WHY DO MALE AND FEMALE CEOS EXIT?

THE ROLE OF FIRM PERFORMANCE AND BOARD HOMOPHILY

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Abstract: We build on tokenism and homophily theories to investigate the phenomenon of a 'glass cliff' for female CEOs who may be more likely to exit their firms, especially following immediate and longer term trends in negative performance. Investigating a matched sample of 1,918 CEOs of privately owned Swedish firms from 2005-2010 and controlling for a variety of CEO, board, firm, and industry variables, we find higher turnover among female CEOs compared to male CEOs. While male and female CEOs are more likely to exit following their firms' immediate negative performance, female CEOs are more likely to exit from firms with a negative performance trend, and when the firm's board is characterized by a high degree of male directors. By contrast, female CEOs are less likely to exit when their boards have more age diversity.

"While I regret the board and I have differences about how to execute HP's strategy, I respect their decision. HP is a great company and I wish all the people of HP much success in the future." - Carly Fiorina on her departure as Hewlett Packard CEO

As the above quote illustrates, CEOs face mounting pressure to deliver outstanding results to shareholders and may disagree with the board of directors and other stakeholders regarding strategic decisions. The average tenure of publicly listed firm CEOs is less than six years (Kaplan & Minton, 2011), a considerable decrease from the 14 year average reported over two decades ago (Vancil, 1987). For the last 40 years, scholars have struggled to identify the factors that lead to increasingly higher CEO turnover rates, focusing on firm performance and CEO tenure, with mixed results. This highlights a need to consider the organizational context in which the CEO operates (Blettner, Chaddad, & Bettis, 2012; Finkelstein, Hambrick, & Cannella, 2009).

Specifically, studies of CEO turnover generally lack a gender perspective (Hill, Upadhyay, & Beekun, 2014), despite significant practitioner and media interest. This knowledge void is surprising as female CEOs face greater isolation and constrained expectations and are often seen as 'tokens' in male-dominated leadership positions (Kanter, 1977, 1978), and may be more closely scrutinized and evaluated compared to their male CEO counterparts. Investigating this knowledge void is essential as female CEOs are role models for women in corporations (Bilimoria, 2006).

Further, the vast majority of research on CEOs, boards of directors, and other top management team members is based on publicly listed firms (Finkelstein *et al.*, 2009). We have limited understanding of the corporate governance, including the CEO, of private firms which constitute the vast majority of all firms in both developed and developing economies. Compared

to public firms, private firms have distinct governance structures, processes, routines, cultures, and patterns of development (Davis *et al.*, 2006; George, 2005). The lack of public scrutiny by shareholders, media, and activists may make private firms *more* prone towards homophily, i.e., the tendency to group with similar others - in this case, the tendency for a dominance of male directors and CEOs.

Our study sheds light on these issues by integrating tokenism and homophily theories to investigate the drivers of male and female CEO turnover. Following from tokenism theory, female CEOs are more visible and face greater pressure to perform (Kanter, 1977). We therefore expect that, relative to their male counterparts, female CEOs will be more likely to exit. Second, we extend the existing literature on poor performance as a predecessor to CEO turnover by considering the tokenism *context*, arguing that male and female CEOs will be differentially pressured to exit following an immediate negative performance result. Third, we provide a novel application of homophily theory by arguing that while female CEOs will be more likely to exit from firms which boards are more male-dominated, they will be less likely to exit from boards that are very diverse in terms of directors' ages. We find support for our hypotheses using a matched sample of 1,918 male and female CEOs in a large sample of privately held Swedish firms from 2005 to 2010.

THEORY DEVELOPMENT AND HYPOTHESES

Despite the three decades which have passed since the term 'glass ceiling' was first coined to describe gender barriers, women have made limited progress in reaching firms' executive suites (Daily, Certo, & Dalton, 1999). Women occupy 4.6 percent of CEO and 16.9 percent of board director positions at the top U.S. firms (Catalyst, 2014). Existing research focuses on individual, firm, and environment factors that concern women's *promotion* to CEO positions (Cook &

Glass, 2013; Eagly & Carli, 2007; Guthrie & Roth, 1999; Helfat, Harris, & Wolfson, 2006; Lee & James, 2007; Oakley, 2000; Ryan & Haslam, 2007; Weyer, 2007). There is limited analysis of women who *leave* the CEO suite (e.g., Hill, Upadhyay, & Beekun, 2014). The 'glass cliff' describes the precariousness of women's leadership positions given their association with a greater risk of failure (Ryan & Haslam, 2007).

Tokenism theory (Kanter, 1977) describes how individuals who comprise less than 15 percent in a given context are "tokens" who are impacted by their experience as a minority. More precisely, token status increases an individual's likelihood of experiencing three perceptual processes: *visibility*, *contrast*, and *assimiliation* (Kanter, 1977). Enhanced *visibility* and heightened attention implies that differences are obvious or visible to other group members. As a result, tokens may feel that they have to work harder than their peers and that their performance is more closely scrutinized. Meta-analytic research shows that women who perform in the same leadership roles as men receive less favorable evaluations (Eagly, Makhijani, & Klonsky, 1992). *Contrast* refers to the exaggeration of the perceived differences between the tokens and the dominant group. Thus, tokens may experience isolation and polarization from the dominant members of the group. In the highest echelon of firm leadership, female CEOs may feel less comfortable with the dominant group, and/or evaluated as less prototypical of the group of CEOs. Finally, *assimilation* describes when a token person's characteristics are distorted to fit the mold of the stereotype. Early work relied on the notion that men and women share similar experiences of tokenism; more recent work shows that women have more negative experiences of being a token (Chatman & O'Reilly, 2004).

The effects of tokenism, as outlined by Kanter (1977), primarily take place when an individual is operating in an occupation that is typically dominated by the other group (Hewstone

et al., 2006) – precisely the situation for women entering the CEO post. As noted by Hill et al. (2014), female CEOs may face unintentional or deliberate discrimination and be more likely to leave the CEO suite. Based on tokenism theory, we expect:

Hypothesis 1. Female CEOs are more likely than male CEOs to exit, ceteris paribus.

Firm issues: firm performance

Prior research anchored in agency and stakeholder theories suggests that, to protect shareholder value, a CEO with a poor performance record is likely to be replaced. Indeed, empirical studies, almost entirely of publicly traded firms, indicate that CEOs are more likely to exit after acute firm performance events such as bankruptcy or restructuring (Gilson & Vetsuypens, 1993; Daily & Dalton, 1995), corporate restatements (Arthaud-Day *et al.*, 2006), unexpected low earnings (Puffer & Weintrop, 1991), and other organizational crises (Withers *et al.*, 2012). Summarizing extant research, Finkelstein *et al.* (2009: 170) call for an examination of performance metrics "from different vantages: its level, its trends, its persistence, and its deviation from expectations."

Tokenism theory's visibility dimension assumes that women are more visible and that their performance is more closely scrutinized. Hence, women face greater performance pressures. Therefore, when firm performance is negative, women may face tougher evaluations compared to their male counterparts. The contrast and assimilation dimensions of tokenism are distinguished in research that investigates the perceived incompatibility between being a good leader and being female (e.g., Eagly & Karau, 2002; Heilman *et al.*, 2004). Firms that experience lower performance will often respond by making radical changes. Tokenism suggests that CEOs in more precarious positions will be more highly scrutinized. Together, this leads us to expect:

Hypothesis 2a. Following recent negative financial performance, female CEOs are more likely to exit compared to male CEOs.

Hypothesis 2b. Following a negative financial performance trend, female CEOs are more likely to exit compared to male CEOs.

