

**Women in the Boardroom: Symbols or Substance?**

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### **Abstract**

The central argument for increasing the number of women on corporate boards of directors has been the so-called “business case for diversity” which proposes that women and minorities add valuable new perspectives that result in enhanced corporate performance. Unfortunately, the empirical evidence for this claim is mixed, leading some researchers to suggest that women outsiders are appointed for symbolic rather than substantive reasons. Using a sample of more than 2,000 firms over the period 2001-2005, we examine the effects of women outside directors on firm performance and CEO compensation. We find no evidence that adding women outsiders to the board enhances corporate performance. We do find some evidence that male CEOs with higher levels of compensation are more likely to appoint women outsiders and that boards with more women outside members are more generous in paying the CEO. We interpret these results as consistent with the appointment of women outsiders for normative rather than profit-enhancing reasons.

In the past two decades there have been consistent cries for the appointment of more women outsiders to corporate boards of directors. These calls have come from the popular press, institutional investors, women's advocacy groups, and academics (e.g., Bilimoria, 1995; Catalyst, 2004; Fondas & Sassalos, 2000; Sweetman, 1996; Valenti, 2007; Westphal & Milton, 2000). For instance, in their review of the impact of boards on firm performance, Pearce and Zahra (1991) argued that a representation of diverse interests, including the number of female and minority members, was an important characteristic of an effective board. In 1998, the National Association of Corporate Directors issued the *Report of the NACD Blue Ribbon Committee on Director Professionalism* (NACD, 1998) that encouraged boards to consider candidates from diverse background, including race and gender. Similar recommendations have been made by Catalyst (2004), TIAA-CREF and others.

Fundamental to this argument is the belief that increased demographic diversity among corporate boards of directors should improve board decision making and thereby positively affect firm performance (e.g., Thompson & Graham, 2005; Useem, 1993). This claim, the so-called "business case for diversity", while normatively appropriate, is empirically questionable and has led some researchers to reluctantly question the basic premise: "The case for board diversity based on equity and fairness is normative...(and) says nothing with respect to whether a diverse board of directors adds value to the firm (Carter, Simkins & Simpson, 2003, p. 3)." Van der Walt and Ingley (2003, p. 230) reach a similar conclusion: "The literature strongly supports the idea of diversity, at least in a social and moral sense, although the business case is less convincingly argued on the basis of hard evidence."

In their review of the research, Daily and Schwenk (1996) note that the composition of the board of directors is perhaps the most widely studied variable in governance research but conclude that there is “little consensus (p. 190)” on its effect. This is manifest in reviews of the literature on board composition and firm performance (e.g., Adams & Ferreira, 2009; Fields & Keys, 2003; Rose, 2007; Zahra & Pearce, 1998). The evidence for any positive effects of board diversity on firm performance remains mixed at best, with some studies reporting positive effects (e.g., Carter et al., 2003; Jurkus, Park & Woodward, 2008), some finding no effects (e.g., Carter, D’Souza, Simkins & Simpson, 2010; Francoeur, Labelle, & Sinclair-Desgagne, 2008; Rose, 2007), and some negative (Adams & Ferreira, 2009; Shrader, Blackburn & Iles, 1997; Wellelage, 2011). In an attempt to resolve these ambiguities, Dalton and his colleagues (Dalton, Daily, Ellstrand & Johnson, 1998) conducted a meta-analysis of 85 studies of board composition with more than 60,000 observations and concluded that there is little evidence that the composition of the board of directors has any effect on firm performance. The absence of any strong evidence for a business case for board diversity is puzzling and unsettling to advocates of board diversity (e.g., Burgess & Tharenou, 2002; Fondas & Salsalos, 2000; Thompson & Graham, 2005).

If the evidence for performance effects is not robust, what then explains the steady increase in the number of women on boards of directors (Daily, Certo & Dalton, 1999; Hillman, Cannella & Harris, 2002; Lublin, 2011; Valenti, 2008)? Although not a popular view, this lack of empirical evidence has led several researchers to wonder whether the increase in women outsiders on boards may, in fact, reflect tokenism. Farrell and Hersch (2005), for example, in a study of 309 firms over a 7-year period concluded

that “Our results suggest that adding women to the board does not result in value creation (or destruction)” and “our evidence is also consistent with firms operating in a manner consistent with tokenism (p. 86).” Consistent with this possibility of tokenism, several studies have documented that women directors are less likely to serve on important board committees (e.g., the executive committee) and more likely to be placed on less influential committees like public affairs (e.g., Bilimoria & Piderit, 1994; Peterson & Philpot, 2006; Ruigrok, Peck, Tacvheva, Greve & Hu, 2006). This has also led to one prominent female director to comment that gender in the appointment of directors is beside the point and that the appointment of women for diversity’s sake is “corrosive” such that if women are appointed as tokens it will undercut the effectiveness of the board and patronize women (Scherer, 1997).

But if there were no convincing business case for the appointment of women outsiders, why would a CEO or a board appoint a token to the board? First, there is some evidence that women outsiders are more likely to be appointed to boards of firms that are financially successful (e.g., Adams & Ferreira, 2009), suggesting that organizational slack may predispose firms to appoint women or that women self select into better performing firms. Second, in a study of 247 firms, O’Reilly and Main (2010) found that having more female directors on the board was associated with higher CEO pay. In attempting to explain this finding they speculate that it may be that women outside directors are simply more generous in awarding compensation or that the boards of highly paid CEOs appoint women outsiders as tokens--a way of signaling that they are progressive and a way of defending against “outrage costs” (Bebchuk & Fried, 2004, p. 64). The present study explicitly examines four hypotheses relevant for the appointment

of women outsiders to the boards of directors. First, we investigate the business case for diversity and examine whether the appointment of women outsiders to the board has any effect on subsequent firm performance. Second, we consider what organizational characteristics are associated with the appointment of women outside directors. Third, and, consistent with the appointment of women to boards of directors as tokens, we investigate whether firms with comparatively over-paid CEOs are more likely to appoint a female to the board. Finally, we explore, as suggested by O'Reilly and Main (2010), whether boards with women outside directors are more generous in their compensation decisions.

Using a sample of 2000 firms over a 5-year period, our results show no relationship between the appointments of women outsiders to the board and subsequent firm performance. We find that firms are more likely to appoint women to their board if the firm is larger and more profitable, has a female as CEO, and has a larger board. We find some evidence that boards with comparatively over-paid CEOs are more likely to appoint a woman to the board than those with comparatively under-paid CEOs. We also find that, after controlling for variables like industry, firm size and performance, and CEO human capital, firms with more women outside directors pay their CEO more than boards with fewer women outsiders and that women may be more generous in their award of executive compensation. Overall, we interpret these findings as consistent with women outsiders being appointed to boards for symbolic reasons rather than for reasons relating to profit enhancement.

