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Abstract

This paper offers a new explanation of the gender pay gap in leadership positions by examining the relationship between managerial bonuses and company performance. Drawing on findings of gender studies, agency theory, and the leadership literature, we argue that the gender pay gap is a context-specific phenomenon which results partly from the fact that company performance has a moderating impact on pay inequalities. Employing a matched sample of 192 female and male executive directors of UK listed firms we corroborate the existence of the gender pay disparities in corporate boardrooms. In line with our theoretical predictions, we find that bonuses awarded to men are not only larger than those allocated to women, but also that managerial compensation of male executive directors is much more performance-sensitive than that of female executives. The contribution of attributional and expectancy-related dynamics to these patterns is highlighted in line with previous work on gender stereotypes and implicit leadership theories such as the romance of leadership. Gender differences in risk-taking and confidence are also considered as potential explanations for the observed pay disparities. The implications of organizations' indifference to women's performance are examined in relation to issues surrounding the recognition and retention of female talent.

Keywords: executive compensation, gender pay gap, gender stereotypes, implicit leadership theories, corporate performance, romance of leadership

JEL Classifications: J31, J33, M52, G30.

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INTRODUCTION

Despite decades of anti-discriminatory legislation, the gender pay gap still persists. The fact that women are paid less than men has been reliably documented around the world (e.g., Blau and Kahn, 2000; Lloyd and Niemi, 1979; Roos and Gatta, 1999). In industrial countries, this gap ranges from 15 per cent in the EU (Commission of the European Communities, February 2007), through 17 per cent in the UK (Equal Opportunities Commission, 2005), to 23 per cent in the US (DeNavas-Walt, Proctor, and Lee, 2005; Institute for Women's Policy Research, August 2006). Moreover, according to the United Nations, the gap is even wider in developing countries: it amounts to approximately 35 per cent in Asia, 46 per cent in Africa and 51 per cent in Latin America (Chen, Vanek, Lund, and Heintz, 2005; Ferroni, 2005).

Yet while the gender pay gap is pervasive, its size varies as a function of a number of contextual factors (Werner and Ward, 2004). In particular, the gap differs across industries (Allen and Sanders, 2002), occupations (Kidd and Gonion, 2000), and levels of seniority. Indeed, a consistent finding is that as women climb the corporate ladder the pay gap becomes larger — reaching up to 30 per cent in top managerial positions (Arulampalam, Booth, and Bryan, 2005; Benassi, 1999; Equal Opportunities Commission, 2003; Weinberg, 2004). Thus, it appears that while the gender pay gap is universal, it plays itself out differently across contexts.

Most of the existing literature that has explored this pay gap focuses on men’s and women’s salaries while gender effects on other pay elements such as bonuses and other incentives are largely ignored (Gerhart and Rynes, 2003; Werner and Ward 2004). Moreover, Gomez-Mejia and Wiseman (1997) call for further research on the process of performance appraisal of executives and, in particular, on the role of behavioral factors in this process.

This paper integrates insights from the management literature on the relationship between pay and performance with those of social psychological studies of women in leadership roles. In doing so, it contributes to the literature on gender pay differences and on executive compensation in a number of ways. First, this study examines executive remuneration (in particular, bonuses) in the broader context of gender discrimination. Second, it identifies *company performance* as an additional contextual factor that influences gender differences in pay (specifically, the compensation awarded to senior executives). Third, this paper makes a more general theoretical contribution by examining the mechanisms through which attributional biases affect the pay setting process. As we will observe, these biases have the capacity to lead to variation in the relationship between managerial compensation and performance as a function of the managers' gender.

A consideration of the contribution that organizational context makes to gender pay disparities at managerial levels is important for at least three reasons previously identified in the literature. First, a number of principal-agent theory models suggest that the optimal compensation package for managers is one that links managerial pay to some measures of company performance and thus mitigates agency costs (see e.g., Devers, Cannella, Reilly, and Yoder, 2007; Murphy, 1999). Nevertheless, the relationship between pay and performance is not straightforward (Gomez-Mejia and Wiseman, 1997; Murphy, 1999) and its negotiable and discretionary nature provides an opportunity for discrimination (Alkadry and Tower, 2006; Lloyd and Niemi, 1979; Madden, 1973). Second, prior research has demonstrated that corporate performance affects the perceived suitability of men and women for managerial positions (as suggested in Ryan and Haslam's, 2005 and 2007, analysis of the *glass cliff*). However, while this might be expected to spill over into the bonuses they receive, whether or not it actually does is unclear. Third, company performance plays a critical role in the evaluation of business leaders, with research suggesting that company

performance tends to be attributed directly to the leader, with relatively little attention being paid to external factors such as market forces. This phenomenon is referred to as the *romance of leadership* (Meindl, Ehrlich, and Dukerich, 1985). However, more recent research specifically examining the processes that underpin bonus allocations and its relationship to company performance indicates that these allocations may depend on the gender of the person evaluated (Kulich, Ryan, and Haslam, 2007). This paper brings these various points together in a forensic study of the relationship between the gender of organizational leaders and the performance-related bonuses they receive.

A leader is typically associated with masculine traits such as competence and the ability to influence (Schein, 2001).[1] Accordingly, women in leadership positions may be perceived to lack these traits (e.g., Eagly, Makhijani, and Klonsky, 1992) and implicit leadership theories about a leader's influence on corporate performance may not apply to female managers (Kulich et al., 2007). Moreover, if corporate outcomes are attributed to the actions of male leaders but not those of female leaders, then we expect that the monetary rewards they receive may be affected by the same asymmetry. This means that pay-performance sensitivity will tend to be stronger for male directors than for their female peers. This prediction is also consistent with the agency literature on managerial compensation which argues that the pay-performance relationship is stronger when an agent (i.e., a manager) has more impact on performance (see e.g., Miller, Wiseman, and Gomez-Mejia, 2002). Importantly, we extend this theoretical claim and argue that a similar pattern could be observed not only when agents *are* more instrumental in achieving particular performance outcomes, but also when they *are perceived* to be more instrumental in reaching these goals.

[1] While throughout the paper we focus on the gender dimension and argue that female leaders are likely to be considered atypical, many of the arguments invoked here also apply to other groups (e.g., ethnic minorities) as we allude to in the Discussion.

Specifically, if remuneration committees are indeed affected by the aforementioned attributional biases (i.e., they perceive female leaders to be less instrumental in achieving particular corporate outcomes), then female managers' pay will be less sensitive to company performance and, consequently, less risky.

The empirical results of this paper speak to evidence that there is a significant gender pay gap in executive positions throughout the UK when controlling for industry, company size, and director position. Importantly though, this study extends the literature by examining the gender pay gap as a function of company performance, and thereby exploring the context-sensitivity of gendered remuneration. As we detail below, our analysis of executive bonuses reveals that there is a positive relationship between company performance and bonuses for male executives, but not for female executives. These results not only add to the literature on the gender pay gap, but also contribute to empirical research on executive compensation in general.

THEORY AND HYPOTHESES

Women and pay

It is well documented that women in managerial positions typically face a *glass ceiling*, an invisible barrier which prevents them climbing the corporate ladder (Daily, Certo, and Dalton, 1999; Wall Street Journal, 1986; Wirth, 2004). However, the obstacles that women encounter can become more prominent the further they progress in their careers (Benassi, 1999; Equal Opportunities Commission, 2003; Lyness and Thompson, 1997; Maume, 2004; Powell, 1999). As a result, less than three per cent of top-level positions within companies are occupied by women (Wirth, 2004).