Board homophily, diversity and dissimilarity

The board of directors is typically characterized by a high share of men. In terms of gender, the share of male board members relates to an individual's sense of being a token. Homophily theory predicts that people who are more similar to one another have higher rates of contact (Lazarsfeld & Merton, 1954; Williams & O'Reilly, 1998), and is an important mechanism in the formation of social networks, groups, and teams (McPherson, Smith-Lovin, & Cook, 2001; Ruef, Aldrich, & Carter, 2003). Organizations tend to favor homogeneity (Schneider, 1987; Sacco & Schmitt, 2005) such that newly recruited members often represent the board's existing features (Ruigrok *et al.*, 2006). The inclination for homophily holds for a diverse set of characteristics, ranging from demographics and personality traits to lifestyle or opinions (Williams and O'Reilly, 1998).

We integrate tokenism and homophily theories to consider the multiple contexts in which an individual has a minority status in a group, for example by gender and age. To understand the effects of tokenism, it is important to consider gender as a status marker and also how it interacts with other status markers in context (Yoder, 2002). Heterogeneity and diversity are group level constructs; similarity and dissimilarity are investigated at the individual level (Sacco & Schmitt, 2005). Both levels are important for understanding CEO turnover. At the group level, diversity leads to turnovers (Wagner, Pfeffer, & O'Reilly, 1984; Tsui, Egan, & O'Reilly, 1992). At the individual level, managers dissimilar to others in an otherwise homogeneous top management team are most likely to exit (O'Reilly, Caldwell, & Barnett, 1989). In the demographic relational approach, although findings are mixed, gender and age can be influential in group dynamics and

outcomes (Bell *et al.*, 2011). We examine the extent to which gender and age diversity on the board affects the likelihood of male and female CEO exit.

Gender diversity of the board

Seminal theorizing on tokenism suggests that men and women would react similarly to being tokens (Kanter, 1977); however, subsequent work reveals gender differences (Chatman & O'Reilly, 2004; Floge & Merrill, 1986) or is inconclusive (Graves & Elsass, 2005). Some studies indicate that male tokens are more likely to leave a group (Chatman & O'Reilly, 2004); others argue and find evidence for the opposite (Cohen & Swim, 1995). In their experimental study of 208 university students, Cohen and Swim (1995) report that token women, compared to non-token women, express a stronger desire to leave their group. Token men, on the other hand, do not express a willingness to exit the group.

Research indicating that men are more prone to leave female-dominated groups frequently draws on status-based arguments (Chattopadhyay, 1999). Boards of directors are part of a firm's upper echelon and generally have a high status within the firm (Finkelstein *et al.*, 2009). As a consequence, token male CEOs are less likely to fear that their status is being devalued. Women, on the other hand, are more likely to experience the negative aspects of tokenism, such as isolation, stereotyping, and a feeling of not fitting in. When women have a critical mass, they are more likely to be able to affect changes (Konrad, Kramer, & Erkut, 2008). This leads to the following prediction:

> *Hypothesis 3. The share of men on the board is more likely to influence the exit of female CEOs such that a larger share of men on the board increases female CEO turnover.*

Age diversity of the board

Another visible demographic difference which relates to tokenism and homophily is age. Friendships are often characterized by age homophily (McPherson *et al.*, 2001; Verbrugge, 1977). Similarly-aged team members are more likely to have a shared common experience and to converse spontaneously (Zenger & Lawrence, 1989).

We argue that boards' age diversity will be differentially related to the risk of male and female CEO exits for two reasons: First, boards of directors are distinct from other types of teams as diversity is more likely to be valued (Johnson, Schnatterly, & Hill, 2013). Directors with diverse profiles can endow their boards with unique expertise, social networks, and legitimacy (Hillman, Cannella, & Harris 2002). Second, the potential negative effects of diversity can be remedied by overlaps on other diversity dimensions (Li & Hambrick, 2005). If managers who are distant to an otherwise homogeneous board are more likely to exit – such as female CEOs in male dominated boards – board diversity on other dimensions such as age may lessen the risk of turnover (O'Reilly *et al.*, 1989). Age diversity could create a more accommodating atmosphere for female CEOs and decrease the risk that factional groups based on gender are activated (Hambrick, 2005). We therefore predict that while boards' age diversity should not be related to the risk of male CEO exit, it will decrease the likelihood of turnover among female CEOs:

> *Hypothesis 4. The board's age diversity is more likely to influence the exit of female CEOs such that more age diversity decreases female CEO turnover.*

DATA AND METHODOLOGY

We test our theory and hypotheses with matched longitudinal data from three annual government registers maintained by Statistics Sweden: LISA, RAMS, and the company board database. LISA includes all adult residents' demographic and financial information, e.g., individual income, tax

statements, financial records, birth registries, school, and compensation records. RAMS is an annual mandatory survey of all legal residents matched to firms with at least one employee or earning a profit, and contains data on employment status and industrial structures. The company board database includes the personal identity of all directors in private and public firms. The matching of these three databases provides a complete sample of large private firms' CEOs and directors, an under-examined but significant population as private firms comprise approximately 99.9 percent of all companies in Sweden, the US, and most countries around the world.

Sweden is an ideal context to study CEO turnover and gender differences for two reasons: Sweden consistently holds a high ranking in the cross-country Global Gender Gap Report of gender differences in pay gaps, education, and proportions of senior managers (World Economic Forum, 2013). Despite this high ranking, the country has serious gender inequality in the highest echelon of the business arena. For example, only 9 of the 254 largest publicly listed firms have a female CEO and women hold only 23 percent of directorships in Swedish listed firms (Statistics Sweden, 2008). Thus, although Swedish political structures and legal systems provide an infrastructure for gender equality, there appear to be other social mechanisms that influence actual gender equality. Our design isolates the effects of homophily and tokenism, enabling a stronger test of theory.

To examine CEO turnover, we include only privately held firms with more than 150 employees. We deleted firms where CEOs had a significant ownership stake due to their widely different governance structures (Gomez-Mejia, Larraza-Kintana, & Makri, 2003; Schulze, Lubatkin, & Dino, 2003). We exclude smaller firms which have limited governance structure and are often owner-managed and have less professional processes (Sine, Mitsuhashi, & Kirsch, 2006). We also exclude publicly held firms for two reasons: First, the preponderance of previous

research on CEO turnover, including performance and board-level influences on firm decision, focuses on publicly held firms (Finkelstein *et al.*, 2009). Second, our design enables us to control for unobserved regulatory factors and examine how structural attributes of boards shape the influence of the board on the CEO, especially as it attends to the exit of male and female CEOs. Publicly traded firms are more closely scrutinized than privately held firms (Ingram, Yue, & Rao, 2010). We ran the model with the population of Swedish public firms and found that the results for board composition were nearly identical; however, there were firm performance variations.

Dependent variable: CEO turnover

CEO turnover is coded as one in the year a CEO leaves, and zero otherwise.

Independent variables: firm performance

Following calls to investigate multiple operationalizations of firm performance (Finkelstein *et al.*, 2009), we include two measures relevant for privately held firms (George, 2005): *negative performance trend* and *negative performance result*. As performance trends influence CEO exit (Daily & Dalton, 1995), we measure *negative performance trend* as a 3-year moving average of EBITA (earnings before interest, taxes and amortization). When we discussed the phenomenon of declining firm performance with private firm CEOs, most indicated that a key performance metric is "the bottom line," and CEOs with negative or "red results" will be questioned. *Negative performance* is measured as net result in EBITA in the preceding year. Regression models with net results entered as either a linear or spline function were difficult to interpret. To ease interpretation and enable comparison across the models for male and female CEOs, we recode this as one if the net result in a specific year is negative and zero otherwise.

Independent variables: board diversity

The *board share of males* is the number of male directors divided by the total number of directors (Daily et al., 1999). *Board age diversity* is measured as the coefficient of variation, i.e., the standard deviation divided by the mean (Pelled, Eisenhardt & Xin, 1999).