### **Women Outside Directors: The “Business Case” for Diversity**

Corporate governance and the role of the Board of Directors has become an increasingly important research topic over the past decade (e.g., Larcker & Tayan, 2011; Shleifer & Vishny, 1997). This interest, driven in part by the high profile failures of some notable firms, has focused mainly on how the composition of the board helps or hinders its ability to effectively hire, fire, monitor and advise the CEO (e.g., Daily & Schwenk, 1996; Westphal, 1998). Although these studies often use different theoretical perspectives, the underlying question remains the same: Are the characteristics of the members of boards of more successful firms different from those that are less successful?

One large subset of this research has focused on the representation of minorities and women on boards, with the argument proffered that more heterogeneous boards are likely to be more effective than homogeneous ones (e.g., Arfken, Bellar & Helms, 2004; Bilimoria, 2006; Siciliano, 1996; Torchia & Calabro, 2010). Advocates of increased board diversity make a so-called “business case” for diversity, arguing that having minorities on the board can improve board decision making and problem solving, improve marketplace understanding, and enrich the talent pipeline and thereby increase shareholder value (Burgess & Tharenou, 2002; Fields & Keys, 2003; Robinson & Dechant, 1997; van der Walt & Ingley, 2003). On the face of it, these are reasonable arguments.

Unfortunately, even though there is evidence of increasing numbers of minorities and women serving on corporate boards (e.g., Daily et al., 1999; Helfat, Harrison & Wolfson, 2006; Lublin, 2011; Valenti, 2008), there is little evidence either that the composition of the board is related to subsequent firm performance or that minorities and women contribute to this over and above what other board members would. For example,

in a study of 2,106 firms Larcker, Richardson and Tuna (2007) examined 39 structural measures of corporate governance and noted the lack of corroborating evidence supporting the idea that better governance matters, leading them to conclude that corporate governance constructs have limited explanatory power for explaining managerial choices or firm valuation. While some studies do find that the presence of women on the board is sometimes associated with higher firm financial performance (e.g., Carter, et al., 2003; Catalyst, 2004; Erhardt, Werbel & Shrader, 2003; Jurkus, et al., 2008), other studies report no relationship between board diversity and performance (Adams, Gupta & Leeth, 2009; Carter, et al., 2010; Dalton et al., 1998; Francoeur et al, 2008; Haslam, Ryan, Kulich, Trojanowski, & Atkins, 2008; van der Walt, Ingley, Sherrill & Townsend, 2006; Zahra & Stanton, 1988) or a negative association between diversity and performance (Shrader, et al., 1997; Tacheva & Huse, 2007; van der Walt, Ingley, Shergill, & Townsend, 2006). For instance, Randoy, Thomsen and Oxelheim (2006) examined the 500 largest companies in Norway, Denmark and Sweden and found no relationship between board diversity and firm performance, a finding replicated in several other large sample studies of Scandinavian firms (e.g., Rose, 2007; Smith, Smith & Verner, 2006). In a study of the diversity of the boards of S&P 500 companies between 1998 and 2002, Carter and his colleagues (Carter, et al., 2010) found no association with performance and concluded that “The results of our analysis do not support the business case for inclusion of women and minorities on corporate boards (p. 396).” Other studies of U.S. firms have also been disappointing, leading Adams and Ferreira (2009, p. 291) to conclude that “the average effect of gender diversity on firm performance is negative.”



One response on the part of researchers to the lack of support for the business case for diversity has been to examine the micro-underpinnings of board dynamics in an attempt to understand how diversity might contribute to improved board functioning (Elstad & Ladegard, 2012; Forbes & Milliken, 1999; Nielsen & Huse, 2010; Payne, Benson & Finegold, 2009). Adams and Ferreira (2009), for instance, found that gender-diverse boards allocate more effort to monitoring. Miller and Triana (2009) found no direct relationship between board gender diversity and firm financial performance but did report that gender diversity was associated with the firm's reputation and that this can be associated with performance. Tacheva and Huse (2007) find that that the number of women on the board had a positive effect on board development activities but did not enhance the openness of communication or the quality of decision making. Indeed, there is no consensus on the benefits of homogeneity or heterogeneity on effectiveness (Lazear, 1999; Williams & O'Reilly, 1998) and several studies have suggested that diversity may impede group functioning and board effectiveness (Goodstein, Gautam & Boeker, 1994; Westphal & Stern, 2006).

This lack of a clear case for the positive effects of board diversity mirrors the substantial research on the effects of demographic diversity on group performance (e.g., van Knippenberg & Shippers, 2007; Williams & O'Reilly, 1998). From an information processing perspective, the addition of diversity to a group should, in principle, add new information and perspectives and increase decision making performance. For example, gender diversity has been shown to have positive effects on creativity in gender neutral groups (Pearsall, Ellis & Evans (2008). The addition of minorities has also been shown to trigger greater exchange of information (Nemeth, 1986). Increased diversity may also

provide larger networks and more social capital ((Oh, Chung & Labianca, 2004; Reagens & Zuckerman, 2001). However, the effects of increased diversity have also been found to increase the likelihood of subgroup formation that can lead to demographic faultlines (Jiang, Jackson, Shaw & Chung, 2008; Lau & Murnighan, 2005), increased conflict within the group (Jehn, Northcraft & Neale, 1999), and a tendency to emphasize the sharing of common knowledge and to not share unique information (e.g., Gigone & Hastie, 1993; Phillips, Mannix, Neale & Gruenfeld, 2004). Thus, as shown by a number of extensive summaries and meta-analytic reviews of the diversity literature, there is little evidence for the positive effects of diversity on group performance and some suggestion of its negative effects (e.g., Bowers, Pharmer & Salas, 2000; Joshi & Roh, 2009; Mannix & Neale, 2005; Webber & Donahoe, 2007; Williams & O'Reilly, 1998; van Knippenberg & Shippers, 2007).

In spite of the lack of compelling evidence for the effects of adding women to corporate boards, the central hypothesis for the business case for diversity remains:

- H1: The financial performance of firms with more women outsiders on the Board of Directors will be higher than those with Boards with fewer women.