This reality is accompanied by patterns of unequal compensation for men and women which become more pronounced at senior levels (e.g., Arulampalam et al., 2005). To account for this, previous research has generally focused on *occupational sex segregation* — demonstrating that the roles which women typically occupy tend to be in lower-paying areas such as human resources or marketing (Kidd and Gonion, 2000; Macpherson and Hirsch, 1995), or in female-dominated (and lesser-funded) industries such as healthcare or teaching (Allen and Sanders, 2002). Furthermore, *human capital* research indicates that women earn less due to gender differences in education, years of experience, or tenure (Roos and Gatta, 1999; Sicilian and Grossberg, 2001).

However, even if women are in full-time employment and have maintained continuous careers, or work in male-dominated professions, they still receive lower compensation than men with comparable qualifications and experience (Alkadry and Tower, 2006; Joshi, Makepeace, and Dolton, 2007). For these reasons, it appears that women's differential career choices and experience cannot entirely explain the pay gap. This, then, can be seen to result from discrimination (Jarrell and Stanley, 2004; Stanley and Jarrell, 1998) or to be an effect of other factors that have not yet been tested.

Company performance and pay

Most research on the link between executive compensation and company performance is founded on *agency theory* (Eisenhardt, 1989; Holmström, 1979). The implicit assumption in the agency paradigm is that a manager has some control over corporate outcomes and therefore his or her actions are (at least partly) reflected in the observed indicators of company performance. By this logic, company performance is seen to reflect a manager's actions, with better performance indicating that the manager has acted for the

benefit of shareholders. Within this framework, compensation serves as a motivator that aligns the interests of managers with those of shareholders (Murphy, 1999).

The premise that a properly designed compensation contract can induce managers to behave in a desirable way accords with traditional economic theories of motivation (after Taylor, 1911; e.g., see Ellemers, de Gilder, and Haslam, 2004; Haslam, 2001) and is enshrined in the UK corporate governance regulation. Indeed, according to the Combined Code of Corporate Governance "a significant proportion of executive directors' remuneration should be structured so as to link rewards to corporate and individual performance" (Financial Reporting Council, 2003, p. 12).

Yet, despite theoretical predictions about the pay-performance relationship and the corresponding governance guidelines, empirical studies indicate that the link between managerial compensation and corporate performance can often be tenuous. While some authors have documented a strong and positive link between directors' pay and firm performance (e.g., Murphy, 1999; Renneboog and Trojanowski, 2006) others have not (e.g., Barkema and Gomez-Mejia, 1998; Bebchuk and Fried, 2004; Jensen and Murphy, 1990; Thierry, 1998). Indeed, the meta-analysis by Tosi, Werner, Katz, and Gomez-Mejia (2000) demonstrates that firm size accounts for most of the explained variance in total chief executive officer (CEO) pay, whereas company performance explains less than 5 per cent of total variance. The authors argue that this result may emerge due to the fact that most research focuses on easily observable performance indicators as benchmarks in remuneration contracts, whereas companies utilize more complex measures of performance (a combination of accounting or market-based performance measures relative to peer groups) or indicators that are difficult to measure (e.g., subjective assessment of other job-relevant dimensions such as employee satisfaction and well-being).

Alternative determinants of executive compensation include political, organizational, and social psychological factors (Devers et al., 2007; Gomez-Mejia and Wiseman, 1997). In particular, managerial remuneration seems closely related to a manager's relative power and is therefore a product of political factors other than actual performance (e.g., Bebchuk and Fried, 2004; Belliveau, O'Reilly, and Wade, 1996; Haslam, 2001). Indeed, CEOs may be more interested in (and have more influence on) increasing firm size than maximizing profits especially since firm size is associated with more pay, power, and prestige. Consistent with this idea, Tosi, Misangyi, Fanelli, Waldmann, and Yammarino (2004) found that the pay package of Fortune 500 CEOs are positively related to ratings of CEO charisma, while company performance indicators do not predict managerial remuneration.

The lack of a clear pay-for-performance relationship suggests the possibility that remuneration may be partially determined by discriminatory practices (Alkadry and Tower, 2006; Lloyd and Niemi, 1979; Madden, 1973). In particular, it is apparent that if the relationship is not clear-cut, there is considerable latitude for interpreting the nature of (a) good company performance, (b) good leadership, and (c) appropriate reward. Along these lines, we argue in detail below that such judgments are susceptible to the influences of both leader and gender stereotypes (e.g., as also suggested by Eagly and Karau, 2002; Schein, 2001).

The romance of leadership

Social psychological research has taken a perspective that differs from that of the economic literature, in suggesting that leadership — and in particular the perceived relationship between leaders and group performance — is actually a social construct informed by romanticized conceptions that people have about leaders (Meindl et al., 1985). More specifically, Meindl et al. (1985) argue that implicit theories based on an individual's

role (e.g., as a leader) or group membership (e.g., as a man or a woman) have the capacity to influence or bias perceptions of their abilities and competencies (see also Pyszczynski and Greenberg, 1981). Illustrative support for these arguments emerges from an experiment by Pillai and Meindl (1991) where participants were provided with biographical information about the male CEO of a fast food company accompanied by details of the company's performance over the previous decade. The biographical information given to the participants was the same, but in different conditions participants were told (a) that the company had experienced either growth or a decline and (b) that this had been either moderate or dramatic. As predicted, the leader was seen as most charismatic when his company had experienced dramatic improvement and least charismatic when it had undergone dramatic decline. A similar pattern is also identified by Meindl et al. (1985) in a survey of over 30,000 press articles relating to 34 different companies. This study identified a significant and strong correlation between performance increases and references to leadership in the articles' titles ($r = 0.53$). Meindl (1993) argues that such findings reflect the fact that those who judge organizational activity focus more on the way that leaders can contribute to organizational change than on the situational and contextual factors that might yield the same result (see also Salancik and Pfeffer, 1978). In effect, the romance of leadership can thus be seen as a special case of the fundamental attribution error or correspondence bias (Jones, 1979; Nisbett and Ross, 1980), which leads observers to explain social phenomena as a product of individual acts rather than situational influences.

Gender, company performance and pay

Although work on the romance of leadership suggests that company performance may play an important role in the formation of perceptions of leaders' abilities — and hence the rewards they receive (e.g., in the form of pay and bonuses) — there are a number of

reasons for suspecting that the evaluation of leaders and their leadership may not work in the same 'romantic' way for men and women (Kulich et al., 2007). In particular, this is because people's perceptions and evaluations of female managers may differ significantly from those of male managers.

One reason for this is that the image of a typical leader tends to be associated with male traits (e.g., Schein, 2001) and the traditional stereotypes of women do not fit the expectations of what it means to be a 'good' leader (Eagly et al., 1992; Fiske, Xu, Cuddy, and Glick, 1999). More specifically, stereotypes tend to describe women as being *communal* in the sense of having soft and warm traits. These qualities are generally viewed positively, but they may not be considered particularly useful in a managerial context where *agentic* qualities, such as the ability to exert influence and implement change, are valued. Such assumptions are compounded by the fact that women may be regarded as a lower-status group than men and this tends to be associated with perceptions of lower instrumentality (Fajak and Haslam, 1998; Lorenzi-Cioldi, 2006). Consequently, these perceptions go against the notion that women can be effective leaders.

In a similar vein, Lee and James (2007) show that appointments of a male CEO are received by investors more positively than those of a female CEO, which may reflect the fact that female CEOs are less trusted as leaders (compared to male CEOs). Moreover, these researchers demonstrate that if a female is promoted internally to the CEO position, such an appointment is viewed more positively than an external hire. However, this is not the case for male CEOs. Apparently, the previous presence of the female director in the company signals her ability to lead and, consequently, the lack of pre-existing theories about women in CEO positions is less relevant in such a case (Pyszczynski and Greenberg, 1981). In contrast, the assessment of leadership abilities of newly-appointed male CEOs does not appear to be influenced by their previous familiarity with the firms that they are to manage.