Industry level controls

Industry growth, measured as industry sales growth (Eisenhardt and Schoonhoven, 1990), may affect CEO turnover if the firm is unable to grow at the same level as the industry (Becker & Gerhart, 1996; Fredrickson *et al.*, 1988). As the baseline likelihood of CEO turnover may be higher in growing industries (Finkelstein *et al.*, 2009), we include *industry productivity (ln)* measured as the value added per employee in the industry (at the SIC-3 digit level). We include the *share of male CEOs in the industry* (based on each firm's primary industry) which captures whether female CEOs are in the minority and could be a proxy for both role models and potential tokenism (Oakley, 2000). We include 6 *year dummies* with 2005 as the reference year.

Firm level controls

We control for other measures of performance: *turnover growth (ln)* which is widely used in the literature (Becker & Gerhart, 1996; Feeser & Willard, 1990) and measured in natural log format: turnover (log) at t – turnover (log) at t-1; and *value-added per employee (ln),* a standard performance metric independent of industry and size of firm (Javorcik, 2004).

As larger firms have greater CEO turnover (Finkelstein *et al.*, 2009), we control for three measures of firm size: *net turnover (ln)*, *number of establishments*, and *number of employees* as two dummy variables to distinguish between medium and large-sized private firms: *150-249 employees* and *>249 employees*. Together, these measures indicate the firm's complexity.

Manufacturing firms are generally male-dominated; hence we use a binary variable coded one for manufacturing and zero otherwise. *Sick leave in firm* is measured as the percentage of employees on sick leave for more than fourteen days. Firm level sick leave correlates with organizational climate as the number of sick days is higher among organizations with a tense work atmosphere (Piirainen, Räsänen, & Kivimäki, 2003).

Board level controls

We control for board-related characteristics that could impact CEO turnover. As larger boards are associated with increased CEO turnover (Fredrickson *et al.*, 1988), we include *board size* as the number of directors. *Board age* is an important control when examining board age diversity and is measured as the combined age of all directors, divided by board size. We include *board education* as the combined education level of all directors, divided by board size.

As sources of informational diversity result in task-related conflicts (Jehn *et al.*, 1999) which could lead to turnovers, we control for the *board education diversity* in length of education (seven categories: pre-school/kindergarten, <9 compulsory years, 9 compulsory years/secondary education, high school/upper secondary education, post-secondary education less than 2 years, higher education of 2 or more years, and post-graduate). We calculate education diversity as a Blau's index of $1-\sum pi^2$ where p is the proportion of directors in a category and i is the number of categories in each board. Higher Blau's indices indicate more diverse boards. A value of zero implies that there is no diversity while a value of close to one implies that the board is very diverse.

As recent research indicates that top management teams with greater national diversity perform better (Nielsen and Nielsen, 2013), we capture the board's international diversity with

board share of foreigners (percent of directors who do not reside in Sweden) and *board nationality* (where Swedish citizens are coded as one and all others are zero). As the share of *board share of external (or independent) directors* may be related to board processes and outcomes (Finkelstein *et al.*, 2009; Milliken & Martins, 1996) and lead to longer CEO tenure (Salancik & Pfeffer, 1980), we control for the share of directors who are not regularly employed in the firm.

CEO level controls

We include *CEO age* as age increases likelihood of exit (Gayle *et al.*, 2012). Sweden does not regulate CEO retirement age. As human capital leads to executive appointments (Finkelstein *et al.*, 2009), we create a binary variable equal to one if the CEO has at least a three year *university degree* and zero otherwise. As CEO salary varies by gender (Mohan & Ruggiero, 2003) and CEO compensation may be linked to CEO turnover, we include *CEO salary (ln)* (in Swedish krona) to capture the CEO's market value and how much he or she is valued by the board.

We control for *CEO tenure* in years. Given prior evidence of an inverse U-shape relationship between CEO tenure and exit (Conyon & Nicolitsas, 1998), we include *CEO tenure squared* to check for non-linear effects. The tenure variable is left censored at ten years, after which we do not have information on the firms' CEOs. We account for this in two ways. First, we estimate robustness models with an additional dummy variable for CEO tenure as ten years or more. Second, to complement the control variable for CEO tenure, we include an ordinal scale variable of *CEO firm tenure* counting all years that the CEO has been employed at any position in the firm for which we have non-censored information. Neither variable was significant in the fully saturated models.

As CEOs and directors who sit on other boards access an additional "knowledge channel" of confidential ideas and thoughts (Mizruchi & Stearns, 1988) which may provide social standing, we include a binary variable for *CEO director of other board* coded one if the CEO is a director of another firm's board and zero otherwise. As CEO duality impacts executive turnover (Shen & Cannella, 2002; Zhang & Rajagopalan, 2004), likely due to wielding higher levels of power and authority in the board (Finkelstein & D'Aveni, 1994), we control for *CEO duality* with a binary variable coded one when the CEO is also the board chair, and zero otherwise. As CEOs with greater power are less likely to be dismissed (Boeker, 1992), we control for *CEO excluded from the board* with a binary variable coded one for firms where the CEO is not on the board and zero otherwise. Death and illness account for less than 5 percent of all turnover among CEOs (Vancil, 1987), and fatigue and stress may explain some executive decisions (Hambrick, Finkelstein, & Mooney, 2005), hence we include *CEO sick leave* as a binary variable coded one if the CEO has been sick for more than 14 consecutive days and zero otherwise.

Finally, we account for the family environment, controlling for the *CEO number of children* as CEOs with many children may experience more stress related to work-life balance. As being married is associated with greater quality of life satisfaction across a range of psychological and stress measures (Fugl-Meyer, Melin, & Fugl-Meyer, 2002), we include a binary variable, *CEO married*, where married is one and zero is otherwise. As having a partner who also has many work responsibilities can also impact work-life balance, we include a binary variable, *CEO partner manager* equal to one if the partner living with a focal CEO has an occupational code denoting 'managerial responsibility' and 0 if not. These classifications are based on the International Labour Organization (ILO)'s occupations. We include another binary

variable, *CEO partner share of household income*, to indicate the CEO's contribution to the family financial resources, and *household income (ln)* as an overall proxy of resources.

Analytical strategy

To investigate our hypotheses, we need a comparable sample of male and female CEOs with similar firms and boards. We use a matching technique where the propensity score is:

$$P(x) = Pr[E = 1 \mid X = x]$$

where x is a vector of observables that affects the likelihood that a firm will be run by a female. We identified these variables through interviews with board professionals and CEOs in Sweden, and prior empirical literature investigating CEOs and gender. In our data, the main predictors that a firm has a female CEO are manufacturing industry (strong negative effect) and large share of male directors (strong negative effect). As indicated in Table 1, there are no performance differences between firms run by male or female CEOs.

Insert Table 1 here

Table 1 summarizes the variables considered for the matching. We obtained the matched group by identifying each firm's nearest neighbor propensity score within the overall sample of 9,750 male and 959 female CEOs. We ran t-tests and chi-squares across all matching variables and a logit regression to explain the likelihood that a firm will be run by a female (Ei = 1) given the conditional variables used in the matching procedure. The bivariate tests exhibited no

statistical differences across the matched treatment and control group on the two important determinants of firms with a female CEO.

Table 2 reports the results of the logit test of match validity and the base rate difference in turnover rates between male and female CEOs in otherwise similar firms (Hypothesis 1). The model's overall validity and explanatory power is relatively high (Pseudo-R2=0.247, AIC=4916.6; 91.55% correctly classified cases; many statistically significant coefficients in matching variables). There are no systematic differences between male and female CEOs in our matched sample, even when considering all matching covariates in the logit model. These two facts suggest that our matching procedure has produced a comparable sample of firms run by male and female CEOs.

Table 2 shows that the proportion of female CEOs that exit during our observation period is about equal across unmatched (26.1%) and matched (26.0%) samples. The proportion of male CEO exits is higher in the unmatched (20.3%) compared to the matched (17.7%) sample; however, this does not entail any source of bias (Rosenbaum & Rubin, 1984).