### **Women Outside Directors as Symbols**

Although the evidence for increased board diversity is mixed, there is evidence consistent with the argument that women outside directors may be appointed as tokens or because of a desire to be seen as doing the right thing (Scott, 2004). For example, several studies have documented that women are less likely to serve on powerful board committees like the executive committee and more likely to serve in less influential roles (Bilimoria & Piderit, 1994; Conyon & Mallin, 1997; Dalton, Dalton & Certo, 2007;

Peterson & Philpot, 2006; Ruigrok, Peck, Greve & Hu, 2006). There is also evidence that women outside directors are less likely to have conventional business backgrounds than male directors and lack equivalent line experience (Burke, 1997; Hillman, et al., 2002; Kesner, 1988; Zelechowski & Bilimoria, 2004). The fact that a director's sex may influence committee selection is seen as evidence of sex-typing and consistent with tokenism (Bilimoria & Piderit, 1994). In a study of the replacement of women directors, Valenti (2007, p. 20) finds that firms are more likely to replace a departing female board director with another woman than to add a second female and concludes that this gives "credence to the token argument."

More worrisome is the potential issue of endogeneity in some of the earlier studies that reported a positive association between board diversity and firm performance; that is, consistent with tokenism, it may be that firms appoint women when they are doing well and feel they can afford to comply with norms of fairness. The evidence is that firms that are larger and more diversified, and those with more female employees are also more likely to have women directors (e.g., Brammer, Millington & Pavelin, 2007; Fryxell & Lerner, 1989; Hillman, Shropshire & Cannella, 2007; Singh, Vinnicombe & Johnson, 2001). Several studies have shown that women directors were more likely to be found in more profitable firms and those with larger boards (e.g., Adams & Ferreira, 2009; Adams, Gupta & Leeth, 2009; Burgess & Tharenou, 2000; Terjesen, Sealy & Singh, 2009). Although there are conflicting views (e.g., Angert & Pathak, 2010; Ryan & Haslam, 2005), the preponderance of empirical evidence suggests that firms are more likely to appoint women when they have excess resources to facilitate change (organizational

slack) that allow them to focus more on diversity issues; that is, women outside directors are appointed more as symbols than substance. This suggests the following hypothesis:

- H2: Firms are more likely to appoint women outside directors to the board when there is more organizational slack (i.e., higher performance, larger boards, and more board committees)

If there is no clear business case for diversity, what other reasons might induce a male CEO to add a woman to the board? One motive has to do with reputation, both personal and the firm (e.g., Fombrun & Shanley, 1990; Rao, 1994; Rindova, Williamson, Petkova & Sever, 2005). A long tradition of research in social psychology has documented the importance of self-presentation as a means for obtaining desired outcomes and maintaining self-esteem (e.g., Goffman, 1959; Schlenker, 1980). Impression management has been shown to be particularly prevalent when people believe that others who are important to them (e.g., shareholders and the business press) may hold undesirable impressions of them. For instance, in an attempt to reduce unfavorable impressions and portray ourselves as worthy of admiration, we may signal our modesty through doing good works (e.g., Wosinska, Dabul, Whetstone-Dion & Cialdini, 1996). In a business context, knowledge by the CEO and external constituencies of his comparatively high compensation may lead to attempts by the CEO to signal his value through socially progressive actions such as corporate good works or appointing minorities to positions of power and influence.

For example, using the *Fortune* rankings for 326 firms, Miller and Triana (2009) reported significant effects of board gender diversity on the company's reputation for innovation. Other studies have also shown that a firm's reputation can have similar advantages for the individual (e.g., Gibbons & Murphy, 1992). For instance, Graffin and

his coauthors (Graffin, Wade, Porac & McNamee, 2008) found that a CEO's reputation was directly linked to compensation beyond what performance justified. Wade, Porac, Pollock and Graffin (2006) noted that firms may also use external validations to justify high levels of CEO pay by calling attention to criteria other than objective performance. Consistent with this, Stanwick and Stanwick (2001) found a strong association between CEO compensation and a firm's reputation for being environmentally progressive.

Research has also shown that a CEO's positive reputation can enhance the trust stakeholders place in the CEO and make it easier for the CEO to excuse non-performance (Clanci & Kaplan, 2009; Hall, Blass, Ferris & Massengale, 2004). Karuna (2009) also links a positive CEO reputation to weaker corporate governance. Thus, when faced with concerns about how to justify high levels of CEO compensation, one strategy may be for the firm or the CEO to provide alternative criteria that signal that the compensation is warranted, for example by showing that the firm is progressive with regards to diversity. In this way, there may be indirect benefits for a company with a more diverse board and a more tangible benefit for the CEO (Wade, Porac & Pollock, 1997). This suggests the following hypothesis:

- H3: Boards with highly compensated CEOs (e.g., who are comparatively overpaid) will be more likely to appoint women outside directors to the board than those that are less well compensated.

A second reason why firms might choose to appoint women outside directors to the board is that strong CEOs may prefer board members who are more easily marginalized and thereby more likely to be persuaded to accommodate to the CEO's agenda (Shivdasani & Yermack, 1999). For instance, research on minority influence has shown that when minorities are few in number, lower in social status, less experienced

and in groups where there are norms against conflict and disagreement, the minority viewpoint is suppressed and not heard (Wood, Lundgren, Oullette, Busceme and Blackstone, 1994). Under these conditions, the minority occupies a symbolic but not a substantive position. In a study of how boards actually operate, Lorsch and MacIver (1989) describe how CEOs actively shape and control their boards, a finding confirmed in a series of studies by Westphal (e.g., Westphal & Zajac, 1995; Westphal, 1998). Generally in a minority position on the board, women, especially those with less business experience, may be more easily managed than more experienced directors (Westphal & Zajac, 1997).

Interestingly, there is also evidence that indicates that women may be more generous than men (Dufwenberg & Muren, 2006; Eagly, 1995; Eckel & Grossman, 1998) and less competitive (Gneezy, Niederle & Rustichini, 2006; Niederle & Vesterlund, 2007) —attributes that could make them more attractive candidates for the boards of some CEOs. In the context of the board, CEO compensation is initially set by the compensation committee and then brought to the larger board for approval. Having board members (e.g., women) who are less experienced, less likely to sit on influential board committees, and less able or willing to voice objections to decisions about pay, may facilitate the process of increasing the level of CEO compensation. Thus, it may be that comparatively overpaid CEOs will be more likely to appoint women to the board and, once appointed, the board continues to escalate the CEO's pay. O'Reilly and Main (2010) invoke this logic in attempting to explain the association between the number of women outsiders on the board of directors and the level of CEO pay. This suggests the following hypothesis:

H4: Boards with female outside directors are more generous and this results, *ceteris paribus*, in higher CEO compensation

### **Method**

#### **Data**

The data were provided by Equilar, an executive compensation firm, for the years 2001 through 2005. Coverage grows over the period. In the sample used here, there are 1,697 CEOs observed in 2001 but this quickly grows to 2,944 by 2005. For inclusion in our study, companies are required to have sales of at least \$1 million and the CEO is required to be in post for a full year. Table 1 provides the correlation matrix and basic summary statistics.

