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Women and Top Leadership Positions: Towards an Institutional Analysis

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Women remain under-represented in top leadership positions in work organizations, a reality that reflects a variety of barriers that create a glass ceiling effect. However, some women do attain top leadership positions, leading scholars to probe under what conditions women are promoted despite seemingly intractable and well-documented barriers. Previous scholarship tends to posit individual-level explanations, suggesting either that women who attain top leadership positions are exceptional or that potential women leaders lack key qualities, such as assertiveness. Much less scholarship has explored institutional-level mechanisms that may increase women's ascension to top positions. This analysis seeks to fill this gap by testing three institutional-level theories that may shape women's access to and tenure in top positions: the glass cliff, decision-maker diversity, and the saviour effect. To test these theories we rely on a dataset that includes all CEO transitions in Fortune 500 companies over a 20-year period. Contrary to the predictions of the glass cliff, we find that diversity among decision makers — not firm performance — significantly increases women's likelihood of being promoted to top leadership positions. We also find, contrary to the predictions of the saviour effect, that diversity among decision makers increases women leaders' tenure as CEOs regardless of firm performance. By identifying contextual factors that increase women's mobility, the paper makes an important contribution to the processes that shape and reproduce gender inequality in work organizations.

Keywords: gender, discrimination, diversity, leadership, glass cliffs

Introduction

Women remain under-represented in top leadership positions in American corporations (Acker, 2006), leading to broad consensus that a glass ceiling exists that poses invisible barriers to women's ascension to top positions (Cotter *et al.*, 2001). The glass ceiling metaphor has inspired scholars to identify mechanisms to explain this reality, including discrimination (Acker, 1990; Baron and Bielby, 1986; Jacobs, 1992; Maume, 1999; Reskin, 2002); implicit bias (Bielby, 2000; Reskin, 2005); tokenism (Kanter, 1977); lack of quality mentoring (Blake-Beard, 2001; Essien, 2003; Martin, 1994) and exclusion from social and informational networks (Ibarra, 1995; Smith-Loven and McPherson, 1993).

Despite substantial barriers, however, a number of women have ascended into top leadership positions in a variety of fields in recent years. Fortune Magazine declared 2006 the 'Year of the Most Powerful Woman CEO', citing PepsiCo, Xerox, eBay, ADM, and Kraft Foods, among others, as corporate examples of the leadership capabilities of women CEOs. Today, women hold approximately 16 per cent of all top leadership positions in large corporations (Hesse-Biber and Carter, 2005); while over 5 per cent of large companies are headed by women CEOs (Catalyst, 2011). While these figures fall far short of parity, they do suggest that while barriers exist, they are penetrable under certain

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conditions. Indeed, these trends present scholars with an important and pressing opportunity to understand the mechanisms that increase the likelihood that women will be promoted to top positions.

Previous scholarship has focused on individual level factors of potential and actual women leaders. For instance, one body of work suggests that women leaders attain their positions due to exceptional training, credentials and/or non-typical forms of cultural capital. For example, research suggests that women leaders invest more time and energy in human capital accumulation compared to their male peers (Ward *et al*., 1992;) and are less likely than other women to be married or have children (Alessio and Andrzejewski, 2000; Ferree and Risman, 1995). Other studies have found that women leaders tend to adopt particular hobbies (e.g., golf) or habits of speech and interaction that allow them to successfully navigate male-dominated corporate networks (Davies-Netzley, 1998; Gutek, 1985; Kanter, 1977). In her study of women executives, for example, Davies-Netzley (1998, p. 349) quoted one respondent's strategy for de-emphasizing her gender status when interacting with male colleagues: 'I talk sports, politics, read the Wall Street Journal. I talk what the guys do. I have to.' And there is evidence that women leaders must be exceptional. After all, they must survive cumulative odds of approximately 6 per cent of attaining a position in the highest level of management (Ferree and Purkayastha, 2000).

Another body of work focuses on potential women leaders and their shortcomings, with a particular focus on women's lack of assertiveness, drive and/or competitive spirit. A classic example is Babcock and Laschever's *Women Don't Ask*, which suggests that women are much less likely than their male peers to ask for promotions (Babcock and Laschever, 2003). A more recent example is provided by a talk on the relative lack of women in top leadership positions by Sheryl Sandberg, Chief Operating Officer (COO) of Facebook, in which she urged women to 'have the confidence to reach for opportunities' (Sandberg, 2011). The implication of such individual-level explanations is that if women were more assertive, there would be many more women leaders.