Insert Table 2 here

Hypotheses tests

CEO gender is the basis of our theory. One analytical approach would involve interactions of CEO gender and the independent variables. However, the different sample sizes of male and female CEOs and the potential that several control variables have differential effects on male or

female CEO turnover might bias these results. Instead, we separate all analyses for men and women, a standard in comparative gender research (Gayle *et al.*, 2012).

The dichotomous dependent variable, CEO turnover, requires some type of discrete choice or survival model. We use panel data logit models, commonly employed for non-normally distributed dichotomous outcomes (Long & Freese, 2006). A Hausman specification test in the matched sample indicates that we cannot reject the null hypotheses of standard errors being unbiased and consistent in the random effects models of CEO turnover (female CEOs: χ^2=31. 74, $p < 0.285$, male CEOs: χ^2=8.04, $p < 0.966$). Thus random effects model were deemed preferable.

Our matched sample of male and female CEOs in private firms with 150 or more employees at any time between 2005 and 2010 is right-censored in that a CEO may be active in one or several firms during the period of observation (a rare event in our data), and a firm may have several different CEOs during the same period (more common since over 20 percent of all CEOs in the data experience an exit). It is thus possible that unobservable firm-specific effects (e.g., a harsh working climate within the board or non-performance related problems in the firm) might affect the underlying likelihood of CEO turnover, potentially biasing results if every individual-year observation is treated equally. To account for this potential bias, we tested a variety of panel models based on random, fixed, and no firm effects (pooled model). The fixed effects and pooled models are similar to the random effects model, but with different effects sizes and significance levels, especially given that the fixed effects model excluded over 70 percent of usable observations where no exit occurs during the time period studied. We clustered all standard errors based on the firm level to account for potential autocorrelation in the standard errors.

RESULTS

To date, few CEO turnover studies investigate privately held firms (Conyon & Nicolitsas, 1998; Hill *et al.*, 2014). As our data comprises the full population of Swedish privately held firms, we can examine the overall distribution of male and female CEOs across firms and years in the full (non-matched) sample. As shown in Table 3, females constitute approximately 9 percent of all CEOs in the total population of large- and medium-sized private firms, and a large share of these women (77%) work in non-manufacturing industries.

Overall, 20.8 percent of CEOs in the non-matched sample experience an exit during the observation period. The average tenure of a CEO is 2.59 (3.42) years in the non-matched (matched) sample for males, and 2.35 (2.86) years in the non-matched (matched) sample for females. This tenure is considerably shorter than U.S. public firms which average slightly less than six years (Kaplan & Minton, 2011). According to sample characteristics available from the authors, female and male CEOs' firms are rather similar on easily observable characteristics such as firm size and performance, board size, and the directors' mean age and education level.

Insert Tables 3, 4, and 5 here

Our models are entered hierarchically. Model 1 contains industry, firm, and board controls, model 2 introduces the firm performance variables, and model 3 introduces the board diversity measures. All hypotheses are tested with the fully saturated Model 3.

Insert Tables 6 and 7 here

Model 1 depicts the control variables predicting exit of female (Table 6) and male (Table 7) CEOs. Both tables show exponentiated coefficients (i.e., odds ratios in the logit model). An odds ratio of 0.8 indicates that for each one-unit change in the predictor variable, the odds of CEO turnover decreases by 20 percent. Conversely, an odds ratio of 1.2 indicates that for each one-unit change in the predictor variable, the odds of CEO turnover increases by 20 percent.[1]

Examining the control variables in Tables 6 and 7, we find that female CEOs are *less* likely to exit in manufacturing industries (0.522, $p > 0.05$), a pattern which is not apparent for male CEOs. Male CEOs are more likely to exit larger firms with 250 or more employees (2.345, $p < 0.01$), a pattern which is not apparent for female CEOs. Interestingly, female CEOs are more likely to exit if there is a higher number of foreigners on the board (6.277, $p < 0.05$) or external directors (4.447, $p < 0.01$), a prediction which does not hold for male CEOs. Male CEOs are less likely to exit boards that are generally older, albeit at a weak significance level (0.964, $p < .10$). Consistent with prior research, CEO age is associated with both female and male CEO exit (female = 1.035, male = 1.028, both $p < 0.05$). CEO salary (ln) is weakly negatively associated with the likelihood of exit for female CEOs (0.837, $p < 0.10$) but is positively associated with male CEO exit (1.142, $p < 0.10$). Interestingly, the tenure variables are not significant, indicating that prior research may have focused solely on the relationship between CEO tenure and CEO turnover without duly controlling for firm-level performance and board-level characteristics.

[1] The odds ratio is the odds for something happening divided by the odds for it not happening (Long and Freese, 2006). Depending on how common the outcome is, the odds will be close to the *relative probability*. However, if interpreted as relative probabilities, odds ratios are often exaggerated. We therefore conservatively report odds instead of relative probabilities.

Further, our control variables indicate no significant relationship between the CEO being a member of another board and exit for female CEOs, however there is a weakly significant and negative relationship for male CEO exit (0.724, $p < 0.10$). Regarding CEO sick leave exceeding 14 consecutive days, we again find interesting results by gender. There is no impact of sick leave on the likelihood of exit of female CEOs; however there is a strong positive association with the likelihood of male CEO turnover (3.123, $p < 0.05$). We also find that being married is negatively associated with female CEO exit (1.633, $p < 0.10$) but not male CEO exit.

Our first Hypothesis 1 is tested in Table 2. The first row shows the difference in the exit rates of female and male CEOs respectively; the second row shows the differences in exit rates in the matched sample. Female CEOs are, on average, 8.2 percent more likely than their male counterparts to exit in any given year, after controlling for differences in the types of firms managed. This confirms Hypothesis 1.

Hypotheses 2a and 2b suggest that female CEOs will be more likely than their male counterparts to exit following immediate negative performance or a negative performance trend. The results in Model 3 in Tables 6 and 7 indicate that negative performance in the preceding year is positively associated with both male (1.783, $p < 0.05$) and female (1.729, $p < 0.05$) CEOs, rejecting Hypothesis 2a. If interpreted as relative risks, the odds ratios indicate that if performance is lower than in the preceding year, male (female) CEOs are 78 percent (73%) more likely to exit.

With respect to Hypothesis 2b concerning the three year trend of performance, we find a positive and significant relationship to the odds of female CEOs exit (1.181, $p < 0.05$) but not male CEO turnover. This suggests that women's CEO positions are more precarious than men after a three year firm performance decline, and supports Hypothesis 2b.

Our third hypothesis argues that a larger share of male directors increases the likelihood of female CEO turnover, but has no effect on male CEO turnover. As shown in Model 3 of Table 6, the share of male directors is strongly positively associated with female CEO exit (4.080, $p < 0.05$), but not males, providing support for Hypothesis 3.

Our fourth hypothesis suggests that larger age diversity on the board is more likely to influence the exit of female CEOs. As shown in Model 3 of Table 6, board age diversity is negatively associated with female CEO exit (0.048, $p < 0.05$), but not male CEO exit. Taken together, our findings suggest that female CEOs' positions are more precarious with male-dominated boards and less precarious for age-diverse boards.

Robustness tests

The propensity score matching technique generates a suitable comparison group of male and female CEOs, but also creates some limitations. One limitation is that our design makes it difficult to deal with non-observed heterogeneity. While robustness models (available upon request) based on pooled effects (no panel) and fixed effects panels show similar results in coefficient direction, the effects sizes and significance levels are quite varied because the fixed effects model excludes over 70 percent of usable observations where no exit occurs during the time period studied. We therefore also estimated robustness models using clog-logistic survival models, and the results are consistent. These models supported our main conclusions in signs and significance levels among the independent variables. As the advantages of survival analysis are severely limited by our large-N, small-T data set, we rely on panel logit analyses for our hypotheses testing.

