferri and Weber (2009).

We then examine the trend in CEO pay and its sensitivity to economic determinants before and after the introduction of say on pay. Using a large sample of UK firms, we find no evidence of a change in the level and growth rate of CEO pay—*after* controlling for firm performance, size and other factors. However, we find a significant increase in the sensitivity of CEO pay to poor performance. The increase is most pronounced in (i) firms with high voting dissent, and (ii) firms with an ‘excessive’ level of CEO pay (relative to the level predicted by its economic determinants) before the adoption of say on pay, regardless of the voting dissent. Interestingly, we do *not* find a more pronounced increase in firms with higher *raw* levels of CEO pay. These findings confirm the insights from our small-sample evidence of explicit changes to pay contracts and suggest the following: (i) UK investors used say on pay to push for greater accountability for poor performance; (ii) firms responded to adverse shareholder votes, in spite of their non-binding nature; (iii) (at least some) firms responded to the threat rather than the realization of an adverse vote; (iv) shareholders focused on firms with controversial CEO pay packages (as captured by high voting dissent or excessive CEO pay levels) rather than firms with high CEO pay levels, consistent with the notion that “institutional attention is a scarce resource that is allocated mostly to problem firms” (Black and Coffee 1994; Almazan et al. 2005).

To assess whether our results are driven by concurring events in the UK, we identify a control sample of UK firms not subject to say on pay (firms traded on the Alternative Investment Market) and find that they do not experience a similar increase in the sensitivity of CEO pay to poor performance. The fact that our results only hold in UK firms subject to say on pay—and are strongest in those *ex ante* expected to be affected

(e.g., firm with excessive CEO pay or high voting dissent), combined with our evidence of explicit changes in response to (or in anticipation of) say on pay votes, supports a causality interpretation of our findings.

Notwithstanding some important caveats (see Sections 5.5 and 5.6), our study suggests that in the UK, say on pay was effective in achieving one of its major goals—mitigating “rewards for failure” at firms with controversial CEO pay practices through a stronger link between pay and poor performance, while the growth of pay levels continued to be driven by market forces. These conclusions are consistent with the perceptions of most UK practitioners (Davis 2007).

Our study contributes to the literature on executive compensation in three ways. First, we extend the research on the relation between monitoring mechanisms and CEO pay to a less explored mechanism, namely, shareholder voice. Previous studies conclude that shareholder proposals requesting the adoption of specific compensation practices have generally no impact on CEO pay in US firms (e.g., Thomas and Martin 1999; Ertimur et al. 2009). Our evidence suggests that a more general ‘dissatisfaction’ vote on the remuneration report, by favoring an ex ante dialogue between firms and investors, may be a more effective tool to monitor CEO pay practices.³ Our study may also be viewed as a partial test of the argument that public expressions of “outrage”—as reflected for example in a say on pay vote—are perhaps the only effective constraint on CEO pay, given the board’s incentive to acquiesce to the CEO’s requests and the limited

³ In this respect our findings are consistent with recent evidence of a change in CEO pay practices in US firms after two other examples of a general dissatisfaction vote: shareholder votes against directors up for re-election to protest against their executive compensation choices (Cai et al. 2009; Ertimur et al. 2009) and shareholder votes on proposals to expense stock options, which in the post-Enron climate came to be viewed as a referendum on firm’s compensation practices (Ferri and Sandino, 2009).

effectiveness of other remedies available to shareholders (Bebchuk and Fried 2004).⁴ Second, we extend the research on the effect of regulatory intervention on CEO pay (e.g., Harris and Livingstone 2002; Göx 2008; Grinstein et al. 2009) and inform the ongoing policy-making debate on say on pay and, more generally, on reforming CEO pay practices (e.g., Bhagat and Romano 2009; Jensen et al. 2004). In particular, our study complements the findings in Cai and Walkling (2007), who document significantly positive abnormal returns around the House of Representatives' passage of a say on pay bill for US firms with high abnormal CEO compensation and low pay-for-performance.⁵ Finally, we contribute to an emerging body of work on executive pay outside the US (e.g., Carter et al. 2009; Conyon et al. 2006; Conyon and Murphy 2000; Fernandes et al. 2009; Thomas 2004).

With respect to the literature on shareholder voting, we provide evidence on the ex ante effect of shareholder votes and extend the recent line of research on the impact of advisory shareholder votes on firm decisions to an international setting (Cai et al. 2009; Del Guercio et al. 2008; Ertimur et al. 2008; Thomas and Cotter 2007), thereby contributing to the ongoing debate about expanding shareholder voting rights and reforming proxy voting rules (Bebchuk 2005; SEC 2007).

⁴ 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 setting process, captured by powerful CEOs (Bebchuk and Fried 2003). Revelations of option backdating (Heron and Lie 2007) and cases of generous severance payments and perks to poorly performing CEOs (Yermack 2006a, 2006b) have further fueled this criticism. According to this “managerial power” view, boards are willing to monitor pay arrangements only when they become so ‘outrageous’ to trigger a reaction from outsiders and thus put directors’ reputation at risk (Bebchuk and Fried 2004). Under this view, shareholder votes represent 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 and the market for talent (for extensive reviews of the empirical evidence, see Core et al. 2005; Edmans and Gabaix 2009; Holmström and Kaplan 2003).

⁵ A concurrent paper by Carter and Zamora (2009) also analyzes the say on pay legislation in the UK. The study finds that i) voting dissent is higher in firms with higher salaries, weak pay-for-performance sensitivity in bonus pay and greater potential dilution in equity pay; ii) boards respond to voting dissent by curbing excess salary and dilution of stock option grants as well as improving pay-performance links.

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, followed by concluding remarks in Section 6.

2. Institutional background

UK legislators began to worry about executive pay in the early 1990s. Stagnant employee salaries and layoffs coupled with increasing levels of CEO pay and the perceived disconnect between pay and performance generated an outcry among the public (e.g., FT 1995), with Labour Party politicians calling for legislative reform. 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 (Cheffins and Thomas 2001). The key themes of the report were greater remuneration committee independence and better disclosure of executive pay. With respect to the latter, the report recommended that every year boards provide shareholders with a detailed report on executive pay. The Greenbury Report did not endorse an annual shareholder vote on executive pay. However, it did recommend that boards invite shareholders to vote on executive pay under special circumstances (e.g., changes in remuneration policy and controversial issues)—a recommendation followed by only a handful of firms (Deloitte 2004; DTI 1999).⁶

⁶ The Greenbury Report also recommended that shareholders vote on various types of long-term incentive plans. The 1995 Greenbury Report, together with the 1992 Cadbury Report, the 1998 Hampel Report, the 2003 Higgs Report and the 2003 Smith Report forms the basis of the Combined Code of Principles of Good Governance and Code of Best Practice (usually referred to as ‘Combined Code’), a comprehensive collection of recommended corporate governance best practices. The Combined Code is updated over time and is appended to the Listing Rules of the London Stock Exchange (LSE). The two key features of the Combined Code are its disclosure-oriented focus and its voluntary nature: listed firms are encouraged but not obliged to comply with best practices. However, under the Listing Rules of the LSE, failure to comply

Pay levels kept increasing in the second half of the 1990s (Conyon et al. 2006) and press reports on “fat cat pay” continued to question the link between pay and performance (FT 1998). The Labour Party’s victory in 1997 raised the expectations of regulatory reform. However, an important consultation paper released by the Department of Trade and Industry in 1999 (the 1999 DTI) stressed that shareholders, not government, should impose sensible limits to executive pay. To this end, the 1999 DTI advocated better disclosures on the link between pay and performance. Unlike the Greenbury Report, though, the 1999 DTI also favored enhanced shareholder power and put forth (among other options) the possibility of a mandatory, advisory annual shareholder vote on executive pay.⁷ The 1999 DTI did not result in any immediate action.