These differences in the perceptions of men and women can lead to distinct, gender-based evaluations of performance (Eagly et al., 1992). Not only may women's performance be underrated in male-dominated contexts, but they may even be punished for showing gender role-disconfirming behaviors (see e.g., Eagly and Karau, 2002; Eagly, Karau, and Makhijani, 1995). Such views can have direct implications for pay. Consistent with this suggestion, Bowles, Babcock, and Lai (2007) observe that women are more likely than men to be punished for being overly competitive in pay negotiations (see also Babcock and Laschever, 2003).

Moreover, agency theory implies that if female managers are not perceived by pay setters to be agents who are instrumental in delivering desired corporate outcomes, then they may be less likely to receive performance-sensitive compensation. In the agency framework, one of the key factors determining the effectiveness of performance-contingent pay in aligning the objectives of the agent with those of the principal is the degree of control that the agent can exercise over performance outcomes (Miller et al., 2002). Hence, such a compensation design could expose female managers to excessive risk and, eventually, result in undesired consequences. For instance, such a contract may induce the agent to withhold the effort or take evasive actions designed to reduce her risk exposure (see Devers, McNamara, Wiseman, and Arrfelt, 2008, for similar arguments).

All these factors may contribute to variation in strength of pay-for-performance relationship that differs as a function of gender. Furthermore, the lack of pre-existing theories of women's role as managers along with the conflict between gender and leadership stereotypes may lead to a closer scrutiny of female managerial actions (Lee and James, 2007). Testing this idea, Kulich et al. (2007) conducted a scenario-based experiment to investigate whether the romance of leadership is reflected in remuneration decisions. This experiment presented participants with scenarios describing either a troubled or a flourishing

company headed by either a male or a female managing director. The participants were then asked to evaluate the director's charisma and leadership ability, and to award him or her a performance-based bonus. The study revealed that the male director was rewarded with a high bonus when company outcomes were good and penalized with a low bonus when outcomes were bad. However, contrary to notions of the romance of leadership, the female director's bonus did not vary with company performance, but instead was only related to perceptions of leadership ability and charisma. Mediational analyses also suggested that participants reflected more carefully on the female manager's potential influence on the company's performance whereas the male manager was automatically perceived as the cause of good or bad performance and rewarded accordingly.

The present study

Previous research suggests that company performance has a strong bearing on the evaluations of top management and on the remuneration processes as the result of implicit theories about leaders and their assumed role in organizational activities. Yet, as noted above, the previous work of Kulich et al. (2007) serves to question the idea that this relationship will necessarily be the same for men and women (see also Haslam et al., 2001). However, this work was scenario-based and the participants were not executives, and hence these findings may have only limited external validity. To address these limitations, the present study explores the relationship between executive pay and company performance in a real organizational setting, using authentic economic data. In line with the theoretical premises outlines above, our hypotheses are:

H1. Bonus allocations vary as a function of gender: male executive directors' bonuses are higher than those of female executive directors.

H2. The performance-sensitivity of directors' bonuses varies as a function of gender: male executive directors' bonuses are more sensitive to organizational performance than those of female executive directors.

Therefore, our approach not only allows us to re-examine the existence of the gender pay gap in the context of senior executive positions, but also to identify two additional (and more subtle) dimensions of pay discrepancies: gender differences in (1) the structure of managerial compensation packages and (2) the sensitivity of such packages to company performance. To explore the hypotheses, we examine the bonuses granted to men and women in executive positions in a cross-section of listed UK companies.[2] Given that the executive directorship positions that men and women typically occupy differ on a range of dimensions, we control for industry, company size, and nature of the director position by obtaining data from a sample of men and women matched on these dimensions.

METHOD

Sample

We examine a sample of UK listed firms over a seven-year period (1998-2004). Two datasets are merged: the BoardEx database containing information about board members' characteristics (such as compensation and demographic variables) and the Thomson ONE Banker database, which provides us with firm characteristics (such as accounting data, stock market data, and industry affiliations).

[2] The meaning of the term "director" differs between the UK and the US context. Throughout the paper, we mean by executive directors, individuals who are inside directors performing the role of executive officers (according to the US terminology) and who are members of the board of directors. Importantly, in the UK executives make up a larger proportion of the board than it is the case in the US (Conyon, Peck, and Sadler, 2001).

In a second step, we identify the firm-years during which at least one female executive director was on the board of directors. We match each of these female directors with a male director who performs the same role in an industry- and size-matched company.[3] Previous research has suggested that these three variables (director role, company size, and industry) can explain a substantial part of the cross-sectional variation in executive compensation packages (Bebchuk, Cremers, and Peyer, 2007; Ezzamel and Watson, 1998; Tosi et al., 2000). These variables also affect the likelihood that a female fulfills a particular director role in a particular firm (Niessen and Ruenzi, 2007; Singh and Vinnicombe, 2006; Wirth, 2004).

In total, we identify 96 matched pairs of executive directors. As some of the pairs can be observed over a number of years, the total sample size comprises 524 firm-year observations (262 for female executives and 262 for male executive). The data on some of the variables of interest is not available for a number of firm-years, which further limits the size of the samples available for some of the analyses below. Due to the relatively small sample sizes, the analyses reported below are based on pooled data and do not explicitly take into account panel structure of the database, which can be considered a limitation of our study.

The sample covers a broad range of industries, representing 9 out of 10 major industries distinguished by the Industry Classification Benchmark (ICB). Consistent with the tendency for female executive directors to be concentrated in some specific industries (Wanzenried, 2008), in our sample we find 41% of female executive directors in consumer

[3] Industry-matching procedure employed industry classification based on the sector level of Industry Classification Benchmark (ICB). With respect to the size criterion, we require that market capitalization, sales and the number of employees of a matched firm are between 50% and 150% of the corresponding values for the focal firm.

services, 20% in financial sector firms, 14% in the industrial sector, 14% in technology firms, 5% in health care companies, and 4% in consumer goods firms. Each of the remaining three industries (i.e., basic materials, oil and gas, and telecoms) represents less than 2% of the sample.

Measures

***Compensation measures*.** In order to examine the gender pay gap, we employ several measures of compensation. We focus on the component of compensation package that is explicitly designed to reward managerial (or firm) performance according to the Combined Code of Corporate Governance (Financial Reporting Council, 2003), namely the size of the bonuses paid to the executive directors. The absolute and the relative size of the bonuses (i.e., the bonus expressed in monetary terms and the bonus as a percentage of base salary) are examined. We also study a number of additional compensation measures: (i) base salary, (ii) direct compensation other than base salary or bonus, and (iii) incentive pay, that is the sum of the Black-Scholes value of unconditional option grants[4] and of the full value of Long-Term Incentive Plans (LTIPs).[5] LTIPs include both share and option grants. Finally, gender differences in total pay (defined as the sum of base salary, bonus, other direct compensation, and incentive pay) are also scrutinized.

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[4] Unconditional option grants refer to the grants where vesting does not depend on meeting specific performance criteria. Conditional option grants where options vest only after particular performance criteria are met are classified as LTIPs (see below).

[5] This approach implicitly assumes that LTIP criteria are being met and therefore directors are certain to benefit from the incentive plans. See Conyon and Murphy (2000) for the evidence that typical LTIP performance criteria are not very demanding and therefore the discount that should be applied to value LTIPs may be negligible. In order to assure the robustness of our conclusions, we experiment with ad-hoc approaches where all the LTIPs are discounted by the same scaling factor, e.g., 0.8. The results (not reported) are virtually identical to those discussed in the text.