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Insert Table 1 about here

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The descriptive data show that the typical firm in the sample had revenues of \$382 million (range: \$2.7 million to \$2.8 billion) and 8.5 board members (range 3-26). Sixty-two percent of the firms had at least one female on the board during the period 2001-2005 (range 0-6). Two percent (N= 285) of the total firm observations had a female CEO. The typical board met 7.5 times during the year and had 3.6 committees (range 1-11). These parameters are comparable to those reported in earlier studies (e.g., Adams & Ferreira, 2009; Valenti, 2008).

#### **Dependent Variables**

The dependent variable is a broad-based measure of compensation as awarded, commonly termed 'total direct compensation' (TDC). It includes base salary and annual cash bonus plus any other cash compensation paid in that year. To this is added the value of the long term incentives granted in that year. This comprises the value of restricted

stock and other long term incentive plans, plus the Black-Scholes valuation of any stock options granted. Median CEO TDC was \$1.6 million and the mean was \$5.5 million. All financial variables are measured in 2001 dollars.

### **Independent Variables**

The independent variables comprise a set of control variables that allow for the obvious compensable factors such as the personal characteristics of the CEO and the size and performance of the company (Tosi, Werner, Katz & Gomez-Mejia, 2000). In terms of personal characteristics, the age of the CEO measured is entered to capture general human capital effects. The mean age was 58 years. In addition, a dummy variable ('gender') is included to describe when the CEO is female (2.4%). As an attempt to capture specific human capital, the analysis controls for both CEO tenure ('jobten', with an average of 8.4 years) and total time as a board director in any capacity at the company ('boardten', with an average of 10.5 years). As discussed below, it is also possible to interpret these measures in terms of the power of the CEO over the board (Bebchuk & Fried, 2004; O'Reilly & Main, 2010).

CEO pay has long been benchmarked using company size which is captured here both by the level of turnover ('sales') and by the number of employees ('emp'). The median level of sales (in 2000) was \$353 million and the median number of employees observed is 1,365. Company performance on which, correctly or not, it is claimed that much of CEO reward depends (Baker, Jensen & Murphy, 1988; Frydman & Jenter, 2010) is measured both by the stock market based total shareholder return ('tsr') and by the accounting measure of return on assets ('roa'). The median total shareholder return



(which includes share price appreciation and dividend yield) is 12.4% and the median return on assets in the sample is 5.5%.

The governance characteristics of the company are also sometimes assumed to determine CEO compensation (Larcker & Tayan, 2011). Governance is captured here by four measures. The size and independence of the board is described by the number of directors on the board ('ndir') and the percentage of independent directors ('pctind') respectively. The mean size of board is 8.6 people and the mean proportion of independent directors is 64 percent. In addition to the structure of the board, governance is gauged by the activity of the board through measures of the number of meetings of the main board ('bdmeet') and the total number of board sub-committees ('totcomm'). The mean number of board meetings per year was 7.5 and the mean number of board subcommittees (for example: audit, compensation, nomination, etc.) was 3.6.

In addition, annual dummy variables are used to control for macro-economic events. The fewest observations fell in 2001 (12.2%), with the other years being reasonably uniformly covered (20.3% in 2002; 22.4% in 2003; 22.3% in 2004; and 22.8% in 2005). Industry dummy variables are used in the non-panel estimates (when such measures would be collinear with the fixed effects). Six industry sectors are indexed: Agriculture/Mining/Construction with 4.5%; Manufacturing with 40.1%; Transport & Utilities with 8.2%; Retail with 6.1%; Wholesale with 2.8%; and Finance/ Real Estate/ Banking with 38.2%.

Finally, we measure the number of outsiders on the board of directors who are female ('females'). Across the sample, the average is 0.70 per board. The range of women outside directors serving on the board is zero to six with 62% of the firms in the

sample having at least one female board member. These estimates are comparable to those reported in earlier studies (e.g., Adams & Ferreira, 2009; Valenti, 2008).

### **Results**

Hypothesis 1 states the business case for diversity and proposes that firms with women outside directors on the board will perform better than firms without women. We provide two tests of this hypothesis. Table 2 uses the full data set (N=12,790 firm-year observations) and shows the results of fixed effect regressions of a series of control variables and the number of women on the board on firm performance assessed as total shareholder return (TSR) and return on assets (ROA). These models examine the relationship between the number of women outsiders on the board and the observed level of performance (models 1 and 3) and whether the presence of a woman on the board is related to observed changes in performance (models 2 and 4). Table 3 provides a more restrictive test and uses only firms that at the time of the first observation had no women outsiders on the board and then examines the effect of adding a woman on subsequent performance (N=1,796, with control variables measured as of the time of the first observation of the company in the sample). Results for these models show no statistically significant positive associations between either the number of women outside directors on the board or the addition of a woman to the board on performance. The only significant coefficient can be seen in model 3 of Table 3 and suggests that firms with boards adding women have a lower ROA. Overall, these results fail to confirm the business case hypothesis that firm performance is enhanced by adding women outside directors to the board.

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Insert Tables 2 and 3 about here

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Hypothesis 2 proposed an initial test of the tokenism argument suggesting that firms would be more likely to appoint women outside directors to the board when the company had organizational slack or resources that allowed them to focus on diversity. In this context, we proposed that firms that were performing better financially and those that were larger and had more directors would be more likely to appoint women outsiders to the board. Table 4 reports the result of a Poisson regression which uses a lagged set of controls and organizational characteristics as predictors of the number of female outsiders on the board. These results show that companies have more females on the board if the CEO is a female, the firm is larger and has a higher ROA, the board itself is larger (has more directors), has more independent directors, more board meetings and more committees of the board. These findings are largely consistent with previous research (e.g., Peterson & Philpot, 2007; Westphal & Milton, 2000) and suggest that firms will have more women on the board if it comes at a lower cost; that is, the firm has slack in the form of higher performance and a larger board.

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Insert Table 4 about here

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Hypothesis 3 proposed that firms with highly paid CEOs might be predisposed to appoint women outsiders to their boards as a way to camouflage their high levels of compensation. To test this we use the lagged level of the CEO's compensation as a predictor of the number of women outsiders on the board. As shown in model 2 of Table 4 higher CEO pay is positively associated with the number of women outsiders on the board. These results show that higher levels of CEO compensation awarded at time 1 are positively associated with the number of the women outsiders on the board at time 2,

suggesting that CEO compensation may be linked to the number of women outsiders on the board.