While individual-level explanations may provide some insight into the mechanisms that enhance or hinder women's organizational mobility, such explanations largely fail to consider the range of institutional factors that shape appointment decisions. As such, individual-level explanations fall short of providing a full explanatory account for the increase in the proportion of women in top positions in recent years. This analysis seeks to move beyond individual-level explanations to explore various institution-level mechanisms that may increase women's appointment to CEO, as well as factors that impact the tenure of women leaders post-appointment. Relying on a unique dataset of all CEO transitions among Fortune 500 companies over a 20-year period, the current analysis seeks to test the impact of these institutional factors on the promotion of women into leadership positions. Specifically, our analysis examines the effect of firm performance, board diversity, and post-appointment performance on women's appointment to and tenure in top leadership positions. Our findings have broad implications for scholarship on inequalities by gender in work organizations and the barriers to mobility for women in American firms.

Institutional context

Glass cliffs

Recent theoretical innovations in the literature on gender and organizational mobility have identified the so-called glass cliff, a metaphor to describe a phenomenon whereby women are more likely than men to be appointed to top leadership positions in organizations that are struggling, in crisis and/or at risk to fail (Ashby *et al*., 2007; Ryan and Haslam, 2005; 2007); Ryan and Haslam (2005) coined the term glass cliff to describe a pattern they observed in an archival analysis of appointments to the boards of FTSE 100 companies (companies with the highest market capitalization on the London Stock Exchange). Their analysis revealed women are over-represented on boards of poorly performing firms. Specifically, they found that companies that appointed women to their boards were more

likely to have experienced consistent performance declines *prior to* appointment compared to firms that appointed men to their boards (Ryan and Haslam, 2005). Based on this finding, the authors drew on a range of previous scholarship and theory to develop testable hypotheses related to the glass cliff (Ryan and Haslam, 2007).

Generally speaking, men are perceived as more capable leaders (Eagly and Karau, 2002; Heilman *et al*., 1995; Schein, 1973; 2001). However, Ryan and Haslam (2007) argue that gendered perceptions of good leadership are dependent on contextual factors, including the relative health or stability of the organization (Bligh *et al*., 2004; Haslam *et al*., 2001). Indeed, the health of the organization may shape perceptions about women leaders' perceived fitness in important ways. For example, gender stereotypes, such as women's greater emotional sensitivity and interpersonal skills, may be viewed as more highly valued in organizations in crisis that face difficult personnel decisions (Ryan *et al*., 2011). In one experimental study, Ryan *et al*. (2011) found that women are perceived as better managers in poorly performing firms because they are viewed as superior interpersonal mangers and more capable of taking the blame for failure. On the other hand, their study revealed that observers tend to associate men as ideal managers for successful firms (Ryan *et al*., 2011). Similarly, Bruckmüller and Branscombe (2010) found that male stereotypes played a strong role in selecting leaders for successful organizations, whereas female stereotypes predicted leadership selection for firms in crisis.

Despite growing evidence in support of the glass cliff phenomenon, additional scholarship suggests that glass cliff patterns are moderated by various contextual factors. For instance, in their study of leadership appointments in the US from 1992 to 2004, Adams *et al*. (2009) found that strong firm performance (measured by stock-based outcomes) increases women's chances of being appointed CEO. In fact, analysis of various measures of stock price performance prior to the appointment of new CEOs revealed that women are more likely to be appointed when firm performance is strong, while men are more likely to be appointed when performance is relatively worse. This finding could suggest that the glass cliff patterns are less likely when firm performance is measured by subjective measures such as share performance but when objective financial measures (such as return on equity and/or return on assets) are measured, glass cliff patterns are more evident.