Performance measures. The existing managerial compensation literature employs a range of measures of corporate performance (Tosi et al., 2000). Following the theoretical literature (e.g., Bushman and Indjejikian, 1993; Kim and Suh, 1993), two categories of performance metrics are distinguished: accounting-based performance measures and stock performance indicators. In the models employed below, one metric from each class is employed. Return on assets (ROA) is chosen as an accounting performance measure, while Tobin's Q (defined as the ratio of the sum of market capitalization and book value of debt, to the book value of total assets) reflects the stock performance. Importantly, since bonuses are supposedly granted to reward directors for achieved performance, performance indicators are lagged by one year: the size of directors' bonuses in year t is modeled as a function of corporate performance in year t–1 and of the other variables discussed below.

Control variables. Previous research indicates that a number of variables both at the organizational and individual level may influence managerial compensation and should therefore be controlled for: (a) company size (Tosi et al., 2000) defined as the natural logarithm of the firm's market capitalization, (b) firm risk (Murphy, 1999), measured as the annual stock price volatility, (c) board size (Core, Holthausen, and Larcker, 1999), defined as the natural logarithm of the number of members on the board of directors (both executive and non-executive ones), and (d) the industry differences and time trends in managerial compensation. We also control for directors' tenure (i.e., the number of years a director has served in their capacity) and director's age which may measure their professional experience and role-specific human capital and may hence also prove to be important determinants of managerial compensation (McKnight and Tomkins, 2004). Table 1 provides the sample descriptive statistics and correlations for all variables discussed above.

— Insert Table 1 about here —

Analysis

In order to compare the compensation levels of male and female executive directors, we first employ univariate non-parametric Wilcoxon tests. As more than a fifth of the directors in our sample did not receive any bonus in the year analyzed, the distribution of the dependent variable is left-censored. Therefore, we test our hypotheses within a Tobit regression framework (see Amemiya, 1984). Importantly, the coefficients of our Tobit models indicate the effects a particular regressor has on both the likelihood of a particular director enjoying a bonus and on the size of this bonus.

RESULTS

Table 2 outlines the key characteristics of the matched samples of firms with female and male executive directors. The performance of both groups of firms is comparable as the differences in performance between the subsamples are statistically insignificant (ROA: z = 0.20, p = 0.84, Tobin's Q: z = 0.04, p = 0.97). There are also no significant differences with regard to company size[6] or levels of risk. The Wilcoxon test shows that female executive directors are members of larger boards (z = 2.33, p = 0.02). As board size has been shown to have a positive impact of managerial remuneration, the fact that female executives are members of larger boards biases our sample against finding a significant gender pay gap. There are no significant gender differences in board tenure. However, consistent with the

[6] The differences for LN(Market capitalization) and LN(# Employees), which were used as matching criteria, are not statistically significant, as expected. For female directors' companies LN(Sales) are significantly larger (z = 2.29, p = 0.02), but for male directors' companies, LN(Total assets) is significantly larger (z = 2.84, p = 0.01).

finding that female employees tend to progress more slowly towards the top of corporate ladder (Wirth, 2004), female directors are employed longer by their companies than male directors ($z = 2.19$, $p = 0.03$). The median female director is almost 4 years younger than her median male peer ($z = 5.31$, $p = 0.00$).

The gender pay-gap and sample description: univariate tests

Figure 1 illustrates that there is a significant gender gap in the value of the total remuneration package of executive directors ($z = 2.41$, $p = 0.02$). The median female executive director earns £257,000 a year whereas her male counterpart earns £316,000. This translates to a gender pay gap in total remuneration of about 19%. Analyses of all the constituting elements of managerial remuneration further support the existence of a significant gender difference. In line with our first hypothesis, the median absolute bonus amounts to £36,000 for male and £26,500 for female executive directors, a highly significant gap of nearly 36% ($z = 2.51$, $p = 0.01$).

— Insert Table 2 and Figure 1 about here —

Moreover, the analyses reveal that bonuses earned by female executive directors are not only smaller in monetary terms, but also in relative terms: the median bonus of a female executive is equal to 24% of her base salary, while for a male executive director the corresponding percentage is 27%. This statistically significant difference ($z = 1.97$, $p = 0.05$) corroborates H1. Some difference can be observed for incentive pay as well: the equity-based incentive pay of the median female director constitutes a smaller proportion of her base salary, compared to her male peer although this effect is only marginally significant ($z = 1.83$, $p = 0.07$).

Gender differences in bonus sensitivity: multivariate analysis

Our sample is characterized by substantial variation in company performance, and this enables us to examine the bonus-performance relationship across a spectrum of corporate outcomes. In Table 3, we report the estimates of the Tobit models examining the size of bonus awarded to a director as a function of company performance, while controlling for the organizational- and individual-level factors discussed above. Model 1 explains the absolute size of the bonus (i.e., in £ thousands), while Model 2 examines the size of bonus relative to the base salary.

As can be seen in Table 3 and Figure 2, the results suggest that, in line with guidelines set for compensating executives (Financial Reporting Council, 2003), male executives are rewarded for superior company performance and are punished for inferior company performance. They are significantly more likely to receive larger bonuses if their firms' performance in the preceding year was strong. The coefficients corresponding to both the accounting performance measure (ROA) and the stock market measure (Tobin's Q) are positive and highly statistically significant in both models. Importantly, the positive relationship between the size of bonus and company performance is attenuated for female directors such that the bonus-performance relationship is rendered non-significant. The significant *negative* estimates for the interaction terms of performance and the female indicator variable largely neutralize the coefficients of the performance variables. Figure 2 shows the differences in pay-for-performance sensitivity (whereby pay is the annual bonus) for matched male and female executive directors. The sensitivity for male executives is strong and positive whereas that for female executives is virtually zero. This pattern provides strong support for H2.

— Insert Table 3 and Figure 2 about here —

For the economic analysis of the executive director bonuses, we compare the bonuses within the lowest decile of performance with those within the highest decile. Model 1 implies that as performance increases from the lowest to the highest decile of performance, the expected bonus for male executive directors rises by 263%, more precisely from £41,733 to £151,489. In contrast, the corresponding increase for a female director is a mere 4%, from £71,083 to £73,705. Similarly, the estimation results of Model 2 imply that moving from the lowest to the highest decile results in a quadrupling of the male executive director's bonus (from 15.1% to 59.8% of his base salary), while for females the corresponding increase in bonus is approximately one third (from 28.1% to 37.2% of her base salary). Put differently, the relative increase in men's bonuses as a function of improvement in company performance is approximately nine times larger than women's increase.

Importantly, the parameter estimates of the direct effect of gender are not statistically significant, which suggests that the phenomenon of the gender pay gap is not absolute, and is therefore more complex and context-dependent than argued in the existing literature. We also learn from Table 3 that executive directors' tenure has a positive and significant (albeit weak) effect on the likelihood of earning a bonus and on the magnitude of such a bonus (Model 1 in Table 3). Firm size is a highly significant determinant of both of the likelihood of earning a bonus and of the (relative and absolute) size of such a bonus (Models 1 and 2 of Table 3). Finally, the size of the board and the relative size of the bonuses paid to the executive directors are positively related (Model 2 in Table 3).

Additional analyses and robustness checks

We performed extensive checks to validate robustness of our conclusions. For the sake of brevity, we do not report full results of these tests in the text and we only discuss their conclusions. First, we verify whether the results of the paper are not driven by a small

number of influential observations. A winsorization procedure (Erceg-Hurn and Mirosevich, 2008; Tukey, 1962) is applied where all the observations of the continuous variables (i.e., of all the variables except binary ones) that lie more than 3 standard deviations away from the respective mean are replaced by the value of the mean ±3 standard deviations. The analyses employing these winsorized variables corroborate the findings reported above, and therefore we conclude that presence of outliers does not challenge the conclusions of the paper.