As a second test of Hypothesis 3, we examine whether firms with overpaid CEOs are more likely to add women outsiders to the board. In order to construct a measure of CEO over-or under payment, we first construct a series of wage equations predicting the level of CEO TDC (which includes base, bonus and the awarded value of stock options). As predictors we include a set of variables that include human capital variables (CEO age, gender, job and board tenure), industry dummies, firm characteristics (firm size and performance measured as ROA and TSR), a set of governance variables (board size, the number of outside directors, the number of board committees, and the number of meetings) and whether there were women outside directors on the board. The residuals from these wage equations are an index of over- or underpayment; that is, a positive residual from these equations indicates that the CEO is comparatively overpaid because his actual salary is higher than predicted, while a negative residual indicates comparative underpayment (Wade, O'Reilly & Pollock, 2006).

Although not a direct test of Hypothesis 3, the results in Table 5 also show that the number of women outside directors on the board has a positive and significant effect on CEO pay, both in the annual regressions (models 1-5), and, importantly, in model 6 which reports the results of the fixed effects panel regression. These results suggest that having a woman on the board is associated with almost a 5 percent increase in CEO pay beyond what would be expected after controlling for characteristics such as firm size and performance. When evaluated at the mean for this sample, this is worth roughly \$300,000 for a CEO.

As a second test to determine if CEO pay (levels and residuals) predict the appointment of a woman to the board, Table 6 reports the results of a probit analysis in which the dependent variable is a zero if no woman is added and 1 if over the 2001-2005 period a woman is appointed. As shown in Table 6, after controlling for CEO, firm, and governance effects and whether there were any women outside directors on the board at the beginning of the observational period, there is no significant effect for CEO pay level but a positive effect for overpayment. The control variables are measured as of when the firm is first observed in the sample, before the addition of any women as outside directors. Although not reported here, a second analysis using only firms that had no woman on the board at the beginning of the sample (N=1,796) yields equivalent results. This finding suggests that firms with CEOs who are comparatively overpaid at the beginning of the period are significantly more likely to add a woman to the board than those with CEOs who are underpaid.

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Insert Tables 5 and 6 about here

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When the results shown in Tables 4, 5 and 6 are taken together, they suggest that, as hypothesized, the appointment of women outsiders to the board is significantly associated with CEO pay. First, as shown in Table 4, higher levels of CEO pay are associated with more women outsiders on the board. Second, in a wage equation predicting CEO compensation, the presence of women outsiders is associated with higher levels of compensation (Table 5). Finally, when CEO pay is used to predict the addition of women outside directors to the board, there is evidence that overpaid CEOs are more likely to add a woman. These results suggest a possible dynamic: Firms with more women outsiders on the board have, on average, higher levels of CEO pay and, when the

CEO is paid more than his qualifications and performance would justify, the company is more likely to add a woman to the board.

Hypothesis 4 proposed that boards with women on them were likely to pay more than those without them and suggests a test of this dynamic. To test this hypothesis, we examine the impact of adding a woman on the relative over- or underpayment of the CEO in the subsequent period. To do this we use the wage residuals calculated in the panel regression in Table 5 as measured at the beginning of our sample selection. Using the subsample of firms that had no women outside directors at the beginning of our time series (N=1,796), we compute a simple t-test for the residuals between those firms that added a woman (327 firms) versus those that did not (1,469 firms). This test reveals that firms that added a woman had significantly more positive wage residuals at the beginning of the time series (13% larger) than those that did not ( $t=2.40$ ,  $p<.02$ ), indicating that higher levels of CEO overpayment precede the appointment of a woman to the board. Recall that in computing these residuals we controlled for human capital, firm, industry and performance characteristics so that these differences confirm Hypothesis 4 and indicate that adding women outside directors to the board results in higher levels of CEO compensation.

### **Discussion**

Our results are consistent with women being appointed to the board as outside directors for symbolic rather than substantive reasons. First, consistent with previous studies of the effects of gender diversity and group performance, we find no evidence that adding women outside directors to the board is associated with higher levels of subsequent firm performance. Second, we do find that firms are more likely to appoint

women when the “costs” are lower; that is, women outside directors are more likely to be added by firms that are larger, more profitable, and with more board opportunities (larger boards and more committee meetings). Although not hypothesized, we also find strong evidence that female CEOs are more likely to appoint women outside directors to their board than male CEOs, suggesting homosocial reproduction (Kanter, 1977). We also find some evidence suggesting that CEOs who are paid more are also more likely to appoint women as outside directors. Finally, we find strong evidence that boards with more women as outside directors compensate their CEOs at significantly higher levels. We see this pattern of results as consistent with women be appointed as outside directors for symbolic rather than substantive reasons.

What might account for the finding that boards with more women appear to be more generous? Although the present study does not permit us to offer a definitive explanation, previous research has shown that directors may be subject to social influence processes from the CEO that can lead to higher compensation (e.g., O’Reilly & Main, 2010; Westphal & Zajac, 1995). For example, Belliveau, O’Reilly and Wade (1996) found that CEOs of higher social status were paid more. O’Reilly and Main (2010) showed strong effects for reciprocity on CEO pay such that board members appointed after the CEO were more generous in their compensation than those appointed before the CEO. These effects were even more pronounced when the board members themselves were well compensated. Thus, it may be that joint effects of social influence and gift exchange can lead new board members, in this case women, to over-compensate the CEO.

Overall, our results are consistent with a number of previous studies that have failed to find links between women outside directors and firm performance but have noted that

women may be added for other reasons. For instance, Farrell and Hersch observed that (2005, p. 85), “Rather than the demand for women directors being performance based, our results suggest corporations are responding to either internal or external calls for diversity.” Establishing clear linkages between board diversity and firm outcomes is a difficult challenge. If, as we find here, firms that are doing better are more likely to appoint women outside directors, one might expect a positive correlation between the appointment of women and subsequent firm performance over short time frames. This may explain why some studies find a positive relationship between the appointment of women to the board and subsequent firm performance (e.g., Carter et al., 2003).

It is important to recognize that demographic measures of board composition are crude indicators of the skills and experience possessed by board members. The relevant underlying characteristics presumed to be indexed by gender may easily vary more among men and women than between those gender categories. Further, researchers are often unclear about the mechanisms by which the board of directors might influence corporate financial performance (Zahra & Pearce, 1989). Asked more pointedly, why should we expect board diversity to produce an impact that improves firm performance (Carter et al, 2010)? Certainly corporate performance is not a direct measure of board effectiveness and is clearly influenced by many other factors (Huse, Nielsen & Hagen, 2009).