Additional contextual variations have been identified by Bruckmüller and Branscombe (2010) and Ryan *et al*. (2011). Bruckmüller and Branscombe's (2010) study found that glass cliff patterns were particularly strong in contexts where men were the prototypical leaders but not in contexts with a history of female leadership. This suggests that we are more likely to observe glass cliff patterns in companies with less diverse boards than in companies with more diverse boards. In companies with more diverse boards, women already serve in important leadership positions and therefore women will be less likely to experience a glass cliff in their ascension to top leadership positions. Ryan *et al*. (2011) found that gendered stereotypes regarding ideal leadership varied for successful and unsuccessful firms. In unsuccessful companies, ideal leaders were more likely to be associated with female stereotypes than in more successful companies. We seek to contribute to this research by analysing whether this tendency holds in appointment decisions by testing the following hypothesis:

H1: Women are more likely than men to be appointed CEO in firms experiencing declining growth.

The saviour effect

While analysis of the glass cliff focuses on processes that increase women's likelihood of being promoted, the saviour effect considers the mechanisms that shape their post-promotion tenure. The saviour effect predicts that women will be granted less of an opportunity to prove their leadership capabilities compared to men, leading to significantly shorter tenures. In addition, women CEOs of firms experiencing declining growth are likely to be replaced by more traditional leaders — men — who will be brought in to 'save' the firm from poor leadership.

Women leaders face greater obstacles than men leaders for at least three reasons. First, if the glass cliff predictions are correct, women are more likely to be promoted to high-risk positions (Powell and Butterfield, 2002; Ryan and Haslam, 2007). Women's promotion to risky positions threatens to

confirm biases against women's leadership capabilities should their firms continue to struggle following their promotion. Second, because women leaders are more likely than men leaders to suffer from token status, their leadership is more likely to be subject to intense scrutiny and negative evaluation bias (Kanter, 1977). Finally, there is substantial evidence of implicit bias against women leaders generally (Eagly and Karau, 2002; Heilman *et al*., 1995; Schein, 1973; 2001). Women tend to be viewed as lacking the requisite skills to lead a large organization. Thus, despite women's ascension to the CEO position, stakeholders' confidence in their abilities may be tenuous.

For these reasons, we expect the perceived efficacy of women leaders' capabilities to diminish over time, particularly if they are unable to sufficiently reverse declining growth trends within the organization quickly and efficiently. In his book on the selection of corporate leaders, Khurana (2002) documents the growing and irrational quest to identify corporate leaders who can rescue organizations from crises through force of personality. While Khurana is concerned with the growing focus on corporate saviours generally, the saviour effect is suggestive of a gendered component to this tendency. Specifically, we predict that the desire of organizational decision-makers to seek a 'saviour' will exacerbate the risks faced by women in leadership positions.

H2a: Women CEOs will enjoy shorter average tenures than men CEOs.

H2b: Women CEOs of poorly performing firms will be more likely than men CEOs of poorly performing firms to be replaced.

Institutional diversity

A great deal of empirical evidence suggests that gender bias and in-group preferences shape hiring and promotion decisions in ways that tend to limit the occupational mobility of women (Brewer and Brown, 1998; Fiske, 1998; Nelson *et al*., 1996). For instance, decision-makers often reserve more attractive positions — including leadership positions — for in-group members (Powell and Butterfield, 2002; Tajfel and Turner, 1979) — a tendency Kanter (1977) termed 'homosocial reproduction'. They may do so strictly out of in-group loyalty, because they are simply more comfortable among members of the in-group or because they view in-group members as more essential to the organization. Not surprisingly, men's over-representation in managerial and other decision-making positions tends to reproduce gender biases and in-group preferences that limit women's access to top positions (Chambliss and Uggen, 2000; Pfeffer, 1989; Ridgeway *et al*., 1998).

However, researchers have also identified institutional mechanisms that overcome such tendencies and increase women's mobility. In particular, gender diversity among decision-makers tends to significantly reduce the role of gender bias and in-group preferences in hiring and promotion outcomes (Baron *et al*., 1991; Cohen *et al*., 1998; Cohen and Huffman, 2007). In fact, the integration of women into decision-making roles reduces both the impact of male-to-female evaluation bias and the tendency for men to prefer hiring other men (Carrington and Troske, 1995; Cohen *et al*., 1998; Ely, 1995).