Second, we examine whether differences in variances of the variables in the two subsamples influence the findings. Close inspection of the data reveals that the subsamples do not differ much in this respect and hence this factor is unlikely to drive the results. In most cases, the respective standard deviations differ by a factor of not more than 1.4 between the subsamples. The only exceptions are the measure of other direct compensation (where the variation in the female subsample is almost twice compared with the male one) as well as ROE and ROS (which are only used in robustness checks below as measures of accounting based performance alternative to ROA employed above) where the differences are larger.

Third, we examine how much the variables of interest and their interactions improve the explanatory power of the Tobit model beyond the control variables. For both Model 1 and 2, we perform a hierarchical analysis with three separate models: the ones with control variables only, the one with control variables and the main effects, and the full model (including interactions between gender binary variable and performance measures). The results (available upon request) demonstrate that either of the sets of restrictions outlined above significantly reduces the goodness-of-fit of the Tobit models reported in Table 3. Interestingly, in the restricted equivalents of Models 1 and 2 with no interaction terms, the coefficient corresponding to the gender binary variable is at least marginally significant, which is not the case in either Model 1 or Model 2. It suggests that the gender pay

discrepancies documented here and in numerous other studies may actually be a reflection of gender differences in pay-performance sensitivity rather than an absolute phenomenon.

Finally, we check whether the results are robust with respect to the choice of measures employed. We employ alternative accounting-based performance metrics (instead of ROA), return on equity (ROE), and return on sales (ROS), and obtain the results that are in line with those reported in Table 3.[7] When stock return is employed as an alternative proxy for stock price performance (instead of Tobin's Q), the estimated coefficients for this indicator and for its interaction with gender binary variable fall short of conventional levels of statistical significance, which can be considered a shortcoming of the study. Other conclusions of the Tobit models (i.e., the results pertaining to accounting-based performance measure and control variables) remain unchallenged. The results are also robust with respect to the definitions of the control variables. Models employing any of the three alternative measures, that is, the natural logarithm of (i) the book value of a firm's total assets, (ii) the sales or (iii) the number of employees, yield results virtually identical to the ones reported in Table 3 (where the natural logarithm of market capitalization is used). Similarly, the findings are not affected by the choice of the tenure measure employed. While the measure used earlier (i.e., the number of years a director has served in their capacity) is a proxy for role-specific human capital, the alternatives (i.e., the number of years a director has served on the board of directors or the number of years a director has worked for the company) proxy for board-specific or company-specific human capital, respectively.

DISCUSSION AND CONCLUSIONS

[7] We do not employ absolute financial performance levels (e.g., total profits or pre-tax profits) as these measures are strongly correlated with company size (Tosi et al., 2000).

Putting the gender pay gap in context

The results of this study confirm that there is a large gender pay gap in executive director positions throughout the UK. After controlling for industry, time, company size, and director position (using a matching analysis), we find that female executive directors earn 19 per cent less than men. Moreover, female directors seem to suffer from the pay inequality twice: not only are their base salaries lower than those of their male colleagues, but also their variable pay (bonuses, in particular) corresponds to a smaller proportion of these lower salaries, consistent with H1. The present research extends beyond a simple demonstration of the gender pay gap in UK boardrooms and it identifies additional (and more subtle) aspects of gender pay discrepancies. In line with H2, an examination of the gender pay gap across different performance conditions demonstrates that gendered remuneration is a context-dependent phenomenon. Thus, while there is a positive relationship between company performance and bonuses for male executives (as previous research has shown; e.g., Murphy, 1999), this pattern is not replicated for female executives. In this way, we see that the bonuses received by male directors almost quadruple when comparing the poorest performing companies with those that are performing the best. In contrast, a similar comparison for firms with female executive directors leads to a bonus increase of only 30 per cent. We can also reframe this finding more positively by noting that while women are rewarded with a significantly lower bonus when the company is doing well, they are also punished less than men when company performance is poor. Thus, it appears that, at least when considering bonuses, the gender pay gap is highest when companies are doing well, but is attenuated — and indeed may even be reversed — when companies are doing badly.

This lack of sensitivity of the female managers' bonuses to company performance raises some questions about how their performance is assessed. Previous research suggests that gender stereotypes may play a role in explaining the way that women are evaluated and

treated in 'typically masculine' roles such as director positions, and in male-dominated environments such as the boardroom (Eagly et al., 1995; Eagly and Karau, 2002). The fact that women are not rewarded according to their performance (or at least their companies' performance) may reflect pre-existing theories about the lack of influence of women leaders in organizational settings. Women are atypical leaders (Schein, 2001) and therefore implicit leader theories about the causal relationships between leaders and corporate change cannot be automatically applied to female leaders (Pyszczynski and Greenberg, 1981). Along these lines, Kulich et al. (2007) argue that female executives may be regarded as not fully responsible for company outcomes because they are perceived to lack traits such as managerial competence and the ability to influence (Eagly et al., 1992; Heilman, 2001; Schein, 2001). As such, the lack of association between company performance and the (financial) evaluation of female directors may reflect a broader negligence of women's leadership abilities. Indeed, research has revealed that attributions of success are less likely to be applied to women than to men. In particular, compared to a male counterpart, a female leader is seen to be less competent, less influential, and less likely to have played a leadership role when solving a team task (Heilman and Haynes, 2005).

This perspective is further supported by research demonstrating similar performance-sensitivity patterns on the basis of certification (Wade, Porac, Pollock, and Graffin, 2006). After excellent company performance, directors who were certified (in the *Financial World's* contest of CEO of the year) received a higher compensation than their counterparts without certification, but they received less compensation when company performance was poor. Thus, female executive directors could be compared to uncertified directors, as they seem to be perceived as less credible leaders. Thus, as Kulich et al. (2007) note, it would appear that romantic notions of leadership — which associate company executives with power, credibility, and agency (Meindl et al., 1985) — do not extend to those who are female.

Results of research by Lee and James (2007) and by Haslam, Ryan, Kulich, Trojanowski, and Atkins (in press) which indicate that stock markets react much more positively to the appointment of male executives than their female counterparts are also consistent with this claim.

Consequently, the findings of the present paper go beyond simply showing gender discrimination and have implications for management theory-building in general. In particular, this is because the phenomena documented here challenge the universality of some of the current theories of leadership (e.g., the romance of leadership, Meindl et al., 1985) and of managerial compensation design (in particular, the models rooted in agency theory, see e.g. Devers et al., 2007; Murphy, 1999) by showing that distinct social groups receive significantly different treatments. The aforementioned biases in appraisal of atypical leaders (as opposed to prototypical ones) have important implications for the models of optimal contracting, requiring them to be considerably more complex and context-dependent. Moreover, we argue that the pay–performance relationship is stronger when a manager *is perceived* to be more instrumental in achieving particular performance outcomes, rather than when he or she objectively *has* more impact on them. Indeed, on these grounds managerial compensation contracts can be seen not as second-best solutions (as typically modeled in the agency framework, due to asymmetric information), but rather as third-best outcomes whose utility is further compromised by the psychological and behavioral factors that we have discussed above.

Gendered preferences and confidence

Pay arrangements are usually the product of an interaction between those that allocate pay (here, a remuneration committee) and those that receive it (here, an executive director). Thus far, we have discussed the role of inequalities in the allocation side of the pay process.

Other research on the gender pay gap also considers the personal finance decisions of the receivers. In particular, research on 'personal choice' argues that women have lower pay expectations than men (Heckert et al., 2002; Jackson, Gardner, and Sullivan, 1992; Major and Konar, 1984; Major, Vanderslice, and McFarlin, 1984).