As an explanation of board appointments of women, the so-called “business case for diversity” appears incomplete. The inherent logic is that the addition of women and minorities to the board will somehow enhance board effectiveness. The mechanism through which this is proposed to occur is the provision of new and valuable information



provided by these added members that is of sufficient relevance and importance that it will affect firm-wide performance (e.g., Miller & Triana, 2009; Williams & O'Reilly, 1998). While this logic seems quite reasonable, the evidence in support of this claim is elusive. First, it is unclear what new information such an added board member might bring that is sufficiently different from other board members to result in marked improvements in organizational performance; that is, why should job-relevant informational diversity be associated with ethnicity or gender? And, even if this were true, there is evidence suggesting that diverse groups often have difficulty accessing relevant information because of difficult group dynamics (Jehn, et al., 1999; Lau & Murnighan, 2005; Mannix & Neale, 2005; Phillips, et al., 2004).

Second, assuming that one draws new board members from a pool of equally qualified applicants, why should the addition of a single new female or minority board member be significantly different in a profit enhancing sense from adding others with those same skill sets? Importantly, this same argument only lends weight to the question, why not appoint a new female or minority board member? Although there is some evidence to suggest that women directors are likely to be younger and with less line management experience, most studies conclude that otherwise men and women have equivalent human capital (e.g., Hillman, et al., 2002; Peterson & Philpot, 2007). For example, in a study of the human capital of 144 new board members, Singh, Terjesen and Vinnicombe (2008) reported women and men to have equivalent skills and experiences. Third, even if there might be unique information and perspectives available, will this information be understood and acted upon in light of the difficulties heterogeneous

groups have in accessing unique information (Pearsall, Ellis & Evans, 2008; van Knippenberg, De Dreu & Homan, 2004; Westphal & Milton, 2000)?

Even studies of the impact of diversity at more appropriate levels of analysis (e.g., groups and sub-units) find little in the way of positive effects. For instance, Leonard, Levine and Joshi (2003) in a study of more than 70,000 employees in 700 retail stores found little payoff to matching employee demographics to those of their customers, except for when the customer did not speak English. Other research has shown that ethnically homogeneous teams can be more productive (e.g., Hamilton, Nickerson & Owan, 2007) and that, unless carefully managed, diversity in groups is as likely to have negative effects as positive (e.g., Jehn, Neale, & Northcraft, 1999). A meta-analytic review of research on job-related (e.g., functional background) and less job-related (e.g., gender) diversity showed no consistent relationship with group performance (Webber & Donahue, 2001). Other meta-analytic studies have also failed to find links between group demography and performance (e.g., Bowers, et al., 2000; Joshi & Roh, 2009). This led the authors of a multi-university research effort exploring the effects of diversity on business to conclude. “Our results suggest the need to move beyond the business case argument for advancing the practice of diversity in industry (2002, p. 2).”

Needless to say, the lack of any strong evidence for a business case for board diversity does not imply that the appointment of women as outside directors is unjustified. In a positive sense, they may simply be the best qualified person for the job. From a normative perspective, as van der Walt and Ingley observe (2003, p. 230), “The literature strongly supports the idea of diversity, at least in a social and moral sense...” There is evidence that appointing women can have positive effects on organizational outcomes

other than firm financial performance. For instance, several studies have found significant relationships between the numbers of women officers on the top management team and higher firm performance (e.g., Dezsó & Ross, 2008; Francoeur et al., 2008). Other studies have shown that a firm's reputation for diversity can have positive effects on firm value (Miller & Triana, 2008; Wright, Ferris, Hiller & Kroll, 1995). In a study of Spanish companies, Campbell and Vera (2010) found that the appointment of a woman to the board was associated with a short-term increase in the stock price. Since recent Spanish law requires a positive discrimination in the appointment of women, this result appears likely to reflect a legitimacy effect in which shareholders are positively disposed toward the firm for complying with regulations. Other research has shown that firms that lack moral legitimacy in the eyes of the market are punished (e.g., Suchman, 1995; Wright, et al., 1995). This suggests that insofar as society values diversity in the boardroom, appointing qualified women as directors is an appropriate thing to do.

The support found above for Hypotheses 3 suggests that higher CEO pay is associated with a greater propensity to appoint female outsiders to the board. Although not tested directly here, substantial earlier research has documented the tendency for individuals to present themselves in ways that enhance their reputation (e.g., Schlenker, 1980). The results here are consistent with this process and suggest that the appointment of women may reflect an attempt on the part of overpaid CEOs to justify their compensation. The danger is that this tokenism may undermine the legitimacy of the appointment process and end up reducing the effectiveness of women directors. A woman director echoing this concern makes the point clearly: "Does a person's sexual identity bring real value to the

boardroom?...No. Women may make excellent board members, but the fact that they happen to be female is simply not germane in this context (Scherer, 1997, p. 2)”

The problem of under-representation of women in the boardroom is a real one, not because of any so-called “business case” but because by limiting the pool of qualified applicants to half the total possible population of talent, corporations may miss out on a large number of highly qualified candidates. Insofar as qualified women are not considered for board positions, it is also a problem of fairness. So what is the solution to this problem? Helfat, Harris and Wolfson (2006) suggest that as the number of female CEOs and senior line managers grows, the pool of women directors will also become deeper with the result that the present imbalance will diminish. Although this “pipeline theory” is not popular with some advocates (Zelechowski & Bilimoria, 2004), it appears to be working, albeit more slowly than many might like. In a study of women on boards across 43 countries Terjesen and Singh (2008) found that countries with more women on the board also had more women senior executives. Consistent with this process, there is evidence that the number of women directors and officers are correlated (Bilimoria, 2006) and that as women and minorities serve on more boards there are positive network effects (Hillman, et al., 2007; Westphal & Milton, 2000; Westphal & Stern, 2005). This already seems to be happening in some industries (Angert & Pathak, 2010; Brammer, et al., 2007).

Solving a problem requires that its cause be diagnosed properly. If the underlying cause is misdiagnosed, then any proposed solution is likely to be imperfect. The results of the study reported here, and much previous research, caution against relying on the business case argument in which the appointment of women as outside directors to the

board is based on an expectation of improved performance of large public corporations. If a woman is equally as qualified as a man then there is clearly an objective case for her appointment. Our results, however, suggest that the appointment of women as outside directors is partly based on more normative concerns relating to tokenism and legitimacy. We observe a relationship between over-paid CEOs and the appointment of women outsiders to boards with the added possibility of women being more generous. These results suggest that the board appointment process remains far from objective.