A great deal of research on the effect of gender diversity among decision-makers reinforces this conclusion (Beckman and Phillips, 2005; Cohen *et al*., 1998; Gorman, 2005; Konrad and Pfeffer, 1991; Kulis, 1997; Pfeffer *et al*., 1995). For instance, Ely (1995) found that gender integration among decision-makers reduces the salience of gender as a category for candidate evaluation and selection. Furthermore, Gorman's study (2005) of hiring practices in US law firms concludes that female decision-makers are more likely to hire women than male decision-makers. Additional research has considered the effects of board composition on women's mobility to CEO. A recent study of CEO successions found that the gender integration on boards of directors strongly increased the probability that women would be named CEO (Elsaid and Ursel, 2011). Taken together, this research suggests that gender diversity among decision-makers, particularly among boards of directors who make appointment decisions, will increase the likelihood that women are appointed CEO.

Further research suggests that gender diversity among managers and decision-makers may also increase women leaders' tenure. Ely (1995) found that gender integration reduces the likelihood that

women will be viewed as 'tokens', which means that women appointed to top positions in diverse organizations will be less subject to negative evaluation bias and intense scrutiny compared to women leaders in less diverse organizations (Ely, 1995; Kanter, 1977). In other words, gender diversity among decision-makers is likely to increase both the chances of women being promoted to leadership positions and their tenures post-appointment.

H3a: Gender diversity among boards of directors will increase the likelihood that a woman will be appointed CEO.

H3b: Women CEOs will enjoy longer tenures in firms with diverse boards of directors compared to women CEOs in firms without diverse boards of directors.

Data and methods

Procedure

Our research questions were examined using a dataset of all female CEO transitions and a corresponding matched sample of male CEO transitions within the Fortune 500 companies from 1990 to 2011. To construct the comprehensive list of companies appearing on the Fortune 500 list during the examined years, the CNN money website money.cnn.com/magazines/fortune/fortune500 was used. CEO names, gender, internal/external data, year of appointment, and board of director composition were collected using several reference websites such as investing.businessweek.com, people.forbes-.com, businessweek.com, nndb.com, referenceforbusiness.com, along with company websites. The percentage of women in management per industry was collected using the Equal Employment Opportunity Commission (EEOC) government website's publication *Job Patterns for Minorities and Women.* Ticker symbols, SIC codes and financial measures were obtained through searches of the CRSP (Center for Research in Security Prices) and Compustat databases. Compustat was used to gather company-specific information regarding total assets, total equity, total liabilities, net income and sales. Data were collected by three graduate assistants, with quality and accuracy checks conducted at incremental stages throughout the process by both the lead graduate assistant and the professor in charge.

Our data collection efforts resulted in a population being examined for the proposed research questions (i.e., female leaders replacing male CEOs and male leaders replacing female CEOs) and a corresponding matched sample of male leaders replacing male CEOs. Given the small number of women to hold CEO positions within the Fortune 500 companies, this dataset includes all female CEOs of Fortune 500 companies that transitioned into office during the 22-year period being studied. Specifically, in the dataset, there are 28 CEOs that are women (including white and minority women), there are 27 transitions where a female CEO followed a male CEO (3 Asian/Indian female transitions and 24 white female transitions), there are five transitions where a male CEO followed a female CEO (white male transitions), and one transition where a female CEO followed a female CEO (Black female transition). To test the glass cliff theory, we investigated instances when a female leader replaced a male CEO within a firm, and we compared this to when a male leader replaced a male CEO. To test the saviour effect hypothesis, we investigated instances when a male leader replaced a female CEO within a firm, and we compared this to when a male leader replaced a male CEO.

We tested all of our hypotheses with independent *t*-test analysis. This method allowed us to compare mean differences among our variables of interest. For the test of the glass cliff and institutional diversity hypotheses, we compared the differences in firm performance (measured by shareholder returns, return on equity [ROE] and return on assets [ROA]) when a female leader followed a male CEO and compared performance when a male leader followed a male CEO. And to test for the saviour effect hypothesis, we compared the differences in firm performance when a male leader followed a female CEO and compared this to when a male leader followed a male CEO. Although the

limited sample size for the saviour effect did not allow for further analyses beyond the *t*-tests, the slightly larger sample size examining the glass cliff and institutional diversity research questions allowed for further analyses. As such, we also tested these hypotheses with conditional logistic regression analyses. This method allowed us to use a case/control style of analysis where the male leaders were the control group and female CEOs were the case group. The transition of these leaders into the CEO position was our event or outcome variable. To create the matched sample, we used male-to-male transitions that occurred in an organization of approximately the same size, in a firm within the same industry (as aligned up to a 2-digit SIC code), and the appointment occurring in approximately the same year as the female transition.