Similarly, it may be argued that the pay differences seen here are due to gendered preferences for certain pay packages. According to previous research men tend to be more confident than women in their own abilities (Bajtelsmit and Bernasek, 1996; Barber and Odean, 2001). Thus, if given a choice, male directors may be more likely than their female colleagues to opt for more performance-sensitive packages, believing that they are not at risk of performing poorly. However, studies demonstrate that while men are (over)confident, they are not more successful than women in achieving their goals (Lundeberg, Fox, and Puncochar, 1994). In contrast to this over-confidence women have been described as risk-averse, especially in traditionally male domains such as finance (Bajtelsmit and Bernasek, 1996; Byrnes, Miller, and Schafer, 1999). Thus, women may prefer to avoid performance-based compensation contracts, avoiding the risk of failure by acknowledging that factors may be beyond their control.

While a focus on gender differences in confidence and risk aversion may seem intuitive, such an individual differences perspective cannot explain the findings of Kulich et al. (2007) which parallel the pay patterns in the present study. There, director preferences could not influence the amount of pay in the experimental design and that meant that gender differences in rewards could be attributed exclusively to the biased allocation of performance-based pay. Moreover, this focus on personal choice is built on the assumption that women are free to choose between distinct pay packages or alternatives of jobs if they are not satisfied with their pay. However, Balkin and Gomez-Mejia, (2002) observe that men are more likely than women to change their jobs if they are dissatisfied with their pay. This

may be because women's access to director positions is often blocked by a glass ceiling, leaving them with the choice between sub-optimal positions (Ryan and Haslam, 2005, 2007) or opting-out (Ryan, Kulich, Haslam, Hersby, and Atkins, 2008). Consequently, women's bargaining positions may be weaker, making it comparatively easy to retain women on lower pay. In contrast, in order to attract and retain male executive directors, remuneration committees may feel the need to offer them compensation packages with higher upside potential (compared to those offered to female executives). Indeed, offering compensation packages that appear more risky (based the arguments above) may be a way of justifying or legitimizing higher level of pay awarded to male directors.

Finally, it is important to note that a lack of risk-seeking behavior and lower confidence should not necessarily be treated as a stable trait of women in general. Instead, it should be seen as part of a process that varies across context and situations (Dwyer, Gilkeson, and List, 2002; Lenney, 1977; Schubert, Brown, Gysler, and Brachinger, 1999).[8] Indeed, this is borne out by the fact that risk-aversion is most marked in relation to tasks or activities which are typically masculine (Beyer and Bowden, 1997). Consequently, risk attitudes and confidence may be regarded as socially constructed and therefore malleable rather than innate.

Indeed, the tendency for women to be more risk-averse and less confident may, partly, be a product of women conforming to prescriptive stereotypes about the way in which they should behave (Schubert et al., 1999; Siegrist, Cvetkovich, and Gutscher, 2002). Thus, people's expectations that women are risk-averse may reinforce the gender gap by encouraging women to choose less risky pay packages. At the same time, such expectations

[8] The behavioral agency model (Wiseman and Gomez-Mejia, 1998) can be extended to provide similar arguments. In particular, the framing context of a managerial decision problem may differ between genders and these discrepancies may lead to differing attitudes towards risk.

may trigger negative reactions towards those women who do not comply with predominant gender stereotypes (Babcock and Laschever, 2003) such as behaving competitively or showing risk-seeking behavior in pay negotiations (Heilman, Wallen, Fuchs, and Tamkins, 2004; Rudman and Glick, 2001). This may lead to two related outcomes. First, women may learn that they stand to lose more than they win if they behave in stereotypically male ways (Wade, 2001). Indeed, women may feel less confident when negotiating their pay than men, a trend that, at least in part, can be explained by women's negative experiences throughout the pay process (Babcock and Laschever, 2003; Kulich, Ryan, and Haslam, 2009). Second, women are likely to be offered 'safe' compensation packages, with the belief that they prefer them, or at the very least, will accept them. Thus, women may feel pressured into accepting safe offers of non-risky pay packages, which may lead to a vicious circle that reinforces and sharpens gendered stereotypes about women leaders' pay preferences.

Understanding the implications for female managers

The fact that the women in our sample receive neither rewards nor punishments (in terms of remuneration) for company outcomes has a number of important consequences. On the one hand, it could be argued that this is a good result for women because no matter what they do, they will earn a modest bonus. Nevertheless, our results have serious implications for women and the gender divide because the fact that women do not receive rewards reflecting their successes, may mean that their efforts are not appropriately recognized or valued. This is particularly important in light of our findings that companies with female executive directors achieve corporate results that are not inferior to those in firms with male-only boards. Indeed, the previous literature also indicates that in comparison to their male counterparts, female directors may help bring about the same or even bigger improvements

in corporate performance (e.g., Ferrary, 2010; Kalleberg and Leicht, 1991; Singh, Vinnicombe, and Johnson, 2001; see also Haslam et al., in press).

The potential consequences of the bonus patterns documented above are therefore threefold. First, the literature shows that pay is an important predictor of the extent to which a person is valued in his or her employment context, and more specifically, of the extent to which this person is perceived to have influence and ability (Ridgeway, 2001). Therefore, low salaries are associated with a lack of credibility and an inability to influence either people or events. Consequently, women's lower remuneration may mean that they are less likely to secure jobs that correspond to their abilities. Indeed, a common question asked at job interviews is what the applicant has earned in the previous positions. As women tend to earn less than equally qualified men, their qualifications may continue to be underrated.

Second, these pay-related perceptions may reinforce female stereotypes. Experimental research demonstrates that well-paid individuals are seen as agentic in the sense that they are perceived as being both influential and competent. Badly-paid individuals, in contrast, are considered as more communal and as having more warmth, traits which are both stereotypically female (Johannesen-Schmidt and Eagly, 2002). Thus, to the extent that women are paid less well than men, the belief that women are communal will be reinforced at the expense of perceptions of their agency. In a managerial context, this is critical because such stereotypes conflict with notions of what it means to be a good leader. Moreover, such stereotypes have been shown to be associated with negative treatment of female managers — including devaluation of their efforts (Eagly et al., 1992) and punishment for their successes (Heilman et al., 2004).

A final consequence may be that companies find it hard to retain talented women because they fail to reward them for their successes. If bonuses are to be seen as a way of acknowledging and rewarding people who perform consistently well, and if women are

systematically denied such feedback, then they may be less motivated to try hard in future and may disengage from the challenges they face (Ryan, et al., 2008). In addition to the factors identified previously in the literature (e.g., Eagly and Carli, 2007; Kanter, 1977; Wirth 2004), such a process may contribute to the relative scarcity of females in high ranking company positions and their short tenure relative to men.

Importantly, while this paper focuses on issues of gender, many of the arguments we have made also apply to other minority groups with diverse backgrounds (e.g., race or ethnicity, sexual orientation, faith (belief or religion), disability, or age). As is well documented, members of these groups are also disadvantaged due to their group's low social status (e.g., Biernat and Kobrynowicz, 1997; Ellis, Ilgen, and Holleinbeck, 1996; Lorenzi-Cioldi, 2006), and this extends to the experience of a significant pay gap (e.g., England, Christopher, and Reid, 1999; Longhi and Platt, 2008). Moreover, in many organizational contexts, they are also likely to be perceived as atypical leaders.[9] Consequently, we believe that the main prediction of our paper (i.e., a lower pay-performance sensitivity for female managers) is likely to be extended to other minority groups. Nevertheless, empirical verification of this claim is needed.

Conclusion

This paper indicates that the gender pay gap is alive and well in UK executive positions. It also extends previous literature by examining the circumstances under which the gender pay gap occurs — revealing that while the romance of leadership is reflected in the bonuses received by male executive directors, it is something from which their female

[9] For instance, younger leaders may lack credibility in the eyes of older observers such as employees or members of remuneration committees, and, by implication, may not be perceived as very instrumental in achieving particular performance outcomes.

counterparts do not benefit. This finding contributes to the managerial compensation literature as it sheds further light on the process of appraisal of executive performance and it identifies gender as an important contextual factor influencing this process.