In March 2001, the Trade and Industry Secretary issued another consultation paper (the 2001 DTI) and announced that disclosure requirements would be restructured through legislation “to improve linkage between pay and performance and strengthen the position of shareholders” (Conyon 2001). However, the question of whether to give shareholders more direct involvement in the setting of executive pay was postponed.

Finally, in August 2002, following an announcement earlier in the year, the UK government introduced the Directors’ Remuneration Report Regulations 2002 (DRR

must be disclosed and explained (the so-called “comply or explain” approach). It is important to note that the executive pay disclosure scheme advocated by the Greenbury Report and the recommendation to have a shareholders vote on long-term incentive plans were not subject to a “comply or explain” approach, but were embodied in the Listing Rules and thus became mandatory. For more details on the UK corporate governance regime, see FRC (2006).

⁷ The 1999 DTI reasoned that the other mechanisms available to shareholders were practically ineffective. Voting against the approval of the company’s accounts (which include the remuneration report prepared by the board) at the annual meeting was considered an excessive measure to deal with executive pay problems. Voting against the re-election of directors sitting on the remuneration committee was not practical (in UK only one-third of the directors are elected each year, for a three-year term) and would penalize otherwise valuable directors. Indeed, pay-related vote-no campaigns against directors have been infrequent and rarely successful in the UK (FT 2001). Finally, submitting shareholder proposals on executive pay issues was an option only available to shareholders owning at least 5% of the voting rights (under section 376 of the Companies Act 1985).

2002)—a new legislation aimed at increasing “accountability, transparency, and performance linkage of executive pay” (Baird and Stowasser 2002)—the guiding principles advocated by the 1995 Greenbury Report. The DRR 2002, effective for fiscal years ending on and after December 31, 2002, amended several sections of the Companies Act 1985 (and is now Section 439 of the Companies Act 2006). In particular, it required publicly traded UK firms to: (i) include an executive pay report in their annual filing (see Section 5.4.2 for details); and (ii) submit the report to an advisory 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).

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, contracts between a firm and its CEO are inevitably incomplete and the efficiency of CEO pay practices depends critically on the conditions under which *ex post* bargaining takes place.

Proponents of say on pay contend that CEO remuneration contracts are often determined under suboptimal bargaining conditions (e.g., Bebchuk and Fried 2004) and that enhanced shareholder “voice,” as 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 contracting (Bebchuk 2007a).⁸ For

⁸ The role of shareholder voting as a means to fill gaps in incomplete contracts has been formalized by Easterbrook and Fischel (1991). More recently, Thompson and Edelman (2009) have presented a theory of shareholder voting as an error-correction mechanism in corporate decision making.

example, a shareholder vote may help boards to overcome social-psychological barriers in negotiating with CEOs on behalf of shareholders (Campos 2007).

For an advisory vote to have an impact on compensation practices, incentives must be attached to the threat or realization of an adverse voting outcome. These incentives are likely implicit/reputational (Fama 1980; Fama and Jensen 1983). 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. Such a threat can be highly effective, as “no insurance policy for managers or directors can protect them from such reputational penalties” (Dyck and Zingales 2002). Consistent with these arguments, there is growing evidence that advisory shareholder votes have a significant impact on corporate decisions (Ferri and Sandino 2009; Guo et al. 2008; Thomas and Cotter 2007) and directors' reputation in the labor market (Del Guercio et al. 2008; Ertimur et al. 2008).

The implicit incentives attached to advisory votes may simply result in directors pandering to ill-informed shareholders and adopting sub-optimal pay practices (Singh 2006). Hence, for advisory votes to result in more efficient CEO pay contracts, it is also necessary that shareholders be able to discern the quality of compensation plans, that the votes efficiently aggregate shareholders' information,⁹ and that shareholders have a means to communicate their contractual preferences to the board. The validity of these conditions may be questioned, since dispersed shareholders may lack the required specific knowledge, or the incentives to acquire it (Bainbridge 2008), and face coordination problems. In practice, though, information intermediaries (such as proxy

⁹ Levit and Zhukova (2009) identify analytically the conditions under which nonbinding shareholder votes efficiently aggregate information and, thus, can perform an advisory role.

advisory services) may reduce these problems (Alexander et al. 2008). In addition, the UK experience indicates a significant increase in the extent of communication between compensation committees and institutional shareholders *before* the annual meeting and in the depth of investors' analysis of compensation plans (Davis 2007; Deloitte 2004; ISS 2007). Enhanced scrutiny and communication around compensation plans may lead to more informed voting decisions and the adoption of potentially superior pay practices.

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 say on pay is not straightforward. The effect (if any) will depend on the perceived problem that shareholders want to address (e.g., the level of pay, its mix, the use of perks) and the solution negotiated with the board. This problem and its solution may differ across firms (see Appendix 1), and across countries (Sheehan 2007). 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 (Deloitte 2004; Rickford 2005). Hence, we predict that, if say on pay legislation was effective in pressuring boards and forcing more dialogue with key shareholders, its introduction would lead to a higher sensitivity of CEO pay to poor performance. Also, we predict that this effect would be most pronounced in (or limited to) firms with more controversial CEO pay packages in the period prior to its introduction. Finally, the effect of say on pay may depend on the intensity of the pre-existing monitoring mechanisms. To the extent

that say on pay acts as a substitute (complementary) monitoring mechanism, we would expect a stronger effect in firms where the current level of monitoring is low (high).

4. Sample Selection and Research Design

4.1 Sample Selection

Our sample is based primarily on a governance database compiled by BoardEx, an independent, UK-based, corporate research company. From this database we obtain CEO compensation, CEO ownership, board independence, and institutional ownership data for about 600 UK firms between 2000 and 2005. We then obtain financial data from Worldscope and stock returns from Datastream. For a subset of these firms (the FTSE 350 index), we obtain data about the votes cast on the remuneration report at the 2003 and 2004 annual meetings from Manifest, a UK proxy voting advisory firm.