Measures

Our dependent variable to test for the glass cliff and the institutional diversity hypothesis is the transition of a female leader replacing a male CEO. If a female leader replaced a male CEO, it was coded as a one. If a male leader replaced a male CEO, it was coded as a zero. Our dependent variable to test for the saviour effect hypothesis is the transition of a male leader replacing a female CEO. If a male leader replaced a female CEO, it was coded as a one. If a male leader replaced a male CEO, it was coded as a zero.

Firm financial performance and board of director composition measures served as our predictor variables. The financial measures were primarily collected through the Compustat and CRSP databases. Once the raw data were obtained, calculations were made to ascertain the appropriate performance measures. As suggested in prior work, measures of firm financial performance fall into two primary categories: accounting-based and market-based measures (Dalton and Kesner, 1985). As such, we have selected the previously-used measures of ROA and ROE to represent the accounting-based measures and shareholder return (SH return) to represent the market-based measure (Coombs and Gilley, 2005; Dalton and Kesner, 1985; Waddock and Graves, 1997). Return on assets was determined by dividing net income by total assets. Total equity was computed by subtracting total liabilities from total assets, and then return on equity was determined by dividing net income by total equity. Shareholder return was calculated by taking the difference between the current year's stock price and the previous year's stock price, adding the previous 12 months dividends, and then dividing the sum of these numbers by the previous year's stock price. For the performance variables, we calculated firm financial measures for the year leading up to the transition, the two-year average leading up to the transition, and the three-year average leading up to the transition. All firm performance measures are reported in percentages. The composition of the board of directors was determined as the ratio of women on the board relative to the total number of board members. Information for all board members for each transition in our dataset was collected. The sex of the board members as well as membership of the board was determined through the reference websites noted above. Once composition of the membership of each board was determined, the number of female directors on the board was divided by the total number of directors on the board to calculate the percentage of women represented.

The control variables included in the analyses are the size of the firm as measured by total assets, whether the appointment was an internal or external hire, the year of the appointment, and the percentage of women in management within the industry. An internal appointment was coded as one, total assets were reported in millions, the year of the appointment was coded as a trend variable, and the percentage of women in management per industry was determined within a 2-digit SIC classification and coded as a percentage. An example of a woman CEO in our dataset is Carol M. Meyrowitz who has been CEO of TJX since January 2007. When she was appointed, the board of directors comprised 11 members of which four were women (roughly 36%). Ms. Meyrowitz was an internal appointment. The health of her firm prior to becoming CEO was as follows: a 3-year average ROA of 13%, ROE of 36%, SH return of 9.7%; 2-year average ROA of 12%, ROE of 34%, SH return of 9.8%; and a 1-year ROA of 12%, ROE of 32%, and SH return of 17%.

Results

Our research questions examine three theoretical propositions: first, whether female leaders are more likely than male leaders to be appointed CEOs in struggling firms as indicated by poor financial performance records; second, whether female CEOs will have a shorter tenure and be replaced by male leaders if firm performance does not improve under their leadership; and third, whether female representation on the board of directors impacts the likelihood of a female leader being appointed CEO and if it impacts the length of her tenure. To test our hypotheses we used conditional logistic regression and *t*-test analyses. For our conditional logistic regression analysis, we controlled for the year of the transition, the firm size as measured by total assets, percentage of women in management in the industry, and whether the appointee was internal or external to the firm. We then regressed our predictor variables of board of director composition, ROA, ROE and SH return on our outcome variable of the leadership transition to CEO. The case group was the transition to CEO of female leaders and the control group was the transition of male leaders to CEO following traditional male CEOs. For the *t*-test analysis, we compared male leaders replacing male CEOs with male leaders replacing female CEOs and female leaders replacing male CEOS to determine if differences existed within our examined variables. Correlations are presented in Table 1 and descriptive statistics are presented in Table 2.