The fact that women are neither rewarded with carrots (when corporate performance is good) nor punished with sticks (when performance is disappointing) has important implications for women and their income. Yet, organizational insensitivity to women leaders' performance is not merely an issue of *financial* inequality. It can also be regarded as a lack of respect for women leaders in communicating and promoting the view that female executives *lack agency* and impact in the workplace. As long as this agency is denied, then women who break through the glass ceiling are likely to find their leadership experiences highly unsatisfactory. Indeed, by signaling *indifference* to their efforts, organizations may produce women leaders who are themselves indifferent (Ryan et al., 2008). Consequently, it is perhaps not surprising that, relative to their male counterparts, female directors are more likely to vote with their feet and "opt out" of organizational life (Stroh, Brett, and Reilly, 1996). At the same time, these insensitive reward structures "push out" women since they may contribute to a drop in the perceived market-value of talented women who miss out on the "high pay label" that has been shown to be a significant determinant of perceived leadership (Ridgeway, 2001).

Accordingly, we conclude that while 'performance-based pay' is an intrinsic part of any male executive's pay package, the term may be something of a misnomer when considering female executives. Indeed, the fact that female executives are neither rewarded nor punished for their work can be seen as an indicator of a more generalized organizational apathy and indifference towards women (Ryan et al., 2008). Moreover, if, as Elie Wiesel has observed, 'the opposite of love is not hate, but indifference', then so too the indifference of

organizations to women's achievements in the workplace may be the very antithesis of equality.

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Table 1.

Sample descriptive statistics

	Variable	Mean	Std. Dev.	Correlations 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Female	0.50	0.50																						
2	Base salary (£ '000)	186.48	141.30	-0.03																					
3	Bonus (£ '000)	92.62	163.47	-0.16	0.59																				
4	Other direct compensation (£ '000)	22.82	55.54	0.04	0.29	0.09																			
5	Incentive pay (£ '000)	272.18	930.00	-0.05	0.60	0.64	0.21																		
6	Total pay (£ '000)	617.37	1183.67	-0.08	0.74	0.78	0.30	0.96																	
7	Bonus / Base salary	0.40	0.60	-0.15	0.30	0.86	0.02	0.45	0.57																
8	Incentive pay / Base salary	0.98	2.18	-0.09	0.21	0.35	0.10	0.75	0.64	0.34															
9	Return on assets (ROA in %)	-1.96	20.65	-0.01	0.09	0.11	0.02	0.12	0.12	0.15	0.08														
10	Return on equity (ROE in %)	6.25	286.09	0.07	0.08	0.07	0.02	0.06	0.07	0.08	0.04	0.48													
11	Return on sales (ROS in %)	-45.32	456.59	-0.05	0.04	0.04	0.02	0.04	0.04	0.05	0.03	0.21	0.05												
12	Tobin's Q	3.02	9.74	0.13	0.00	0.03	0.01	-0.03	-0.01	0.04	-0.05	-0.16	0.15	-0.01											
13	Stock return (in %)	15.18	81.25	-0.05	-0.09	0.01	-0.07	-0.05	-0.05	0.04	-0.04	0.12	0.05	0.09	0.11										
14	LN(Market capitalization)	5.23	2.18	-0.01	0.64	0.50	0.15	0.55	0.62	0.39	0.39	0.30	0.18	0.07	0.11	-0.04									
15	LN(Total assets)	5.35	2.49	0.01	0.61	0.48	0.15	0.45	0.54	0.36	0.29	0.29	0.23	0.10	0.05	-0.17	0.89								
16	LN(Sales)	4.97	2.51	0.04	0.62	0.41	0.18	0.44	0.52	0.29	0.29	0.34	0.21	0.21	0.00	-0.12	0.85	0.90							
17	LN(# Employees)	7.01	2.35	0.05	0.55	0.33	0.17	0.41	0.46	0.19	0.27	0.27	0.18	0.10	0.01	-0.11	0.77	0.75	0.90						
18	Risk (Stock price volatility)	33.56	13.79	0.01	-0.16	-0.18	-0.10	-0.18	-0.20	-0.20	-0.10	-0.49	-0.25	-0.22	0.00	0.16	-0.46	-0.52	-0.49	-0.41					
19	Board size (LN of # directors)	2.05	0.36	0.09	0.33	0.34	0.10	0.31	0.36	0.33	0.23	0.14	0.09	0.00	0.10	-0.16	0.67	0.66	0.59	0.54	-0.34				
20	Director's tenure in the role	4.02	3.82	0.10	-0.07	-0.07	-0.06	-0.16	-0.15	-0.05	-0.21	-0.04	-0.02	-0.06	0.03	0.11	-0.29	-0.34	-0.35	-0.38	0.20	-0.23			
21	Director's tenure on the board	4.77	4.65	0.02	0.01	-0.09	-0.05	-0.15	-0.13	-0.08	-0.19	0.01	-0.01	-0.03	-0.05	0.10	-0.19	-0.29	-0.27	-0.29	0.14	-0.25	0.76		
22	Director's tenure in the company	7.38	6.74	0.13	0.01	-0.10	-0.08	-0.14	-0.13	-0.14	-0.20	0.05	0.04	0.01	0.01	0.05	-0.04	-0.11	-0.07	-0.10	-0.02	-0.09	0.45	0.66	
23	Director's age	45.56	6.95	-0.32	0.23	0.15	0.07	0.15	0.18	0.14	0.10	-0.01	-0.01	-0.05	-0.09	0.00	0.04	0.01	-0.02	-0.02	0.10	0.05	0.37	0.42	0.19

Table 2.

Univariate comparisons for independent variables in matched samples

	Full sample (*N* = 524)	**Male directors' sample (*n* = 262)**	**Female directors' sample (*n* = 262)**	**Differences between samples [a]**	
Variable	**Median**	**Median**	**Median**	**Wilcoxon test Z**	**p-value**
Return on assets (ROA in %)	3.34	3.74	2.84	0.20	0.84
Return on equity (ROE in %)	8.22	8.91	8.05	0.25	0.80
Return on sales (ROS in %)	7.06	8.99	6.45	0.91	0.37
Tobin's Q	1.95	1.98	1.92	0.04	0.97
Stock return (in %)	0.95	0.26	1.75	0.54	0.59
LN(Market capitalization)	4.95	4.87	5.11	0.82	0.41
LN(Total assets)	5.27	5.35	5.11	2.84	0.01
LN(Sales)	4.85	4.73	5.08	2.29	0.02
LN(# Employees)	7.14	6.91	7.36	1.06	0.29
Risk (Stock price volatility)	29.36	28.48	29.67	0.27	0.79
Board size (LN of # directors)	2.08	2.08	2.08	2.33	0.02
Director's tenure in the role	2.80	2.85	2.80	0.68	0.50
Director's tenure on the board	3.30	3.30	3.30	1.25	0.21
Director's tenure in the company	5.20	4.70	5.80	2.19	0.03
Director's age	46.00	47.00	43.00	5.31	0.00

[a] Wilcoxon test statistics are based on matched pairs. The significance levels correspond to two-tail tests.

Table 3.