Finally, we guarded against the potential for multicollinearity by introducing all hypothesized effects in a step-wise manner and investigating variance inflation factors (VIFs) and condition indices for all variables. The fully saturated models including both tenure and tenure squared introduced multicollinearity between these two variables, a finding which is mathematically expected. Unreported models excluding the tenure squared variable showed VIF values below 2.8 for all variables, without any significant changes in results.

We also investigated the potential for outliers that affect our results by winsoring all independent variables at either the top or the bottom 5 percent of observed variables. This led to no significant changes in results except for the performance trend variable which was significant at only the 10 percent level in both the male CEO and female CEO models. This indicates that the extreme values for low performance constitute the primary triggers for CEO exit.

DISCUSSION

Our study sheds considerable light on the characteristics associated with the men and women who are promoted to CEO, as well as the factors associated with their departure. We followed Leavitt, Mitchell, and Peterson's (2010) suggestion to develop and test multiple theories for a phenomenon, and find support for both the tokenism and homophily theories in explaining the differential patterns predicting the exit of male and female CEOs in a matched sample of privately held firms. We find that while all CEOs are more likely to exit from firms that experience negative results, female CEOs are more like than male CEOs to exit if the firm is experiencing a declining performance trend. This result gives some support to the notion of a glass cliff where women are promoted to unfavorable and unsustainable leadership positions (Ryan & Haslam, 2007). Prior work, mostly on public firms, hitherto provided mixed results.

Furthermore, when a firm has "red results" for an extended period, the firm's CEO is likely to be closely examined. Tokenism theory suggests that the female CEO will be even more thoroughly scrutinized, face harsher evaluations, and be more likely to exit. Our findings lend support to these expectations.

Building on the rich stream of research investigating the relationship between board composition and various firm outcomes (Johnson *et al.*, 2013), our study further indicates that demographic composition in terms of gender and age increases our understanding of the process of CEO turnover. Specifically, the dominance of male directors in a firm's board increases the likelihood of the exit of female CEOs. This means that, in addition to being pressured to exit when their firm is experiencing low performance, female CEOs are also more likely to exit when the board is composed predominantly by men. Taken together, these findings provide some indications of why there is a relatively low proportion of female CEOs in our country of study – Sweden. Our findings support the notion that the "glass cliff" is a socially constructed phenomenon that may be difficult to address through legal remedies.

Considering the overall small share (9%) of female CEOs in privately held firms, our data suggest that there is limited progress- from 7 percent in 2005 to 11 percent in 2010. These findings suggest that recent studies speculating that the pipeline of women executives may eventually lead to greater shares of women CEOs (e.g., Helfat *et al.*, 2006) have not come to fruition.

Our findings also show that more heterogeneous corporate boards may provide a more 'safe haven' for female CEOs. Specifically, the finding that larger age diversity on the board lowers the likelihood of exit of female CEOs may imply that, in line with the literature on factional groups and faultlines (Hambrick, 2005), the risk of being classified as an outsider is

lower in groups that are more diverse in terms of age, something that would be more important for women in the CEO position. This provides a novel contribution to research on top management teams and board homophily where previous research has suggested age diversity generally increases the risk of top manager's turnover. We find differential effects of board age diversity for the risk of turnover among male and female CEOs, highlighting the importance of distinguishing between men and women when investigating the effect of non-gender demographics on managerial turnover.

Another interesting finding attends to the control variable for sick leave. While male CEOs are likely to leave their position when sick for a prolonged period of time, female CEOs remain at the helm despite sickness. Prior work suggested that death or illness predicts less than 5 percent of CEO departures (Vancil, 1987); our evidence suggests that sick leave predicts CEO turnover, but that male and female CEOs behave differently in times of sickness.

CEOs with positive performance records over time are more likely to retain their positions. Male CEOs with greater numbers of board positions are also more likely to stay. Taken together with research on public firms revealing that directors who are also CEOs are more likely to leave the directorship (Boivie, Graffin & Pollock, 2012), this may suggest that individuals prioritize their role as a CEO over their role as a director.

The large and unbiased matched sample and the many control variables included notwithstanding, our study also comes with limitations, several of which offer intriguing avenues for extension. First, the data does not allow us to formally consider whether turnover is voluntary or forced dismissal. Prior studies indicate that voluntary departures are more common among non-CEOs than CEOs (Fee & Hadlock, 2003) and what is reported as 'voluntary' departures are in fact not voluntary (Finkelstein *et al.*, 2009). Researchers could interview former CEOs about

their reasons for exit to shed further light on the validity of tokenism and homophily theories. Second, although we used two central measures of firm performance for privately held firms (George, 2005), future research could examine other means of capturing firm performance such as survival and growth.

Further research could meaningfully extend gender perspectives on CEO turnover to CEO succession (Zajac & Westphal, 1996) including heirs apparent (Cannella & Shen, 2001). This line of research could determine which firms are most likely to appoint a CEO with the same gender. Researchers could also investigate the subsequent careers of exiting CEOs and potential gender differences in terms of the opportunities available in the corporate sector vis-à-vis the public sector. Finally, future work could examine the departure of CEOs who represent other minorities, e.g., by racial, ethnic, or national citizenship diversity since extant research indicates that there are unique issues associated with these demographics (Bell *et al.*, 2011).

CONCLUSION

In conclusion, our study examined the differences in female and male CEO turnover, considering firm performance and board composition. Our findings suggest that female CEOs have higher turnover vis-à-vis their male counterparts. Moreover, female CEOs are more likely than their male counterparts to leave when their firm experiences a negative performance and when their firm's boards are comprised mostly of males. By contrast, female CEOs are less likely to leave firms with age diverse boards. Taken together, our findings indicate that female CEOs' leadership positions are more precarious when performance trends downward over a sustained period, and when the board is comprised traditionally- of mostly male, similarly aged directors.

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Table 1: Mean values for predictor variables (before and after matching)

Variable	Sample	Female CEOs (mean)	Male CEOs (mean)	Percent Bias	Percent Reduction in bias	t-test
Negative performance	Unmatched	0.191	0.193	-0.4		-0.13
	Matched	0.192	0.174	4.5	-916.4	1.00
Negative performance trend (3 yr)	Unmatched	0.416	0.418	-0.5		-0.14
	Matched	0.418	0.446	-5.7	-1134.1	-1.24
150-249 employees	Unmatched	0.315	0.271	9.6		2.91**
	Matched	0.313	0.307	1.4	85.7	0.30
250+ employees	Unmatched	0.391	0.388	0.7		0.21
	Matched	0.392	0.374	3.6	-423.5	0.80
Manufacturing	Unmatched	0.229	0.480	-54.3		-15.06***
	Matched	0.230	0.234	-0.7	98.8	-0.16
Board size	Unmatched	70.334	70.585	-5.5		-1.70+
	Matched	70.358	70.484	-2.8	49.7	-0.56
Board education	Unmatched	0.567	0.596	-16.3		-4.79***
	Matched	0.567	0.556	6.0	63.0	1.19
Board age	Unmatched	0.170	0.170	-0.5		-0.17
	Matched	0.170	0.178	-9.8	-1703.2	-1.83+
Board share foreigners	Unmatched	0.080	0.102	-14.1		-4.01***
	Matched	0.081	0.082	-0.9	93.3	-0.21
Board nationality	Unmatched	0.280	0.282	-0.7		-0.21
	Matched	0.281	0.273	3.7	-407.8	0.81
Board share of male directors	Unmatched	0.586	0.852	-142.7		-46.79***
	Matched	0.589	0.587	1.1	99.2	0.23

Notes: *** $p < 0.001$, * $p < 0.05$, ** $p < 0.01$, $^{+}$ $p < 0.05$,

Table 2: Mean values for dependent variable (before and after matching)

Variable	Women	Men	Difference	St.err.	T-stat
CEO Exit (unmatched sample)	0.261	0.203	0.059	0.014	4.30
CEO Exit (matched sample – ATT value)	0.260	0.177	0.082	0.023	3.63

Notes: Matching results from on a nearest neighbor propensity score model with 'exact matching'; based on 9,750 male CEOs and 959 female CEOs in the unmatched sample. Fit statistics from the model summarized as Pseudo R2-value: 0.247, Log-likelihood value: -2441.3, AIC value: 4916.6, 91.55 percent cases correctly classified. 'ATT value' denotes average treatment-effect-on-the-treated group.