4.2 Research Design

To examine the effect of the say on pay legislation we compare the sensitivity of CEO pay to its economic determinants before and after the introduction of say on pay. In particular, we estimate the following model using an OLS regression:

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

where: *CEO Compensation* is the natural log of either CEO cash compensation (*Ln CEO Cash Pay*) or CEO total direct compensation (*Ln CEO Total Pay*);¹⁰ *Pre (Post) Period* is an indicator variable equal to 1 for the years 2000-2002 (2003- 2005), and 0 otherwise;

¹⁰ Cash compensation is defined as the sum of salary and annual bonus, while total direct compensation also includes the value of equity grants and long-term incentive payouts, pensions, and other benefits.

Pay Determinants is a 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: one where the observations are from the Pre Period and one where the observations are from the Post Period. Stacking the regressions and estimating them jointly enables us to test for changes in the coefficients between the two periods (Maddala 1992).

To ensure consistency in the sample composition over time, we restrict the analysis to firms with available 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 changes in CEO (e.g., mega grants, sign-on bonuses, and big bath accounting) and to maintain a clearer link between firm performance and the compensation of a single CEO. 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).

In testing the effect of say on pay on the sensitivity of CEO pay to performance we focus mostly on the sensitivity of CEO cash pay to operating performance, for two reasons. First, cash compensation is especially relevant in UK firms because it represents two thirds of CEO total pay (see Table 1). Second, due to the nature of most cash-based bonus plans, there is typically a direct structural link between *realized* cash pay and *realized* operating performance, which allows for a more powerful empirical analysis (Murphy 1999). Instead, the link between the value of equity awards (the major component of non-cash total direct compensation) and *realized* (operating or stock)

performance is not clear.¹¹ In addition, UK firms typically induce sensitivity of equity pay to (future) performance through performance-based vesting conditions, a “best practice” recommended and scrutinized by institutional investors (Carter et al. 2009). Hence, increases in the sensitivity of equity pay to performance (if any) are likely to occur through changes in these conditions (which are not captured by the estimates of the value of equity grants included in the measure of total direct compensation available to us). In Section 5.2, we will show that this is indeed the case.

4.3 Description of Independent Variables (Pay Determinants)

Standard agency models predict that CEO compensation varies directly with firm performance, viewed as an indicator of unobservable CEO’s actions (Holmström 1979). Hence, similar to prior studies (e.g., Core et al. 2003; Jensen and Murphy 1990; Sloan 1993), we include both price-based (stock returns) and accounting-based (return on operating assets, ROA) measures of firm performance. We allow for asymmetric sensitivity of pay to performance by including separate variables capturing ‘positive’ and ‘negative’ realizations of firm performance, since a number of studies suggest that CEO pay is less sensitive to poor performance than to good performance (e.g., Comprix and Muller 2006; Dechow et al. 1994; Gaver and Gaver 1998). We also split firm performance into a firm-specific component and an industry component, to account for the use of relative performance evaluation (Holmström 1979), ‘pay for luck’ (Bertrand and Mullainathan 2001; Garvey and Milbourn 2006) or the extent of CEO’s outside opportunities (Oyer 2004; Rajgopal et al. 2006). Hence, we include *Industry Returns*—

¹¹ Firms use equity-based pay mostly to re-align incentives for *future* 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), rather than as a means to reward/penalize past performance. Indeed, most studies find no association between equity grants and realized performance (Baber, Janakiraman and Kang 1996; Baber, Kang and Kumar 1998; Core and Guay 1999; Yermack 1995).

the average one-year stock returns of firms in a given industry— and *Industry-Adjusted Returns*⁺⁽⁻⁾, computed as the difference between the one-year stock return of a given firm and its *Industry Returns*, if positive (negative), zero else. Similarly, we include *Industry ROA* and *Industry-Adjusted ROA*⁺⁽⁻⁾.¹²

Following previous studies, we also control for size, growth options and CEO ownership, respectively through the natural log of firm sales (*Ln Sales*), the ratio of market to book value of equity (*Market-to-Book Ratio*) and the percentage of firm equity held by the CEO (*CEO Ownership*). The strong cross-sectional and time-series association between executive pay and size is consistent with the notion that larger firms, due to their complexity, require better skilled (and, thus, more ‘expensive’) executives (Gabaix and Landier 2008; Rosen 1992). 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). The negative relation between CEO pay and CEO ownership (e.g., Core et al. 1999) is consistent with less need for incentive pay when there is greater alignment of interests through ownership.

To control for any time-specific trends affecting growth in CEO pay, we include a linear *Trend* variable, equal to the fiscal year minus 1999 (2002) in the Pre (Post) Period.

¹² Note that we include the above performance measures as determinants of both total *and* cash CEO compensation. While cash bonus contracts are usually written based on accounting 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 2004). Also, 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.

Finally, we include firm fixed effects to control for omitted firm-specific characteristics that are constant through time (e.g., Murphy 1985).

5. Empirical Results

5.1 Descriptive Statistics on CEO pay

Table 1 shows the level and composition of CEO compensation for our sample of UK firms over the period from 2000 to 2005. Both cash and total CEO pay were relatively flat in the Pre Period, and then increased steadily in the Post Period (Panel A). This trend 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 improved substantially in the Post Period (while the accounting performance was similar). Table 1 (Panel B) also reveals that the weight of salary decreased in the Post Period relative to bonus and equity pay, probably due to 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, perhaps due to the expensing of options under IFRS 2 and investors’ skepticism about option-based compensation after the US scandals.

5.2 Voting Outcome and Responses to Say on Pay Votes

Table 3 reports descriptive statistics on voting outcomes in 2003 and 2004 for firms in the FTSE 350 index. Two insights emerge from these data. First, remuneration reports are generally approved by an overwhelming majority of votes cast. For example, in the 2003 proxy season, voting dissent (measured as votes against plus abstention votes) averaged 14.6%, with about one fourth of the cases where dissent was greater than 20%

(a threshold often viewed as an indication of substantial opposition) and only three cases where dissent was greater than 50%.¹³ One interpretation is that shareholders generally view compensation arrangements as the result of market forces or tend to protest against them only in extreme cases of abuse and when other available mechanisms do not work. The second key insight is that boards respond to voting dissent. For the three firms with dissent greater than 50% in 2003, the mean dissent dropped from 60.4% in 2003 to 9.5% in 2004. At the 65 firms with dissent greater than 20% in 2003, mean dissent dropped from 30.6% in 2003 to 11.6% in 2004, with only 9 of the 65 firms experiencing a dissent greater than 20% also 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 FY 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 “rewards for failure” (i.e. pay after poor performance). Strikingly, ten of the 12 firms with a notice period greater than 12 months (usually 24 months) reduced it to 12 months. A reduction in the notice period from 24 to 12 months essentially implies a reduction in severance pay from 2 to 1 years’ worth of annual pay. Many of these firms also explicitly note that this change is done without offsetting remuneration. Among the 12 firms that allowed retesting of the performance-based vesting conditions in their equity plans, six eliminated (four cases) or shortened (two) the retesting provision. Six firms imposed

¹³ Average dissent was even lower in 2004 (10.3%) and 2005 (6%; see ISS 2007). The low voting dissent is similar to the one reported for say on pay votes in Australia (Sheehan 2007) and for the few cases of voluntary say on pay votes in the US (Lublin 2009). It also mirrors the generally low percentage of votes in favor of most pay-related shareholder proposals (Ertimur et al. 2009; Thomas and Martin 1999) and against management-sponsored equity incentive plans (Thomas and Martin 2000) in the US.

tougher performance targets in the vesting conditions of their equity plan (e.g., higher EPS growth conditions 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 in their performance-based restricted stock plan.