Tobit models explaining absolute and relative size of the bonuses earned by executive directors

	Model 1 Dependent Variable: Bonus			**Model 2 Dependent Variable: Bonus / Base Salary**		
	Estimate	**t-statistic**	**p-value**	**Estimate**	**t-statistic**	**p-value**
Intercept	-446.17	-4.32	0.00	-1.25	-3.59	0.00
Female	-33.51	-1.48	0.14	-0.02	-0.33	0.75
Return on assets	3.66	2.82	0.01	0.01	3.36	0.00
Return on assets * Female	-3.42	-2.35	0.02	-0.01	-2.12	0.04
Tobin's Q	5.08	2.09	0.04	0.02	2.13	0.03
Tobin's Q * Female	-5.91	-1.99	0.05	-0.02	-2.20	0.03
Director's age	1.37	0.88	0.38	0.00	0.69	0.49
Director's tenure in the role	4.96	1.84	0.07	0.01	1.00	0.32
Board size	38.68	1.07	0.29	0.42	3.44	0.00
LN(Market capitalization)	48.02	7.14	0.00	0.05	2.26	0.02
Risk (Stock price volatility)	-0.42	-0.41	0.69	-0.00	-0.98	0.33
Year after 2002 (dummy variable)	65.72	3.50	0.00	0.11	1.79	0.07
Industry dummies	Yes		0.06	Yes		0.01
Total number of observations	345			345		
Number of left-censored observations	78			78		
Log-likelihood	-1780.08			-268.08		
Goodness-of-fit	Pseudo-R^2 = 0.05			Pseudo-R^2 = 0.18		
Model test	LR $\chi^2(17)$ = 172.89			LR $\chi^2(17)$ = 116.58		
P-value	0.00			0.00		

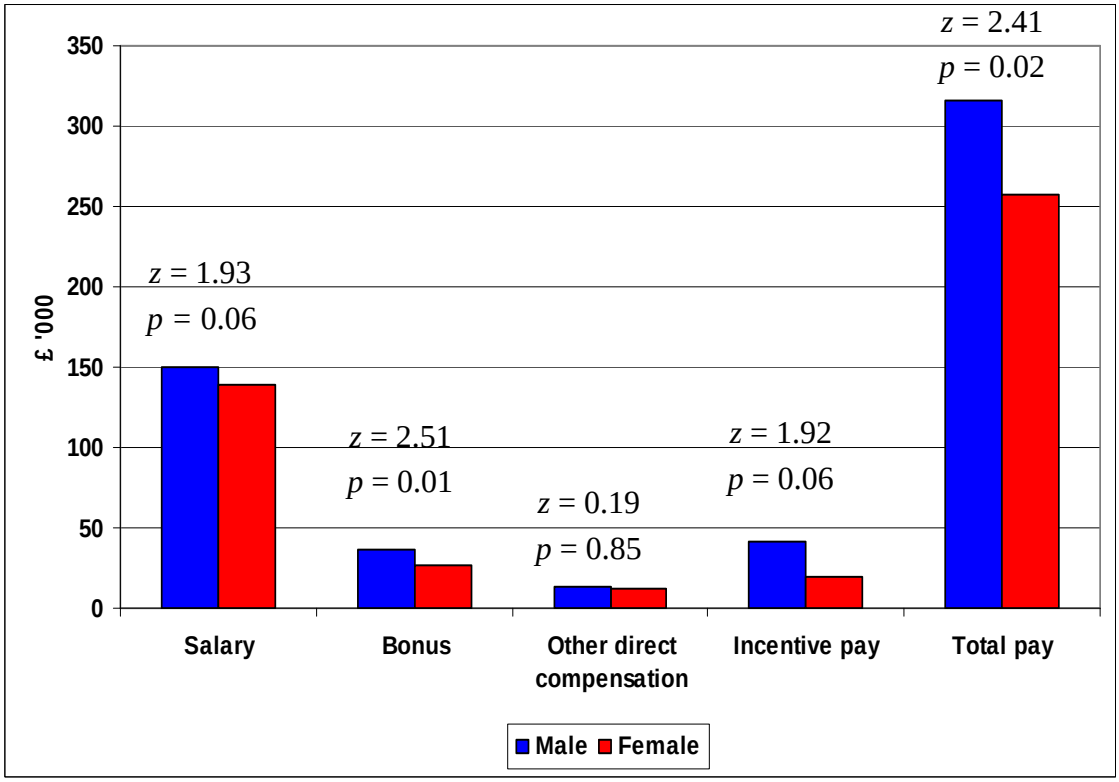

Figure 1.

Gender pay gap (Comparison of medians for various components of executive remuneration packages)[a]

[a] The figure compares various components of remuneration packages for the matched samples of male and female executive directors. Test statistics are based on Wilcoxon tests and the significance levels correspond to two-tail tests.

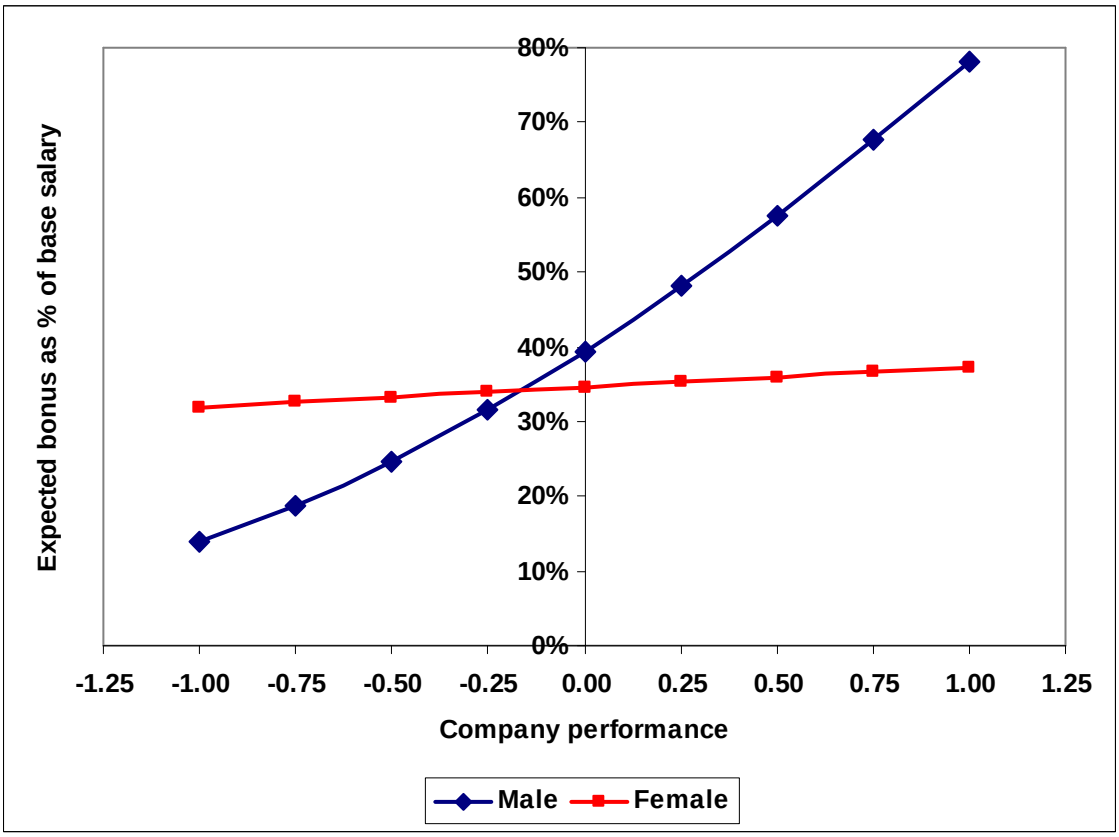

Figure 2.

Gender differences in performance sensitivity of bonus

(as implied by Model 2 of Table 3) [a]

[a] The figure is based on the prediction from Model 2 (see Table 3). It illustrates gender differences in the relationship between the expected size of the bonus awarded to an executive director and the performance of the directors' firm. Company performance is based on two variables used in model specification: Return on assets (expressed in percentage terms) and Tobin's Q (the ratio of the sum of market capitalization and book value of debt to book value of total assets). The values are defined as follows: 0 corresponds to the situation where both performance indicators are set at their mean values; 0.25 – to the case where both indicators are 0.25 of their respective standard deviations above the mean, etc. In the calculations of the expected size of the bonus, the values of all the other regressors included in Model 2 are set to their mean values.

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