Table 3: Male and female CEOs by year (unmatched sample)

Year	Men		Women		Total
2005	1524	93%	118	7%	1642
2006	1545	92%	132	8%	1677
2007	1597	91%	161	9%	1758
2008	1739	91%	165	9%	1904
2009	1724	90%	190	10%	1914
2010	1621	89%	198	11%	1819
Total	9750	91%	964	9%	10714

Men

Year	Manufacturing		Non-manufacturing		Total
2005	772	51%	752	49%	1524
2006	774	50%	771	50%	1545
2007	788	49%	809	51%	1597
2008	831	48%	908	52%	1739
2009	803	47%	921	53%	1724
2010	712	44%	909	56%	1621
Total	4680	48%	5070	52%	9750

Women

Year	Manufacturing		Non-manufacturing		Total
2005	24	20%	94	80%	118
2006	29	22%	103	78%	132
2007	37	23%	124	77%	161
2008	41	25%	124	75%	165
2009	50	26%	140	74%	190
2010	40	20%	158	80%	198
Total	221	23%	743	77%	964

Table 4: Variable descriptives

	Mean	St. Dev.	Min	Max
CEO exit	0.23	0.43	0	1
Negative performance trend (3 yr)	0.42	2.10	-10.15	44.19
Negative performance	0.19	0.39	0	1
Board share of male directors	0.59	0.19	0	1
Board age diversity	0.17	0.08	0	0.76
Industry controls				
Industry growth	36.49	624.16	-99.62	19120
Industry productivity (ln)	13.00	2.03	0	17.93
Industry share of male CEOs	0.79	0.15	0.22	1
Firm controls				
Turnover growth (ln)	0.10	0.38	-4.22	4.98
Value added per employee (ln)	6.38	0.59	4.25	12.27
Net turnover (ln)	12.65	1.27	8.52	16.97
Number of employees (100-149)	0.30	0.46	0	1
Number of employees (150-249)	0.31	0.46	0	1
Number of employees (250+)	0.39	0.49	0	1
Number of establishments	1.47	1.03	1	12
Manufacturing	0.23	0.42	0	1
Sick leave in firm	0.12	0.05	0	0.47
Board controls				
Board size	7.40	4.78	2	39
Board age	49.76	5.49	30	69.33
Board education	4.86	0.84	2	6.5
Board education diversity	0.57	0.19	0	0.84
Board share foreigners	0.07	0.14	0	0.78
Board nationality	0.27	0.23	0	0.77
Board share external directors	0.66	0.29	0	1
Individual (CEO) controls				
CEO age	48.96	7.99	23	75
CEO university degree	0.55	0.50	0	1
CEO salary (ln)	13.66	1.81	0	16.43
CEO tenure	3.13	1.81	1	10
CEO tenure square	14.22	18.44	1	100
CEO firm tenure	5.93	5.65	0	24
CEO director of other board	0.64	0.48	0	1
CEO duality	0.06	0.24	0	1
CEO excluded from the board	0.33	0.47	0	1
CEO sick leave	0.02	0.14	0	1
CEO number of children	0.74	1.02	0	5
CEO is married	0.80	0.40	0	1
CEO partner is manager	0.17	0.37	0	1
CEO partner share of income	0.03	0.18	0	1
CEO household income (ln)	13.71	2.88	-16.02	16.42

Note: All descriptives are based on the matched sample: N=1,918

Table 5: Correlation matrix (matched sample)