Second, a number of firms responded to the voting dissent by hiring a new compensation consultant to perform an independent review (10 cases), establishing a formal consultation with major shareholders (seven cases), or both (four cases).¹⁴ Notably, about one fourth of the firms explicitly describe the above changes as the result of their consultation with shareholders (see Appendix 1 for examples).¹⁵

Finally, there 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 firms took initiatives to encourage executives' ownership (e.g., minimum ownership requirements, programs to offer shares in lieu of cash bonuses, mandatory holding periods after option exercises, etc.). Many of these changes follow best practice guidelines issued by UK institutional investors (Sheehan 2007).

That firms manage to reduce voting dissent by making changes to their compensation plans also implies that the low dissent in 2003 (first year under say on pay)

¹⁴ Publicly reported cases of consultation with shareholders are likely to understate the full extent of communication. Asked "has the extent to which companies actively consult with you about remuneration increased [after say on pay]," on a scale from 1 to 5, 60% (32%) of the surveyed UK institutional investors answered 5(4) (Deloitte 2004).

¹⁵ These data are consistent with the findings of a study commissioned by the UK government in 2004 (Deloitte 2004). According to this report, among the FTSE 100 (250) firms, the percentage of executives with 24-month notice periods fell from 32% (25%) in 2001 to 1% (5%) in 2004. Also, between 2001 and 2004, provisions banning retesting increased from 10% (25%) to 43% (50%) of the *new* plans in FTSE 100 (FTSE 250) companies. In 2003 alone, 37 of the FTSE 350 firms removed retesting provisions from their *existing* plans. The study also notes an increase in: i) the use of graded vesting schedules (where the degree of vesting is a function of performance) relative to 'hurdle' vesting, where all the awards vest if the performance threshold is achieved; ii) the level of consultation with shareholders and the frequency of changes explicitly tied to these consultations.

may be partly due to actions taken by firms *ahead* of the annual meeting. We provide some evidence on this issue in Table 4, column (ii), where we summarize compensation changes made during 2002 (i.e. *before* the vote) by a sample of 30 firms that received low voting dissent against their FY 2002 remuneration report. While somewhat lower relative to the high voting dissent group, the frequency of changes in “rewards for failure” provisions (particularly severance contracts and retesting) and consultations with shareholders remains substantial (considering that a fraction of these firms presumably did not have controversial pay practices to begin with). Also, many firms (14) hired a compensation consultant to perform an independent review, presumably to ensure compliance with best practices and perhaps provide external legitimacy to the choices of the compensation committee (Murphy and Sandino 2008). The evidence of changes ahead of the vote is in line with UK investors’ preference for ‘bargaining in the shadow’ (Black and Coffee 1994; Becht et al. 2008) and suggests that an exclusive focus on high *realized* voting dissent would not capture the potential impact of say on pay on firms with high *expected* voting dissent.¹⁶ For this reason we initially focus our empirical analysis on the full sample of UK firms subject to say on pay.

5.3 Multivariate Results

¹⁶ Consistent with our evidence, a search of press reports ahead of the 2003 annual meetings in the UK also indicates that a number of firms changed their compensation plans in anticipation of the say on pay vote (Rickford 2005). Anecdotal evidence suggests that similar forces would be at work in the US. At Verizon (one of the voluntary adopters of say on pay in the US), 90% of the votes were cast in support of the compensation report. As reported by the Wall Street Journal, two weeks before the meeting (and after consultation with institutional investors), Verizon eliminated two management perks to win investor support (Lublin 2009).

5.3.1 *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 Periods. Our main focus is on the test for differences in coefficients across the two periods ('Difference Post-Pre' column).

For both cash (Panel A) and total pay (Panel B) the analysis yields two main insights. First, there is a marked increase in the sensitivity of CEO pay to poor performance after the introduction of say on pay. In particular, the coefficients on *Industry-Adjusted ROA* and *Industry-Adjusted Returns*—both negative and insignificant in the Pre Period—become significant and positive in the Post Period, and the increase in the coefficients is statistically significant. One interpretation of this finding is that the introduction of say on pay led to higher accountability for poor performance—consistent with calls to eliminate “rewards for failure.” This result is consistent with, but incremental to the evidence in Table 4 and Appendix 1. Most of the documented changes (e.g., reduction in notice periods, removal of retesting, tougher performance-based vesting conditions) are *not* reflected in our measures of CEO cash and total pay and, thus, cannot drive our results. Hence, it appears that investors used say on pay not only to request changes in observable provisions, but also to pressure firms to increase the overall sensitivity of CEO pay to poor performance in less observable elements of pay (e.g., performance targets of bonus plans).¹⁷ Our finding also implies that firms did not offset (or ‘camouflage’) the explicit changes reported in Table 4 through other elements of pay which are harder for investors to monitor.

¹⁷ UK shareholders have long complained about the limited disclosure required with respect to performance targets of cash bonus plans (Deloitte 2004). The increase in the sensitivity of CEO cash pay to performance perhaps reflects greater disclosures about details of bonus plans in informal communication with investors, or may reflect changes proactively made by firms to avoid investors’ complaints.

The second key insight is that there is no change in the level and growth rate of CEO pay (after controlling for performance and other determinants). The coefficient on the *Post Period* indicator is insignificant and the coefficient on *Trend* does not change significantly across the two periods.¹⁸ Hence, it appears that say on pay did not have a moderating effect on compensation levels, subject to the following caveat: the effect of lower severance and tougher performance-based conditions in equity grants (Table 4) is not captured in our measures of CEO pay—hence we cannot completely exclude a reduction in total pay for a subset of firms. Nonetheless, it does not appear that target levels of pay systematically decreased after the introduction of say on pay.