Our first hypothesis suggests that female leaders will be appointed CEO in firms experiencing declining growth. This hypothesis is not supported within any of our examined models. As illustrated in Table 3, the three-year average, two-year average, and one-year performance measures do not show a significant relationship between female leaders being promoted and poor firm performance. The correlations suggest a slightly negative relationship with females being appointed and firm performance (see Table 1), the comparison of the means suggests slightly lower levels of firm performance when female CEOs are appointed relative to the matched sample of males being appointed (see Table 2), and the conditional logistic regression analysis suggests a negative trend of return on equity (see Table 3); however, nothing is statistically significant to offer support for this hypothesis. Thus, the glass cliff proposition does not hold within our studied population.

The second hypothesis suggests that female CEOs are more likely to have a short tenure and to be replaced by male leaders if firm performance does not improve under their leadership. This hypothesis is not supported in any of the examined models or analyses. In order not to skew any results, the CEOs appointed in 2011 were removed from the independent *t*-tests analysis when examining tenure (given the short time frame that would be reported). Results indicate that female and male leaders share approximately the same length of tenure, with the average for women being just over 47 months and the average for men being just under 47 months. And the *t*-test analysis of the saviour effect offers very limited support of the hypothesis. Although the shareholder returns are consistently negative prior to a man replacing a female CEO, only the three-year average reaches a level of marginal statistical significance ($p < 0.10$). The correlations also suggest a negative trend with firm performance before a male replaces a female CEO, but the relationships are not statistically significant (see Table 1). Hence, the results do illustrate a trend and one limited finding of support that suggest a male leader is more likely to replace a female CEO when the firm experiences negative ROA, ROE and shareholder return. Again, though, these are suggested by trends only and one marginally significant finding. Overall, support for the saviour effect hypothesis needs to be taken with caution.

Hypothesis 3 suggests that women are more likely to be appointed CEO and enjoy longer tenures as CEO as the proportion of women on the board of directors increases. This hypothesis was supported in all of our examined analyses. As illustrated in Table 1, the correlational relationship between a female being appointed and the composition of the board of directors is significant at $p < 0.01$. Additionally, in a smaller test of female CEOs, results suggest that as the proportion of women on the board of directors increases, the tenure enjoyed by female CEOs also increases. This positive correlational relationship (0.43) is statistically significant at $p = 0.05$. In the examination of the comparison of the means, the transition of a female leader following a male CEO has a mean board

Table 1: Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Female leader appointed after male CEO	—															
2. Male leader appointed after female CEO	—	—														
3. Internal/external (internal coded 1)	0.13	–0.08	—													
4. Percentage women in management in industry	0.06	–0.04	–0.11	—												
5. Firm size	0.09	–0.03	–0.22	0.28*	—											
6. Time of appointment	0.06	0.00	–0.16	0.37**	0.34**	—										
7. Tenure	0.10	0.12	0.17	–0.30**	–0.19	–0.77**	—									
8. Board of director female composition	0.40**	0.03	0.01	0.23	0.21	0.26*	–0.07	—								
9. Average 3-yr ROA	–0.05	–0.05	0.06	–0.22	–0.16	–0.09	0.03	–0.10	—							
10. Average 3-yr ROE	0.00	–0.08	0.15	–0.23	–0.09	–0.03	0.04	0.00	0.83**	—						
11. Average 3-yr shareholder return	–0.03	–0.21	0.02	–0.08	–0.11	0.00	–0.11	–0.19	0.15	0.10	—					
12. Average 2-yr ROA	–0.07	–0.06	0.01	–0.20	–0.10	0.00	–0.07	–0.15	0.96**	0.77**	0.23	—				
13. Average 2-yr ROE	–0.06	–0.10	0.07	–0.20	–0.08	0.10	–0.12	–0.09	0.86**	0.92**	0.20	0.86**	—			
14. Average 2-yr shareholder return	0.02	–0.22	–0.01	0.04	0.12	0.14	–0.19	–0.11	0.07	0.09	0.85**	0.16	0.17	—		
15. Prior 1-yr ROA	–0.13	–0.05	–0.05	–0.15	0.00	0.14	–0.15	–0.13	0.85**	0.64**	0.29*	0.94**	0.78**	0.26*	—	
16. Prior 1-yr ROE	–0.16	–0.13	–0.02	–0.13	0.07	0.27*	–0.27	–0.17	0.73**	0.73**	0.27*	0.80**	0.89**	0.28*	0.85**	—
17. Prior 1-yr shareholder return	–0.02	–0.12	–0.03	0.10	0.18	0.16	–0.13	–0.01	–0.11	–0.09	0.69**	–0.06	–0.05	0.74**	0.09	0.11

* $p < 0.05$, ** $p < 0.01$.