	1. CEO exit	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2. Industry growth	-0.014	1																		
3. Industry productivity (ln)	-0.006	0.057*	1																	
4. Male CEOs in industry	-0.060**	0.012	0.536***	1																
5. Turnover growth (ln)	0.001	-0.003	-0.054*	-0.082***	1															
6. Value-added per employee (ln)	-0.029	-0.033	0.147***	0.303***	-0.047*	1														
7. Net turnover (ln)	0.009	-0.046*	0.250***	0.277***	-0.079***	0.400***	1													
8. Number of establishments	0.021	-0.015	-0.02	-0.094***	0.026	-0.041	0.258***	1												
9. # of employees (100-149)	-0.057*	0.016	0.017	0.070**	0.02	-0.013	-0.417***	-0.156***	1											
10. # of employees (150-249)	-0.033	0.014	-0.028	0.023	-0.001	-0.02	-0.179***	-0.109***	-0.438***	1										
11. # of employees (250+)	0.085***	-0.029	0.011	-0.087***	-0.018	0.031	0.560***	0.249***	-0.519***	-0.541***	1									
12. Manufacturing	-0.058*	-0.027	0.257***	0.431***	-0.04	0.158***	0.161***	-0.069**	0.007	0.039	-0.044	1								
13. Sick leave in firm	0.023	0.028	-0.155***	-0.248***	0.013	-0.223***	-0.145***	0.081***	-0.045*	-0.013	0.054*	-0.079***	1							
14. Board size	-0.066**	-0.014	0.039	0.159***	-0.092***	0.291***	0.377***	0.127***	-0.120***	-0.066**	0.174***	0.113***	-0.023	1						
15. Board age	-0.051*	0.019	-0.065**	-0.036	-0.023	0.095***	0.058*	0.076***	-0.01	0.028	-0.018	0.019	0.080***	0.240***	1					
16. Board education	0.015	-0.005	-0.114***	-0.131***	-0.038	0.090***	0.083***	0.058*	-0.116***	-0.038	0.145***	-0.073**	-0.112***	0	-0.066**	1				
17. Board education diversity	-0.052*	0.005	0.095***	0.165***	-0.041	0.117***	0.192***	0.047*	-0.061**	0.016	0.042	0.180***	0.039	0.390***	0.180***	-0.356***	1			
18. Board share foreign directors	0.054*	-0.015	0.151***	0.112***	-0.022	0.013	0.128***	-0.021	-0.044	-0.001	0.041	0.064**	-0.102***	-0.069**	-0.239***	0.049*	0.155***	1		
19. Board nationality	0.023	-0.041	0.080***	0.017	-0.031	0.04	0.144***	0.005	-0.027	-0.086***	0.106***	-0.018	-0.022	0.096***	-0.132***	-0.039	0.219***	0.568***	1	
20. Board share external directors	0.107***	0.039	-0.019	0.03	-0.014	0.069**	0.084***	0.037	-0.072**	-0.01	0.077***	-0.041	-0.021	0.179***	0.032	0.167***	0.03	0.070**	-0.009	1
21. CEO gender	0.063**	-0.032	-0.056*	-0.137***	0.009	0.027	-0.047*	-0.023	-0.001	-0.002	0.003	0.001	0.021	-0.01	0.056*	0.128***	-0.007	0.041	0.051*	0.042
22. CEO age	-0.002	0.024	0	0.015	-0.039	0.065**	0.058*	0.072**	0.034	-0.03	-0.003	-0.006	0.058*	0.229***	0.433***	-0.005	0.121***	-0.143***	-0.036	0.013
23. CEO university degree	-0.014	0.001	0.024	0.051*	-0.055*	0.145***	0.144***	0.090***	-0.100***	-0.009	0.102***	0.081***	-0.054*	0.238***	0.092***	0.379***	-0.096***	0.100***	0.066**	0.074**
24. CEO salary (ln)	-0.026	0.005	0.055*	0.038	-0.035	0.064**	0.145***	0.099***	-0.088***	-0.017	0.098***	0.090***	-0.003	0.114***	0.018	0.236***	0	-0.009	-0.049*	-0.022
25. CEO tenure	-0.041	-0.012	0.035	0.002	-0.049*	0.041	0.014	0.003	-0.001	0.058*	-0.054*	0.014	-0.051*	0.093***	0.203***	-0.052*	0.081***	-0.041	0.001	-0.129***
26. CEO tenure^2	-0.026	-0.014	0.045*	0.005	-0.052*	0.054*	0.041	0.014	-0.025	0.047*	-0.021	0.014	-0.056*	0.107***	0.184***	-0.053*	0.094***	-0.016	0.016	-0.105***
27. CEO firm tenure	-0.088***	-0.036	0.021	0.069**	-0.083***	0.095***	0.042	-0.047*	0.043	0.033	-0.071**	0.025	-0.073**	0.075***	0.192***	-0.156***	0.072**	-0.046*	-0.037	-0.312***
28. CEO director of other board	-0.024	0.029	0.035	0.019	-0.052*	0.041	0.155***	0.109***	-0.073**	-0.056*	0.121***	0.04	-0.03	0.053*	0.011	0.04	0.016	-0.024	-0.024	0.144***
29. CEO duality	0.018	-0.01	0.060**	0.036	0.004	0.018	0.025	-0.002	0.023	0.022	-0.042	0.015	-0.041	-0.162***	-0.047*	-0.013	-0.068**	-0.001	-0.034	-0.029
30. CEO excluded from the board	-0.016	-0.024	-0.037	-0.029	-0.015	0.123***	0.073**	0.075***	-0.042	0.01	0.03	-0.087***	0.017	0.396***	0.147***	0.063**	0.188***	-0.041	-0.013	0.182***
31. CEO sick leave	0.039	-0.002	-0.001	-0.049*	0.044	-0.034	-0.072**	-0.023	0.017	0.019	-0.035	0.013	0.072**	-0.038	-0.017	-0.021	-0.008	-0.01	-0.016	-0.059**
32. CEO number of children	-0.048*	-0.026	0.02	0.074**	-0.025	0.079***	0.077***	-0.061**	-0.065**	0.024	0.039	0.070**	-0.067**	-0.026	-0.135***	0.087***	0.017	0.155***	0.075**	-0.177***
33. CEO married	-0.046*	0.018	0.076***	0.137***	-0.047*	0.126***	0.116***	-0.063**	-0.009	0.002	0.007	0.103***	-0.080***	0.038	0.01	0.057*	0.016	0.054*	0.051*	-0.018
34. CEO partner is manager	0.014	-0.015	0.017	0.012	-0.004	0.02	0.008	-0.025	0.005	-0.001	-0.004	0.073**	0.046*	-0.029	0.025	0.055*	-0.019	0.013	-0.039	0.001
35. CEO partner shareof hh income	0.041	-0.004	-0.02	-0.067**	0.026	-0.073**	-0.096***	-0.036	0.045*	0.005	-0.048*	-0.021	0.024	-0.088***	0.04	0.008	-0.04	0.001	-0.054*	0
36. CEO household income (ln)	0.005	0.006	0.012	0.014	-0.009	0.04	0.076***	0.070**	-0.039	-0.048*	0.082***	0.079***	0.014	0.089***	-0.023	0.176***	-0.025	0.006	-0.005	-0.04
37. Negative performance trend (3 yrs)	0.072**	-0.007	-0.161***	0.052*	-0.022	0.358***	0.315***	0.016	-0.094***	-0.062**	0.147***	0.036	-0.079***	0.191***	-0.007	0.033	0.034	-0.045*	-0.032	0.009
38. Negative performance (last year)	0.083***	-0.015	0.025	0.03	-0.086***	-0.241***	-0.061**	0.014	-0.018	-0.003	0.02	-0.033	0	0.034	-0.052*	0.033	0.013	0.115***	0.083***	0.050*
39. Board age diversity of directors	-0.082***	-0.02	-0.01	0.085***	-0.026	0.056*	-0.011	-0.048*	0.028	0.054*	-0.077***	0.099***	0.002	0.135***	-0.016	-0.120***	0.188***	-0.054*	-0.053*	-0.001
40. Board share of male directors	0.008	0.036	0.160***	0.283***	-0.018	0.126***	0.151***	-0.037	-0.045*	0.012	0.03	0.165***	-0.150***	0.146***	0.123***	-0.052*	0.134***	-0.109***	-0.129***	0.075**

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
22. CEO age	-0.164***	1																	
23. CEO university degree	0.101***	0.025	1																
24. CEO salary (ln)	-0.015	0.011	0.153***	1															
25. CEO tenure	-0.123***	0.315***	-0.075**	0.079***	1														
26. CEO tenure^2	-0.114***	0.297***	-0.075***	0.074**	0.957***	1													
27. CEO firm tenure	-0.116***	0.227***	-0.135***	0.056*	0.495***	0.473***	1												
28. CEO director of other board	-0.063**	0.086***	0.027	0.173***	0.086***	0.067**	-0.080***	1											
29. CEO duality	-0.03	0.016	-0.009	-0.023	-0.043	-0.045*	-0.096***	0.122***	1										
30. CEO excluded from the board	0.013	0.018	0.116***	0.106***	-0.018	0.003	-0.042	-0.092***	-0.184***	1									
31. CEO sick leave	0.019	-0.017	-0.025	-0.047*	0.017	0.025	0.033	-0.051*	-0.037	0.021	1								
32. CEO number of children	0.009	-0.395***	0.126***	0.102***	-0.109***	-0.111***	0.019	-0.135***	-0.086***	0.01	-0.001	1							
33. CEO married	-0.128***	0.001	0.107***	0.045*	0.021	0.029	0.057*	0.048*	-0.032	-0.014	-0.035	0.219***	1						
34. CEO partner is manager	0.140***	-0.006	0.067**	0.031	-0.03	-0.04	-0.025	0.057*	0.006	0.004	-0.024	0.108***	0.225***	1					
35. CEO partner shareof hh income	0.074**	-0.025	-0.015	-0.118***	-0.042	-0.036	-0.02	-0.073**	-0.023	-0.04	0.061**	0.032	0.090***	0.162***	1				
36. CEO household income (ln)	0.012	-0.042	0.146***	0.621***	0.033	0.034	0.02	0.075**	-0.025	0.086***	-0.048*	0.085***	0.084***	0.064**	0.021	1			
37. Negative performance trend (3 yrs)	-0.007	0.011	0.027	0.058*	-0.008	-0.001	0.037	0.054*	0.003	0.066**	-0.02	0.056*	0.045*	-0.003	-0.023	0.04	1		
38. Negative performance (last year)	0.007	-0.047*	0.079***	-0.023	-0.064**	-0.042	-0.114***	-0.002	0.005	-0.017	0	0.022	-0.018	-0.012	-0.019	0.007	-0.140***	1	
39. Board age diversity of directors	0.011	0.001	-0.018	-0.035	0.009	0	0.103***	-0.01	-0.006	0.066**	0.071**	-0.011	-0.050*	-0.051*	0.018	-0.03	0.034	-0.039	1
40. Board share of male directors	-0.049*	-0.002	-0.065**	0.014	0.026	0.044	0.024	0.006	-0.007	0.002	-0.015	-0.007	0.090***	0.028	0.004	-0.012	0.034	-0.052*	0.036

Note: *** p<.001; ** p<.05; * p<.01

Table 6: Random effects logit models on exit of female CEOs (matched sample)