Overall, we interpret these results as suggesting that levels and growth of CEO pay in the UK are by and large the result of market forces and that UK investors are mostly interested in affecting the design, rather than the level, of CEO pay.¹⁹

We perform a number of robustness tests (not reported). First, we restrict the analysis to firms with relevant data in at least two years (rather than one) in both the Pre and Post Period (resulting in an 11% drop in sample size). Second, we remove the observations from 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

¹⁸ In both the Pre and Post Periods, 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⁺*) 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*. As for CEO total pay, in both the Pre and Post Period it shows a significantly positive association with size (*Ln Sales*), positive stock and operating performance (*Industry-Adjusted ROA⁺* and *Industry-Adjusted Returns⁺*) and *Industry Returns*. The *Trend* variable is significant in both periods for both CEO cash pay and CEO total pay.

¹⁹ In the words of the Director of Investment Affairs at the Association of British Insurers: “we are still not comfortable opining on pound and pence... We don’t want to say, ‘He’s worth 600,000, not 800,000.’ Shareholders do not know enough to say it’s too much money. What’s the competitive situation? What’s the going rate for the job? There is a reluctance to opine on those things” (ISS 2007).

by firm. Industry effects are a major determinant of executive pay (Karuna 2007) and it is possible that variation in the response to say on pay occurred at the industry rather than firm level. We also compute standard errors clustered by firm-period (where the periods are the Pre and Post Period) following Chhaochharia and Grinstein (2009), who use a similar research design to study the impact of another regulatory event (board independence changes mandated by the Sarbanes Oxley Act) on CEO pay. Under all these alternative specifications, the key finding of Table 5—a significant increase in the sensitivity of CEO pay to poor performance—remains unchanged.

5.3.2 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 FY 2002 remuneration report (i.e. during 2003 proxy season, the first under the say on pay rule). Survey evidence suggests that voting dissent is higher in firms with controversial features in CEO contracts, such as long notice periods, low performance hurdles, retesting, one-time awards and discretionary payments (Deloitte 2004; ISS 2007; Sheehan 2007). In addition, Carter and Zamora (2009) show that voting dissent is higher in firms with higher salaries, weaker pay-to-performance sensitivity in bonus pay and greater potential dilution in equity pay. The second proxy is a regression-based estimate of ‘excess’ CEO pay in the Pre Period (defined as CEO pay in excess of the amount predicted by known economic determinants). Core et al. (1999)

show that this measure is associated with weaker governance and worse future performance.

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 season, resulting in about one-fourth of the firms being classified as *High Voting Dissent* firms. Then, we modify Equation (1) as follows:

$$\begin{aligned}
 \text{CEO Compensation} = & \\
 & \text{Low-Voting-Dissent} \times \left(\begin{array}{l} \text{Pre-Period} \times \left[\sum_{j=1}^{10} \alpha_j \times \text{Pay Determinants}_j \right] + \\ \text{Post-Period} \times \left[\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay Determinants}_j \right] \end{array} \right) + \\
 & \text{High-Voting-Dissent} \times \left(\begin{array}{l} \text{Pre-Period} \times \left[\sum_{j=1}^{10} \alpha_j \times \text{Pay Determinants}_j \right] + \\ \text{Post-Period} \times \left[\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay Determinants}_j \right] \end{array} \right) + \\
 & \text{Firm Effects} + \epsilon. \tag{2}
 \end{aligned}$$

Equation (2) effectively represents 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 whether coefficients change across periods, but also whether such changes differ across the two sub-samples, essentially resulting in a ‘difference-in-differences’ test.

As shown in Table 6, in the CEO cash pay 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; moreover, this increase is significantly greater than that of

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. Results are similar when the dependent variable is CEO total compensation (Panel B, where we report only the ‘Difference in Difference’ column to preserve space). However, in both panels, the degree of voting dissent does not seem to affect the change in the sensitivity of CEO pay to *Industry-Adjusted Returns* or any of the other determinants.

To examine the effect of say on pay on firms with excess CEO pay in the Pre Period, we proceed as follows: (i) we run the regression in Equation (1) over the Pre Period;²⁰ (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. Then, we substitute this indicator variable for the high (low) voting dissent variable 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).²¹ More importantly, the increase is significantly larger for the *Excess CEO Pay* firms (see ‘Difference in Difference’ column). In contrast, the increase in the sensitivity

²⁰ As dependent variable, we use the natural log of total compensation. Also, we modify Equation (1) to include industry effects rather than firm effects since firm effects may (also) proxy for firms’ propensity to over-pay. Hence, their inclusion may reduce our ability to capture excessive pay through the regression residual.

²¹ 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 failure” was (at least) one reason for their classification as *Excess CEO Pay* firms.

of CEO cash pay to *Industry-Adjusted Returns*, while higher in the Post Period for both groups, does not appear to be greater for *Excess CEO Pay* firms. The results are qualitatively similar in Panel B, where there is also some evidence of a greater increase in the sensitivity of CEO total pay to *Industry-Adjusted Returns* for *Excess CEO Pay* firms (P-Value = 0.11, ‘Difference in Difference’ column).²²

The evidence in Tables 6 and 7 raises the question of whether our proxies for voting dissent and excess CEO pay capture the same construct. This does not appear to be 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 not necessarily reflected in realized CEO total direct pay (e.g., retesting provisions, severance terms). Also, 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 implies that an advisory shareholder vote may affect CEO pay not only ex post (through firms’ response to voting dissent) but also ex ante, through the *threat* of voting dissent, consistent with the evidence of changes *before* the annual meeting in Table 4, column ii). In other words, *Excess CEO Pay* may be viewed as a proxy for expected high voting dissent had firms *not* adjusted their CEO pay practices.

The results in Table 7 also raise another set of questions. Is say on pay used by investors as a ‘hatchet’ to go after firms with high levels of CEO pay, even when the level of pay is justified by economic factors (and thus not ‘excessive’)? Or is it used as a

²² In both Table 6 and 7 it is worth noting that most of the ‘difference-in-differences’ tests are not significant, suggesting that the changes in coefficients are similar across the sub-sample and, thus, providing some comfort in the use of the model to infer differential changes in the sensitivity of CEO pay to poor performance.

‘scalpel’ when CEO pay appears abnormally high? To discriminate between these scenarios, we construct an indicator, *High (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 substitute this indicator variable for the high (low) voting dissent variable in Equation (2).

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). Combined, Tables 7 and 8 are consistent with shareholders using say on pay 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.

5.3.3 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. This test has important policy-making implications. For example, in the UK, the high concentration of institutional ownership is often credited for the tradition of collective engagement and behind-the-scene dialogue between firms and shareholders (Black and Coffee 1994; Rickford 2005). If say on pay’s impact is confined to only those firms with highly concentrated institutional ownership, then its adoption in countries with more fragmented ownership structures may be less effective.

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) and firm 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., Chhaochharia and Grinstein 2009; Core et al. 1999; Hartzell and Starks 2003). 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 also repeat the test using the top quartile rather than the median as the threshold, with similar results). Then, we substitute this indicator variable for the high (low) voting dissent variable in Equation (2).