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Table 1: Summary statistics for the variables deployed in this study

		Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1)	lpay	14.388	1.298	11.52	20.28	1.00													
(2)	age	57.608	8.220	30.00	94.00	0.07	1.00												
(3)	gender	0.024	0.153	0.00	1.00	-0.03	-0.05	1.00											
(4)	jobten	8.384	7.420	1.00	54.80	-0.09	0.41	-0.04	1.00										
(5)	boardten	10.486	8.486	1.00	54.80	-0.09	0.46	-0.04	0.84	1.00									
(6)	tsr	0.269	0.987	-0.99	32.00	-0.05	-0.02	-0.01	0.00	-0.01	1.00								
(7)	roa	0.036	0.167	-3.08	0.92	0.18	0.11	-0.02	0.05	0.09	0.09	1.00							
(8)	lsize	5.894	1.920	0.01	12.41	0.64	0.17	-0.06	-0.03	0.02	-0.07	0.41	1.00						
(9)	lemp	7.291	1.876	2.30	14.15	0.57	0.17	-0.06	-0.01	0.04	-0.08	0.31	0.88	1.00					
(10)	ndir	8.572	2.609	3.00	26.00	0.32	0.18	-0.05	-0.04	0.01	-0.06	0.10	0.43	0.40	1.00				
(11)	pctind	0.640	0.172	0.08	1.00	0.21	0.04	0.02	-0.08	-0.11	-0.02	0.04	0.17	0.15	0.10	1.00			
(12)	bdmeet	7.508	3.586	1.00	52.00	0.01	-0.06	0.01	-0.10	-0.11	-0.03	-0.10	-0.03	-0.04	0.07	0.10	1.00		
(13)	totcomm	3.619	1.162	1.00	11.00	0.27	0.10	-0.03	-0.07	-0.04	-0.04	0.09	0.33	0.28	0.42	0.19	0.11	1.00	
(14)	females	0.701	0.864	0.00	6.00	0.34	0.06	0.14	-0.10	-0.08	-0.04	0.11	0.41	0.39	0.47	0.25	0.06	0.29	1.00

Note: 'lpay' logarithm of total pay awarded (\$2001); 'age' CEO age in years; 'gender' CEO's gender, = 1 if female; 'jobten' years served as CEO; 'boardten' years CEO has spent on the board; 'tsr' total shareholder return, log return; 'roa' return on assets; 'lsize' log of annual turnover (in \$2001m); 'lemp' log of number of employees; 'ndir' total number of directors on board; 'pctind' fraction of directors who are outsiders; 'bdmeet' number of board meetings in that year; 'totcomm' number of board subcommittees; 'females' number of outsiders on board who are female.



Table 2: Regressions of Company Performance: Dependent Variable - tsr and roa

	(1)	(2)	(3)	(4)
	tsr	del_tsr	roa	del_roa
age	0.121	3.175	0.006	-0.005
jobten	0.001	-0.051	0.000	0.000
boardten	0.010	-1.002	0.005	0.014
lsize	0.055	0.467*	0.087***	0.022
lemp	-0.434***	-0.449**	-0.056***	-0.057***
ndir	-0.003	-0.005	0.000	0.001
pctind	0.139	-0.028	0.026*	0.023
bdmeet	-0.011	-0.004	-0.002*	-0.001
totcomm	-0.008	0.068	0.003	-0.000
females	-0.011	-0.163	-0.005	-0.006
add_woman		0.261		-0.003
Constant	-4.049	-170.106	-0.459	0.415
$R^2$	0.086	0.091	0.057	0.012
Adjusted $R^2$	0.085	0.090	0.056	0.011
rss	7617.625	1.2e+04	50.186	39.407
mss	718.693	1176.520	3.052	0.496
F	49.167	39.711	12.161	2.700
df_m	13.000	13.000	13.000	13.000
df_r	4686.000	3358.000	4686.000	3358.000
pvalue	0.000	0.000	0.000	0.021
Observations	12790	8103	12790	8103

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

1. Dependent Variable is respectively total shareholder return, the year-on-year change in total shareholder return, return on assets, the year-on-year change in return on assets. Fixed effects on company-CEO match. Year dummies included but not reported.

2: 'age' CEO age in years; 'gender' CEO's gender, = 1 if female; 'jobten' years served as CEO; 'boardten' years CEO has spent on the board; 'tsr' total shareholder return, log return; 'roa' return on assets; 'lsize' log of annual turnover (in \$2001m); 'lemp' log of number of employees; 'ndir' total number of directors on board; 'pctind' fraction of directors who are outsiders; 'bdmeet' number of board meetings in that year; 'totcomm' number of board subcommittees; 'females' number of outsiders on board who are female; 'add\_woman' whether has added a female outsider, having had none.

Table 3: Regressions of Company Performance:  
 Dependent Variable - tsr and roa - for those companies starting with no female outside directors

	(1)	(2)	(3)	(4)
	tsr	del_tsr	roa	del_roa
age	0.003	0.007	0.001	0.000
gender	0.404	0.380	0.049	-0.088
jobten	0.002	-0.002	-0.001	-0.001
boardten	-0.005	-0.001	0.001	-0.000
lsize	-0.022	0.052	0.065***	-0.008
lemp	0.015	0.011	-0.024***	0.007
ndir	0.004	0.039*	-0.003	-0.001
pctind	-0.077	-0.175	0.012	-0.012
bdmeet	0.002	0.000	-0.003***	0.001
totcomm	0.007	-0.016	-0.004	-0.002
add_woman	-0.005	-0.054	-0.027**	-0.013
Constant	-0.527***	-1.595***	-0.281***	-0.038
$R^2$	0.071	0.040	0.203	0.017
Adjusted $R^2$	0.061	0.030	0.195	0.006
rss	817.816	4376.055	49.511	47.892
mss	62.500	184.525	12.618	0.810
F	11.246	5.506	12.014	1.933
df_m	19.000	19.000	19.000	19.000
df_r	1776.000	1776.000	1776.000	1776.000
pvalue	0.000	0.000	0.000	0.043
Observations	1796	1796	1796	1796

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

1. Dependent Variable is respectively total shareholder return, the year-on-year change in total shareholder return, return on assets, the year-on-year change in return on assets. Sample includes only those observed on at least two occasions. Each company enters only once. Independent variables measured as when first observed in sample. Changes in performance measured in terms of first to final year. Sample restricted to those who have no female outside directors when first observed. Year and industry dummies included but not reported.