Industry controls	**Model 1**		**Model 2**		**Model 3**	
Industry growth	1.000	(-0.022)	1.000	(-0.037)	1.000	(0.098)
Industry productivity (ln)	0.997	(-0.048)	1.037	(0.571)	1.013	(0.198)
Male CEOs in industry	1.346	(0.317)	1.064	(0.065)	0.936	(-0.069)
Firm controls						
Turnover growth (ln)	0.917	(-0.363)	0.963	(-0.153)	0.948	(-0.207)
Value added empl (ln)	0.902	(-0.512)	0.879	(-0.580)	0.864	(-0.637)
Net turnover (ln)	1.032	(0.246)	0.969	(-0.234)	1.010	(0.072)
Number of establishments	0.979	(-0.206)	0.993	(-0.064)	0.982	(-0.166)
Employees 150-249	1.105	(0.382)	1.154	(0.535)	1.101	(0.354)
Employees >249	1.469	(1.187)	1.488	(1.200)	1.324	(0.833)
Manufacturing	0.509**	(-2.153)	0.515**	(-2.084)	0.522**	(-2.031)
Sick leave in firm	4.135	(0.663)	5.412	(0.773)	14.00	(1.181)
Board controls						
Board size	0.975	(-0.881)	0.960	(-1.343)	0.957	(-1.418)
Board age	0.997	(-0.155)	1.000	(-0.016)	0.992	(-0.387)
Board education	0.786	(-1.593)	0.805	(-1.412)	0.785	(-1.542)
Board education diversity	0.447	(-1.207)	0.471	(-1.109)	0.487	(-1.050)
Board share foreigners	7.186**	(2.258)	6.312**	(2.081)	6.277**	(2.049)
Board nationality	0.779	(-0.451)	0.799	(-0.398)	0.957	(-0.077)
Board share external	4.228***	(3.192)	4.371***	(3.214)	4.447***	(3.216)
CEO controls						
CEO age	1.035**	(2.014)	1.034*	(1.958)	1.035**	(1.964)
CEO university degree	0.730	(-1.229)	0.732	(-1.189)	0.787	(-0.904)
CEO salary (ln)	0.848*	(-1.721)	0.842*	(-1.765)	0.837*	(-1.799)
CEO tenure	0.888	(-0.731)	0.928	(-0.451)	0.969	(-0.188)
CEO tenure square	1.031*	(1.673)	1.027	(1.416)	1.021	(1.105)
CEO firm tenure	0.944**	(-2.077)	0.947*	(-1.942)	0.959	(-1.488)
CEO director of other board	1.006	(0.025)	0.997	(-0.014)	1.062	(0.267)
CEO duality	1.061	(0.134)	1.060	(0.129)	1.214	(0.426)
CEO excluded from board	0.851	(-0.684)	0.891	(-0.476)	0.968	(-0.134)
CEO sick leave	1.297	(0.407)	1.223	(0.313)	1.456	(0.580)
CEO number of children	1.039	(0.323)	1.019	(0.158)	1.033	(0.265)
CEO is married	0.682	(-1.525)	0.671	(-1.565)	0.633*	(-1.771)
CEO partner manager	1.332	(1.092)	1.385	(1.221)	1.299	(0.972)
CEO partner share of income	1.128	(0.260)	1.121	(0.242)	1.208	(0.395)
CEO household income (ln)	1.113	(1.591)	1.114	(1.576)	1.116	(1.576)
Tests of hypotheses						
Negative performance [H2a]			1.672**	(2.005)	1.729**	(2.108)
Neg. perf. trend (3 yr) [H2b]			1.197**	(1.331)	1.181**	(2.080)
Board share of males [H3]					4.080**	(2.507)
Board age diversity [H4]					0.048**	(-2.086)
Number of observations	959		959		959	
Log-likelihood value	-505.9		-500.6		-495.4	
AIC	1093.7		1087.2		1080.8	
BIC	1293.2		1296.5		1299.8	

*Note: Odds ratios with t statistics in parentheses; * p < 0.10, ** p < 0.05, *** p < 0.01; Year dummies included but not reported. All standard errors clustered on the firm level. Likelihood-Ratio test against previously tested model.*

Table 7: Random effects logit models on exit of male CEOs (matched sample)

Industry controls	**Model 1**		**Model 2**		**Model 3**	
Industry growth	1.000	(-0.371)	1.000	(-0.332)	1.000	(-0.344)
Industry productivity (ln)	1.181**	(2.373)	1.176**	(2.302)	1.174**	(2.281)
Male CEOs in industry	0.458	(-0.872)	0.368	(-1.104)	0.396	(-0.998)
Firm controls						
Turnover growth (ln)	0.863	(-0.628)	0.906	(-0.422)	0.912	(-0.394)
Value added empl (ln)	1.438*	(1.787)	1.644**	(2.127)	1.638**	(2.104)
Net turnover (ln)	0.795**	(-2.074)	0.785**	(-2.156)	0.786**	(-2.111)
Number of establishments	0.952	(-0.553)	0.961	(-0.445)	0.961	(-0.447)
Employees 150-249	1.001	(0.002)	0.984	(-0.066)	0.985	(-0.064)
Employees >249	2.354***	(3.175)	2.348***	(3.142)	2.345***	(3.132)
Manufacturing	1.015	(0.065)	1.071	(0.296)	1.072	(0.297)
Sick leave in firm	16.10	(1.487)	15.71	(1.461)	17.39	(1.492)
Board controls						
Board size	0.997	(-0.110)	0.991	(-0.391)	0.992	(-0.324)
Board age	0.967*	(-1.696)	0.967*	(-1.659)	0.964*	(-1.743)
Board education	1.082	(0.609)	1.045	(0.337)	1.045	(0.340)
Board education diversity	0.721	(-0.612)	0.716	(-0.622)	0.764	(-0.493)
Board share foreigners	2.167	(1.014)	2.031	(0.923)	1.885	(0.811)
Board nationality	0.689	(-0.782)	0.693	(-0.769)	0.688	(-0.783)
Board share external	1.338	(0.888)	1.382	(0.985)	1.413	(1.046)
CEO controls						
CEO age	1.027*	(1.912)	1.027*	(1.914)	1.028**	(1.978)
CEO university degree	1.035	(0.181)	1.033	(0.171)	1.034	(0.173)
CEO salary (ln)	1.133	(1.574)	1.147*	(1.734)	1.142*	(1.688)
CEO tenure	0.882	(-0.885)	0.905	(-0.701)	0.905	(-0.694)
CEO tenure square	1.011	(0.716)	1.010	(0.633)	1.009	(0.622)
CEO firm tenure	0.995	(-0.273)	0.998	(-0.132)	0.999	(-0.060)
CEO director of other board	0.732	(-1.621)	0.722*	(-1.687)	0.724*	(-1.668)
CEO duality	1.745*	(1.847)	1.716*	(1.777)	1.739*	(1.811)
CEO excluded from board	1.088	(0.382)	1.100	(0.430)	1.113	(0.475)
CEO sick leave	3.272**	(2.114)	3.106**	(2.028)	3.123**	(2.039)
CEO number of children	0.875	(-1.336)	0.871	(-1.374)	0.876	(-1.319)
CEO is married	0.834	(-0.769)	0.837	(-0.754)	0.823	(-0.822)
CEO partner manager	1.508*	(1.692)	1.443	(1.500)	1.412	(1.399)
CEO partner share of income	2.249	(1.269)	2.217	(1.243)	2.159	(1.201)
CEO household income (ln)	1.005	(0.128)	1.003	(0.078)	1.004	(0.098)
Tests of hypotheses						
Negative performance [H2a]			1.789**	(2.530)	1.783**	(2.508)
Neg. perf. trend (3 yr) [H2b]			1.034	(0.423)	1.035	(0.434)
Board age diversity [H3]					0.884	(-0.217)
Board share of males [H4]					0.460	(-0.705)
Number of observations	959		959		959	
Log-likelihood value	-453.9		-450.8		-450.5	
AIC	989.8		987.5		991.0	
BIC	1189.3		1196.8		1209.9	

*Note: Odds ratios with t statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; Year dummies included but not reported. All standard errors clustered on the firm level. Likelihood-Ratio test against previously tested model.*