For all three proxies, the results (reported in Tables 9, 10 and 11) show an increase in the sensitivity of cash and total CEO pay to poor performance in both firms with low monitoring and firms with high monitoring (see ‘Difference Post - Pre’ column). Most importantly, the increase does not differ significantly based on the level of monitoring (see ‘Difference in Difference’ column). Hence, the test does not provide clear support for the view of say on pay as a substitute or complementary mechanism, suggesting that its interaction with other monitoring mechanisms may be more nuanced.²³

5.4 Alternative explanations

5.4.1 The effect of contemporaneous changes in the UK governance environment

²³ We also run a regression of the absolute decrease in voting dissent from 2003 to 2004 (a proxy for likely changes to compensation plans) on board independence, institutional ownership concentration and size (untabulated). The coefficient on size and institutional ownership concentration is positive but not significant. Finally, we split the 30 firms with highest voting dissent in 2003 in two subsamples based on the frequency of changes to their compensation plans (based on Table 4). It appears that compensation changes (in particular the elimination of retesting and the reduction in notice period) are significantly more frequent in large firms, while there is no association with institutional ownership concentration and board independence.

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 aggregate 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). The AIM 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. Among other things, AIM firms are not subject to say on pay (DRR 2002). We construct an indicator variable *AIM Firms* equal to 1 for firms traded on the AIM (and 0 otherwise) and an indicator variable *UK Firms (non-AIM)* equal to 1 for UK firms traded on the major exchanges and subject to say on pay (and 0 otherwise). Then, we substitute these indicator variables for the high and low voting dissent variable in Equation (2).

The evidence in Table 12 suggests 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-differences test for *Industry-Adjusted Returns*²⁴ is only weakly significant. There are a number of caveats in interpreting this test. First, AIM firms are significantly smaller and have weaker governance structures than their counterparts traded on major exchanges (Mallin and Ow-Yong 2008), raising the question of whether a difference-in-differences test is informative. Second, the sample of AIM firms with available data is fairly small (75 firms) and the analysis may lack power. Indeed, in both Pre and Post

²⁴ 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 might have influenced AIM firms as well, due to their need to be competitive in the managerial labor market or in view of a future listing on non-AIM exchanges. These factors bias against finding any difference between AIM firms and firms not traded on AIM.

Period, few variables are significant (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. While we recognize these caveats, the test does not suggest that our results are driven by contemporaneous events 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 5.3.2), 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. First, in 2003 the National Association of Pension Funds (NAPF) and the Association of British Insurers (ABI)—the most influential institutional investor groups in the UK—released a handbook of executive pay best practices to provide firms and shareholders with guidelines on how to design and assess remuneration packages in view of the say on pay legislation (Deloitte 2004). However, these documents largely summarized principles already codified in previous reports and, thus, are unlikely to explain our findings. Second, in 2003 the UK government released a study on “Rewards for Failure” to address the problem of excessive severance payments (DTI 2003).²⁵ This report (and the threat of ensuing legislation) may have played a role in causing UK firms to adopt shorter notice periods, but it would not explain the other changes in Table 4 nor the change in the sensitivity of CEO pay (which does *not* include severance payments) to performance.

Notwithstanding the above, we acknowledge that it is impossible to fully separate the effect of a regulatory event from the forces behind its occurrence. We note, though,

²⁵ Similar to the Joint Statement on Best Practice on Contracts by ABI and NAPF issued in December 2002, the “Rewards for Failure” study advocated the use of one year notice periods, as well as the use of phased payments (relative to lump sum payments, phased payments may result in lower cost to the company if the executive finds another employment before the end of the notice period). For details, see House of Commons (2003).

that those forces had been in action already in the late 1990s (see Section 2), yet a steep and sudden decrease in the use of certain controversial provisions began only after the adoption of say on pay (see footnote 15), supporting a causality interpretation of our findings.

5.4.2 The effect of contemporaneous changes in mandated disclosures on executive pay

As mentioned in Section 2, the DRR 2002 also mandated enhanced disclosures with respect to executives' severance contracts, use of remuneration consultants and future remuneration policy (see Appendix 2). However, these new mandatory disclosures are unlikely to drive our findings.²⁶ When asked to assess the impact of different aspects of the legislations (advisory vote vs. disclosure) on a scale from 1 to 5, 70% of the surveyed UK institutional investors rated the advisory vote as 5 (where 5 equals "very significant impact"), whereas only 30% rated disclosures as 5 (Deloitte 2004).²⁷ This is not surprising, since the incremental disclosures added little to pre-existing requirements (see Appendix 2; Rickford 2005). Moreover, the additional disclosures mostly concerned termination payments, which are *not* included in our measures of CEO pay, and pensions, which represent a small fraction of CEO total pay.²⁸

5.4.3 Changes in the properties of the measure of operating performance

²⁶ This issue has significant implications for the generalizability of the findings to other countries. For example, opponents of say on pay in the US argue 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). Proponents of say on pay argue that, without stronger shareholder rights, more disclosure is (a necessary but) not a sufficient condition for greater shareholder involvement in the executive pay setting process (Bebchuk 2007a).

²⁷ The disclosure rating is overstated since it includes also investors' perceptions of any incremental *voluntary* disclosures due to the consultation process triggered by say on pay. As noted in the Deloitte (2004) report: "in discussions with shareholders, the consensus was that the best quality of disclosure ... occurred when there was a good level of consultation with shareholders."

²⁸ Even if the increase in disclosure had been substantial, the nature of its effect on *pay-to-performance sensitivity* would be far from clear. With respect to the *level* of pay, it has been argued that additional disclosures may lead to greater shareholder monitoring and thus a reduction in (excess) pay. However, other studies noted that enhanced 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" (Schaefer and Hayes 2009).

The nature of *Industry-Adjusted ROA*²⁹ 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 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.²⁹ In addition, inter-temporal changes in the nature of ROA cannot explain why the effect is contingent upon voting dissent or excess CEO pay and why it does not hold in AIM firms.

5.5 Discussion of findings: does say on pay result in value creation?

Overall, our findings suggest that in the UK shareholders used the threat or occurrence of say on pay votes to push for a stronger sensitivity of pay to poor performance in firms with controversial CEO pay practices. These results are consistent with calls to eliminate “rewards for failure,” which led to the say on pay legislation, and with the notion that say on pay was used where most needed.

²⁹ 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 *Industry-Adjusted ROA* is similar across the two periods.