Table 2: Independent samples t-test

	Test of glass cliff and institutional diversity					Test of saviour effect				
	(Female follows male)		(Male follows male)			(Male follows female)		(Male follows male)		
Variable	Mean	s.d.	Mean	s.d.	*t*-statistic	Mean	s.d.	Mean	s.d.	*t*-statistic
1. Tenure	49	31	44	40	—	58	45	44	40	—
2. Percent women BOD	0.23	0.14	0.13	0.10	–3.13***	0.14	0.08	0.13	0.10	—
3. ROA 3 Yr avg	0.05	0.07	0.06	0.05	—	0.05	0.03	0.06	0.05	—
4. ROE 3 Yr avg	0.19	0.27	0.19	0.24	—	0.13	0.10	0.19	0.24	—
5. SH Returns 3 Yr avg	0.02	0.25	0.06	0.19	—	–0.05	0.11	0.06	0.19	1.86*
6. ROA 2 Yr avg	0.04	0.09	0.05	0.05	—	0.05	0.03	0.05	0.05	—
7. ROE 2 Yr avg	0.14	0.31	0.17	0.19	—	0.12	0.09	0.17	0.19	—
8. SH Returns 2 Yr avg	0.03	0.29	0.05	0.23	—	–0.09	0.23	0.05	0.23	—
9. ROA 1 Yr avg	0.02	0.15	0.05	0.05	—	0.04	0.05	0.05	0.05	—
10. ROE 1 Yr avg	0.04	0.50	0.16	0.18	—	0.10	0.09	0.16	0.18	—
11. SH Returns 1 Yr avg	0.06	0.49	0.10	0.42	—	–0.04	0.42	0.10	0.42	—

N = 57 for glass cliff and institutional diversity *t*-test analysis, *N* = 36 for saviour effect *t*-test analysis
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Conditional logistic regression — test of glass cliff and institutional diversity
DV = Female leader appointed following a white male CEO

IVs	B	SE	Model 1 Odds ratio	B	SE	Model 2 Odds ratio	B	SE	Model 3 Odds ratio
Control variables									
Internal/external hire	0.04	0.55	1.04	0.07	0.54	1.07	0.03	0.54	1.03
Firm size	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
% women in mgt in industry	–0.01	0.02	1.00	–0.01	0.02	0.99	–0.01	0.02	0.99
Time of appointment	0.01	0.06	1.01	0.00	0.06	1.00	0.01	0.07	1.01
Predictor variables	**(3-year average)**			**(2-year average)**			**(1-year average)**		
% Women BoD	3.75**	1.65	42.63	3.32**	1.62	27.77	3.02*	1.80	20.57
ROA of prior CEO	1.21	6.99	3.35	0.10	5.43	1.11	–0.24	2.85	0.79
ROE of prior CEO	–0.26	1.78	0.77	–0.23	1.63	0.79	–0.15	1.03	0.86
Shareholder returns of prior CEO	0.24	0.98	1.27	0.37	0.87	1.45	0.04	0.48	1.04
χ^2	6.11			5.16			5.22		

N = 51 for Model 1, 52 for Model 2, 52 for Model 3.
* $p < 0.10$, ** $p < 0.05$.

composition of 23 per cent female, whereas the transition of a male leader following a male CEO has a mean board composition of 13 per cent female. This is statistically significant at $p < 0.01$ (see Table 2). In the conditional logistic regression analyses (see Table 3), the composition of the board of directors is significant in two windows and marginally significant in one window. For Models 1 and 2, the level of significance is $p < 0.05$, and in Model 3, the level is marginally significant at $p < 0.10$. Our findings suggest that the composition of the board of directors plays a much larger role in a female being appointed CEO and remaining CEO than do firm performance measures.