2: 'age' CEO age in years; 'gender' CEO's gender, = 1 if female; 'jobten' years served as CEO; 'boardten' years CEO has spent on the board; 'tsr' total shareholder return, log return; 'roa' return on assets; 'lsize' log of annual turnover (in \$2001m); 'lemp' log of number of employees; 'ndir' total number of directors on board; 'pctind' fraction of directors who are outsiders; 'bdmeet' number of board meetings in that year; 'totcomm' number of board subcommittees; 'females' number of outsiders on board who are female; these control variables are measured at first observation (i.e., before dependent variable); 'add\_woman' whether has added a female outsider, having had none.

Table 4: Poisson Regression: Dependent Variable is the number of female outside directors on board

	(1) model__1	(2) model__2
age	0.001	0.001
gender	0.917***	0.914***
jobten	-0.000	-0.001
boardten	-0.010***	-0.009***
tsr	-0.007	-0.008
roa	0.348**	0.359**
lsize	0.089***	0.074***
lemp	0.070***	0.069***
ndir	0.109***	0.109***
pctind	1.117***	1.099***
bdmeet	0.009**	0.009**
totcomm	0.045***	0.044***
lpay		0.031**
Constant	-3.537***	-3.882***
Observations	8103	8103
df_m	20.000	21.000
r2_p	0.143	0.143
ll	-7898.482	-7895.795
ll_0	-9212.680	-9212.680
chi2	3886.632	3931.310
pvalue	0.000	0.000

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

1. Dependent Variable is females - number of female outside directors on board that year. Year and Industry dummies included but not reported.

2: 'lpay' logarithm of total pay awarded (\$2001); 'age' CEO age in years; 'gender' CEO's gender, = 1 if female; 'jobten' years served as CEO; 'boardten' years CEO has spent on the board; 'tsr' total shareholder return, log return; 'roa' return on assets; 'lsize' log of annual turnover (in \$2001m); 'lemp' log of number of employees; 'ndir' total number of directors on board; 'pctind' fraction of directors who are outsiders; 'bdmeet' number of board meetings in that year; 'totcomm' number of board subcommittees; 'lpay' is the logarithm of pay awarded (TDC). Control variables 'tsr' through 'lpay' enter as lagged variables.

Table 5: Wage Regression: Dependent Variable is log of TDC awarded

	(1)	(2)	(3)	(4)	(5)	(6)
	Y_2001	Y_2002	Y_2003	Y_2004	Y_2005	panel
age	-0.006	-0.002	0.002	-0.002	0.002	0.123
gender	-0.414*	-0.073	0.051	-0.003	0.051	
jobten	0.008	0.003	0.006	0.007	0.006	-0.020
boardten	-0.019**	-0.013**	-0.017***	-0.017***	-0.017***	0.190*
tsr	-0.044	-0.016	0.023	0.009	0.023	0.024**
roa	-0.523*	-0.514***	-0.604***	-0.538***	-0.604***	0.444***
lsize	0.341***	0.404***	0.447***	0.459***	0.447***	0.214***
lemp	0.096**	0.036	-0.022	-0.008	-0.022	0.193***
ndir	-0.008	-0.002	0.009	0.011	0.009	-0.016
pctind	0.354*	0.484***	0.521***	0.564***	0.521***	0.039
bdmeet	-0.003	-0.002	0.008	0.001	0.008	-0.004
totcomm	0.039	0.037*	0.031	0.039*	0.031	-0.029
females	0.084*	0.087**	0.102***	0.074**	0.102***	0.048*
Constant	12.135***	11.609***	11.304***	11.489***	11.304***	3.335
$R^2$	0.366	0.439	0.464	0.486	0.464	0.045
Adjusted $R^2$	0.358	0.435	0.461	0.483	0.461	0.044
rss	1800.400	2337.545	2457.677	2433.455	2457.677	3004.607
mss	1037.200	1827.206	2130.881	2304.314	2130.881	141.225
F	47.805	112.919	120.088	122.453	120.088	18.834
df_m	18.000	18.000	18.000	18.000	18.000	15.000
df_r	1541.000	2569.000	2853.000	2829.000	2853.000	4686.000
pvalue	0.000	0.000	0.000	0.000	0.000	0.000
Observations	1560	2588	2872	2848	2872	12790

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

1. Dependent Variable is log of total direct compensation awarded in year. Panel estimates are fixed effects. Year dummies are included in panel estimates but not reported.

2: 'age' CEO age in years; 'gender' CEO's gender, = 1 if female; 'jobten' years served as CEO; 'boardten' years CEO has spent on the board; 'tsr' total shareholder return, log return; 'roa' return on assets; 'lsize' log of annual turnover (in \$2001m); 'lemp' log of number of employees; 'ndir' total number of directors on board; 'pctind' fraction of directors who are outsiders; 'bdmeet' number of board meetings in that year; 'totcomm' number of board subcommittees; 'females' number of outsiders on board who are female.

Table 6: Probit: Dependent Variable is whether a female outside director is added

	(1) model__1	(2) model__2
age	0.006	0.014**
gender	0.974***	0.977***
jobten	0.015*	0.013*
boardten	-0.015**	-0.002
lsize	0.057	0.052
lemp	0.076*	0.087**
ndir	0.041***	0.040***
pctind	-0.268	-0.285
bdmeet	-0.003	-0.003
totcomm	0.022	0.018
females	-0.253***	-0.255***
lpay	0.017	
pay_residual		0.063*
Constant	-2.989***	-3.306***
Observations	3359	3359
df_m	20.000	20.000
r2_p	0.056	0.058
ll	-1495.354	-1492.780
ll_0	-1583.987	-1583.987
chi2	146.162	150.682

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

1. Dependent Variable is whether add a female outside director after first entering sample. Year and industry dummies are included but not reported.

2: Control variables are as first measured when enter sample, before any observed addition of women as outside directors: 'age' CEO age in years; 'gender' CEOs gender, = 1 if female; 'jobten' years served as CEO; 'boardten' years CEO has spent on the board; 'tsr' total shareholder return, log return; 'roa' return on assets; 'lsize' log of annual turnover (in \$2001m); 'lemp' log of number of employees; 'ndir' total number of directors on board; 'pctind' fraction of directors who are outsiders; 'bdmeet' number of board meetings in that year; 'totcomm' number of board subcommittees; 'females' number of outsiders on board who are female; 'lpay' is the logarithm of the pay awarded in the year when the CEO was first observed; 'pay\_residual' is the residual from the panel wage regression when the CEO first appeared in the sample .