While our evidence indicates that say on pay votes had an effect on CEO pay practices (in spite of their non-binding nature), the question of whether this effect is value-creating remains a challenging one. If one assumes that shareholders on average are able to identify sub-optimal compensation practices and recommend superior alternatives (a premise of say on pay), then our evidence that firms changed pay practices to prevent or reduce dissent would (by definition) indicate an improvement in CEO compensation. However, critics have questioned this assumption (Bainbridge 2008), arguing that a say on pay regime would deter innovation in compensation practices and result in a sub-optimal ‘one-size-fits-all’ approach, with firms adopting ‘best practices’ with unproven benefits as a means to win shareholder support (Gordon 2009).³⁰ Alternatively, one can point to our evidence of an increase in the sensitivity of pay to poor performance in firms with excess CEO pay in the Pre Period (note that the excess pay was partly due to the *negative* sensitivity of pay to poor performance; see Table 7 and footnote 20). Since previous studies have shown that excess CEO pay is associated with subsequent deterioration in performance (Core et al. 1999), our result may be interpreted as a positive effect of say on pay. Finally, we note that Cai and Walkling (2007) analyze the passage of the say on pay bill by the House of Representatives in the US in 2007 and find a positive stock price reaction for firms with excess CEO pay and firms more likely to experience dissent over pay practices, suggesting that shareholders (who are aware of the UK experience) view say on pay as a value creating mechanism for these firms.

³⁰ It should be noted that the recommendations in the Combined Code “all are rooted in the actions and experience of leading companies” (Cadbury 2002, p.17). Nonetheless, a concern remains that in the US the development of best practices on executive pay will be outsourced to proxy voting services with incentives to recommend one-size-fits all solutions rather than develop costly firm-specific analyses (Gordon 2009).

Notwithstanding these arguments, we remain cautious in drawing inferences about the optimality of say on pay, leaving to future research the examination of all its costs and benefits, including any potential side effects.³¹

5.6 Policy-making implications: caveats

In interpreting our study, policy-makers in other countries should consider the following factors. First, detailed disclosure requirements on executive pay, an active financial press, a deep director labor market, significant shareholder power in electing directors,³² well-established best practices and certain characteristics of institutional investors (stability, geographical concentration, limited regulatory hurdles to coordination efforts) may be necessary prerequisites for the documented effects of say on pay in the UK. Codified best practices provide firms and shareholders with a clear benchmark against which to make assessments of pay practices³³ and high-quality disclosures are necessary to make such assessments. Communication and coordination among institutional investors with long horizons is likely to increase the effectiveness of say on pay. Media coverage, a deep director labor market and, most importantly, strong shareholder power in directors' election enhance directors' reputational incentives associated with adverse shareholder votes. In the US, for example, the codification of

³¹ Supporters of say on pay 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 (Davis 2007; 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 (Kaplan 2007).

³² Under Section 168 and 303 of the Companies Act 2006, in the UK shareholders owning 10% or more of the voting rights can call a special meeting and ask for the removal of any and all directors and the election of their nominee through ordinary resolution. Proposals to elect or remove a given director represent the vast majority of the shareholder proposals submitted at UK firms (Buchanan and Yang 2008). Becht et al. (2008) provide some examples of the power of the threat of calling a special meeting.

³³ For example, the ABI guidelines make clear that institutional investors prefer a notice period of 1 year, the use of total shareholder returns relative to peers as performance criterion for restricted stock plans and a performance-based vesting period of no less than 3 years (Sheehan 2007). Best practices are also flexible in that they are frequently updated to reflect investors' preferences (for example, until 1999, the accepted norm for notice periods had been 3 years).

governance best practices is a recent phenomenon, often led by proxy advisory services rather than institutional investors, and has not achieved a degree of influence and legitimacy comparable to the UK (though say on pay may accelerate this process). Institutional investors tend to hold their stakes for shorter periods than in the UK and face more regulatory constraints in terms of coordination and communication (Black and Coffee 1994). As for directors elections, short of running a costly proxy fight, US shareholders have limited power (Bebchuk 2007b), though the recent trend toward majority voting and the use of vote-no campaigns have increased directors accountability (Cai et al. 2007, 2009; Del Guercio et al. 2008).

Second, policy-makers need to assess the merits of say on pay vis-a-vis alternative mechanisms, such as compensation-related shareholder proposals and vote-no campaigns.³⁴ Ertimur et al. (2009) find that in the US vote-no campaigns related to compensation issues have been successful in reducing excess CEO pay and that firms have sometimes been responsive to shareholder proposals related to executive pay.

6. Conclusion

CEO pay has become a major concern for institutional investors worldwide (e.g., Watson Wyatt Worldwide 2006). In response to these concerns academics, practitioners, and regulators have advocated various reforms. A mechanism that has received

³⁴ In the US, any shareholder holding shares worth \$2000 (or 1% equity) can submit one 500-word non-binding proposal in the annual proxy statement. In the UK, a shareholder can submit more than one, 1000-word binding proposal, but the ownership requirement is more onerous. The proponent needs to own at least 5% of the firm's voting rights, or be a group of at least 100 shareholders with no less than GBP100 per holder (although formation of this group has proven to be not too difficult; Black and Coffee 1994). Notably, only 2 proposals were submitted at UK firms between 2000 and 2006 on issues related to executive pay (Buchanan and Yang 2008), versus more than 1000 proposals between 1997 and 2007 in the US (Ertimur et al. 2009).

considerable attention is the annual advisory shareholder vote on the executive pay report (“say on pay” vote) introduced through legislation in the UK in 2002.

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 and after 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 forces. However, we find an increase in the sensitivity of CEO pay to poor performance, particularly in firms with controversial CEO pay practices, consistent with calls to eliminate “rewards for failure” that led to introduction of say on pay. Small sample analysis of specific changes to compensation contracts confirms the increased accountability of CEO pay to poor performance after the introduction of say on pay.

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 and, more generally, in corporate governance. 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.

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

Changes to severance contracts: reduction of notice periods to 12 months

“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*

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*

Changes to performance-based stock option 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' 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*

“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*

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”. *GlaxoSmithKline, FY 2003, Annual Report*

Changes to performance-based restricted stock plans

“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 [international] pharmaceutical companies...would provide a better assessment of the company's performance.” *GlaxoSmithKline, FY 2003, 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*

“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*

“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*

Change to annual 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*

Other Changes

“...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...Deloitte's independent review produced the following key findings...” *GlaxoSmithKline, Annual Report, FY 2003*

“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*

“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.” *Luminar plc, Annual Report, FY 2003*

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*

“This [new] policy was formulated ... 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... *Berkeley Group Holdings, FY 2003, Annual Report*

“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.” *Freepoint, 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*

“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*

“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*

“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...” *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*

“...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*

“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*

Appendix 2: Executive Compensation Disclosure Requirements in UK

	Remuneration-related disclosure requirements under the Director Remuneration Report Regulations 2002 (DRR)	Remuneration-related disclosures already required under the United Kingdom Listing Authority (UKLA) Listing Rule 12.43A
Auditable Information*	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"> - 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. - Exercise price, vesting date and maturity for any option award still outstanding at the end of the year. - Market price at exercise date for any option exercised during the year. - Performance criteria upon which the award or exercise is contingent upon. - The above data need to be provided separately for options with different terms and conditions. 	Broadly similar to DRR
	Long-term incentive schemes: <ul style="list-style-type: none"> - Similar to stock options disclosures - Requirement to disclose the value of money or assets receivable for schemes that have vested. 	Broadly similar to DRR.
	Pension and retirement benefits: accrued benefits at the end of the year and changes during the year.	Not required (information often provided).
	Above information also for non-executive directors	Not required
Non-Auditable Information	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.