Discussion and conclusion

This analysis explored the role of institutional factors in shaping women's vertical mobility in the largest firms in the US. Specifically, we analysed the role of firm performance and decision-maker diversity on the likelihood that women will be appointed CEO as well as on women's post-appointment tenure duration. The glass cliff hypothesis suggests that women will be more likely than men to be appointed to organizations that are struggling, in crisis, or at risk to fail. The saviour effect suggests that when women are promoted to top leadership positions, confidence in their leadership will be tenuous. As a result, women will enjoy shorter tenures than men and be more likely to be replaced by men should their firms experience negative growth under their leadership. Finally, previous research on institutional demography suggests that when women are integrated among decision-making ranks, women will be more likely to be promoted to leadership positions and to enjoy longer tenures in those positions.

We find little evidence that women are more likely to be promoted to CEO in firms that are struggling. Indeed, the performance of the firm under the previous CEO, measured in terms of one-, two- and three-year averages, had no significant impact on women's likelihood of being appointed CEO. While stereotypes and bias undoubtedly shape perceptions of good leadership, these factors do not shape promotion decisions as predicted by the glass cliff.

Likewise, we find minimal support for the predictions of the saviour effect thesis. The length of women CEOs' tenure does not differ significantly from men's, and there is limited evidence that women leaders of struggling firms are likely to be replaced by men. It is worth noting that the direction of the coefficients is suggestive of a relationship between negative firm performance and the replacement of women CEOs with men, and findings suggest this relationship is marginally significant within the three-year timeframe examined. The lack of more highly significant findings may be due to the relatively small size of the population under study. Future research that relies on a larger sample of CEO transitions beyond the Fortune 500 should explore this relationship further.

We do find evidence that institutional diversity significantly impacts women's mobility and tenure. First, women's integration on boards of directors significantly increases the likelihood that a woman will be appointed CEO. Second, there is a significant positive relationship between the proportion of women on the board of directors and women CEOs' length of tenure. Taken together, these findings suggest that diversity among decision-makers plays a strong role in women's ability to overcome the barriers posed by the glass ceiling. While previous research has shown that gender integration among managerial ranks increases women's odds of being hired and promoted (Ely, 1995; Gorman, 2005); this study shows that this impact holds for promotions at the highest level. Furthermore, diverse boards increase the duration of women leaders' tenure, allowing them a greater opportunity to demonstrate their leadership capacity. Conversely, our findings also suggest that all-male boards or predominantly male boards are much more likely than diverse boards to appoint male CEOs.

Two theories clarify these findings. First, social identity theory suggests that individuals more positively evaluate in-group members and thereby limit access to out-group members (Tajfel and Turner, 1986); Kanter (1977) refers to this process as homosocial reproduction, whereby male decision-makers tend to appoint leaders like themselves in terms of gender, race, age and background (Daily and Dalton, 1995). Thus, male-dominated boards will be more likely to appoint male

CEOs. On the other hand, gender integration on boards will reduce the likelihood that women leaders will be viewed as outsiders, thus allowing women greater access to top leadership positions (Ely, 1995).

Kanter's theory of tokenism sheds light on the impact of board composition on women leaders' tenure. In male-dominated organizations, women leaders suffer from token status, which leads to high visibility and performance pressures (Kanter, 1977). Token status also leads to weaker social and professional networks, reduced organizational support, information and assistance from peers and subordinates (Taylor, 2010). As a result, token women leaders often experience reduced performance and job satisfaction (Inzlicht & Ben-Zeev, 2003; Sekaquaptewa and Thompson, 2003; Spencer *et al*., 1999). Together, these pressures lead to shorter tenures for token leaders than for non-token leaders. However, gender integrated boards reduce the token effect for women leaders by presenting women CEOs with women peers in top leadership positions. The visibility of other women leaders likely reduces the pressures associated with token status, increases women leaders' access to professional networks and support, and increases the probability of performance success and satisfaction.

Overall, our analysis underscores the importance of institutional diversity, particularly among decision-making bodies, for increasing the representation of women among top leadership ranks. Not only does diversity increase women's odds of being promoted to CEO, but also increases women leaders' tenure duration. Large organizations, including work organizations, governmental and political bodies as well as advocacy organizations committed to women's representation among top leadership positions would do well to focus their efforts on promoting gender diversity among decision-makers. Doing so will likely have a strong and significant impact on women's promotion and leadership duration. In addition to the research directions outlined above, future research could expand the current study by focusing on whether diversity among decision-makers has a similar impact on the promotion of other under-represented leaders, including ethnic/racial minorities.

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