* 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
Cash Pay	430	417	446	499	538	622	491	310	314	335	378	404	484	363
<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
Equity Pay	338	355	321	434	481	610	420	72	82	48	121	136	214	100
<i>Other Pay</i>	61	65	70	70	94	103	77	28	29	34	34	39	44	34
Total Pay	828	836	835	1000	1105	1323	984	468	478	467	585	622	820	549

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%
Cash Pay	67%	67%	70%	66%	65%	63%	67%	69%	69%	73%	68%	67%	60%	68%
<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%
Equity Pay	23%	23%	19%	25%	25%	29%	24%	19%	20%	13%	23%	23%	31%	21%
<i>Other Pay</i>	9%	10%	11%	9%	10%	9%	10%	7%	7%	9%	7%	7%	7%	7%
Total Pay	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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>Raw Returns</i>	-31.3%	-3.5%	-2.6%	18.0%	5.3%	24.2%	32.6%	47.4%	11.6%	15.2%
<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 Returns</i>	-21.9%	-1.8%	1.9%	20.0%	-24.9%	-5.1%	-0.1%	16.4%	-3.5%	0.9%
<i>ROA</i>	2.4%	7.0%	6.5%	12.2%	3.0%	7.2%	7.1%	12.1%	7.1%	6.8%
<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>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>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. *Raw Returns (ROA)* is the 1-year stock return (ROA, return on operating assets) of a given firm. *Industry Returns (ROA)* is the average stock returns (ROA) of firms in a given industry. *Industry-Adjusted Return (ROA)* is the difference between *Raw Returns (ROA)* and *Industry Returns (ROA)* for each firm. *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

	Proxy Season 2003 (FY 2002)	Proxy Season 2004 (FY 2003)
Variable	FTSE 350	FTSE 350
Mean Voting Dissent (AVD) - Constant Sample (N=245)	14.6%	10.3%
Median Voting Dissent (AVD) - Constant Sample (N=245)	10.9%	6.4%
Number (%) Firms with AVD > 50%	3 (1.2%)	4 (1.6%)
Among Firms with AVD > 50%:		
<i># Firms with decrease in voting dissent next year</i>	<i>3 out of 3</i>	<i>N/A</i>
<i>Mean decrease in voting dissent next year</i>	<i>50.9% (from 60.4% to 9.5%)</i>	<i>N/A</i>
<i># of Firms with AVD>50% next year</i>	<i>0 out of 3</i>	<i>N/A</i>
Number (%) Firms with AVD > 20%	65 (26.5%)	29 (11.8%)
Among Firms with AVD > 20%:		
<i># Firms with decrease in voting dissent next year</i>	<i>60 out of 65</i>	<i>N/A</i>
<i>Mean decrease in voting dissent next year</i>	<i>19.0% (from 30.6% to 11.6%)</i>	<i>N/A</i>
<i># of Firms with AVD>20% next year</i>	<i>9 out of 65</i>	<i>N/A</i>

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 (mean voting dissent 14.6% and 10.2% in 2003 and 2004, respectively). 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. In including abstention votes, we follow the convention of UK proxy voting services, according to which investors cast abstention votes as a way to express dissent and warn the firm that next time they will vote against if no action is taken.

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
...change to severance contract		
...reduction of notice period (NP) to 12 months	10	8
...as a % of 12 firms with NP >12 months	83%	89%
...change to performance-based stock option plan	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
...change to performance-based restricted stock plan	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
...change to annual bonus plan	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
...other changes	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
...at least one of the above changes	26	26
...as a % of 30 firms	87%	87%
...introduction of process of consultation with shareholders	7	4
...as a % of 30 firms	23%	13%
...an explicit link between (at least one of) the above changes to consultation with shareholders	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> ⁺	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> ⁻	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> ⁺	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> ⁻	-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, Panels A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:

$$\text{CEO Compensation} = \text{Pre-Period} \times \left[\sum_{j=1}^{10} \alpha_j \times \text{Pay Determinants}_j \right] + \text{Post-Period} \times \left[\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay Determinants}_j \right] + \text{Firm Fixed Effects} + \varepsilon.$$

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*^{+(·)} 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*^{+(·)} 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	P val	Pre Period	Post Period	Difference Post - Pre	P val	Difference in Difference	P val	Difference in Difference	P val
Coeff.	Coeff.	Coeff.		Coeff.	Coeff.	Coeff.		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</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</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</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</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, Panels A and B, present results from the following pooled OLS regression for a sample of 1,564 firm-year observations between 2000 and 2005:

$$\text{CEO compensation} = \text{Low-Voting-Dissent} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{High-Voting-Dissent} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{Firm-Fixed-Effects} + \varepsilon.$$

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> ⁺	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> ⁻	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> ⁺	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> ⁻	-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, Panels A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:

$$\text{CEO compensation} = \text{No-Excess-CEO-Pay} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{Excess-CEO-Pay} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{Firm-Fixed-Effects} + \varepsilon.$$

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> ⁺	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> ⁻	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> ⁺	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> ⁻	-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:

$$\text{CEO compensation} = \text{Low-Total-CEO-Pay} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{High-Total-CEO-Pay} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{Firm-Fixed-Effects} + \varepsilon$$

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)										Y = Ln (CEO Total 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> ⁺	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> ⁻	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> ⁺	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> ⁻	-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, Panels A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:

$$\text{CEO compensation} = \text{Low-Instit-Own} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{High-Instit-Own} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{Firm-Fixed-Effects} + \varepsilon$$

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		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	0.38		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> ⁺	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> ⁻	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> ⁺	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> ⁻	-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, Panels A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:

$$\text{CEO compensation} = \text{Low-Bd-Indep} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{High-Bd-Indep} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{Firm-Fixed-Effects} + \varepsilon$$

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> ⁺	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> ⁻	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> ⁺	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> ⁻	-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:

$$\text{CEO compensation} = \text{Small} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{Large} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{Firm-Fixed-Effects} + \varepsilon$$

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	P val	Pre Period	Post Period	Difference Post - Pre	P val	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> ⁺	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> ⁻	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> ⁺	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> ⁻	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, Panels A and B, present results from the following pooled OLS regression for a sample of 3,305 firm-year observations between 2000 and 2005:

$$\text{CEO compensation} = \text{AIM} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{UK} \times [\text{Pre-Period} \times (\sum_{j=1}^{10} \alpha_j \times \text{Pay-Determinants}_j) + \text{Post-Period} \times (\beta_0 + \sum_{j=1}^{10} \beta_j \times \text{Pay-Determinants}_j)] + \text{Firm-Fixed-Effects} + \varepsilon$$

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.