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RESEARCH REPORT

Do Women CEOs Face Greater Threat of Shareholder Activism Compared to Male CEOs? A Role Congruity Perspective

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We examine the glass cliff proposition that female CEOs receive more scrutiny than male CEOs, by investigating whether CEO gender is related to threats from activist investors in public firms. Activist investors are extraorganizational stakeholders who, when dissatisfied with some aspect of the way the firm is being managed, seek to change the strategy or operations of the firm. Although some have argued that women will be viewed more favorably than men in top leadership positions (so-called "female leadership" advantage logic), we build on role congruity theory to hypothesize that female CEOs are significantly more likely than male CEOs to come under threat from activist investors. Results support our predictions, suggesting that female CEOs may face additional challenges not faced by male CEOs. Practical implications and directions for future research are discussed.

Keywords: role congruity theory, glass cliff, gender, shareholder activism, CEO

The ascent of some women to the CEO position has stimulated considerable interest in understanding their experiences in these roles (Glass & Cook, 2016). While some believe that women will be viewed more favorably than men in top leadership positions (Rosette & Tost, 2010), other scholars suggest that women who reach the uppermost levels of organizational hierarchy encounter challenges and threats not faced by their male counterparts (Ryan et al., 2016). Specifically, research under the umbrella of "glass cliff" suggests that women managers will "receive greater scrutiny and criticism than men, and be evaluated less favorably, even when performing exactly the same leadership roles as men" (Ryan & Haslam, 2007, p. 550). This bias against women leaders, which runs counter to the popular notion of "female advantage" in leadership (Fondas, 1997; Leslie, Manchester, & Dahm, 2017), stems in part from dissimilar beliefs about attributes of leaders and women versus similar beliefs about attributes of leaders and men ("think leader–think male" syndrome; Eagly & Karau, 2002). To extend this line of inquiry, and provide a strong test of the greater monitoring directed at female vis-à-vis male leaders, we examine whether CEO gender is associated with the likelihood of a firm being targeted by activist investors, an extraorganizational stakeholder group legally empowered to take a public position against management (Goranova & Ryan, 2014).

Although public firms tend to have a range of stakeholders (Davis, Schoorman, & Donaldson, 1997), the most powerful are the shareholders who (collectively) own the firm (Hillman & Keim, 2001). Typically, shareholders are passive owners relying on managers, who presumably have the expertise, to lead the firm. However, shareholders can attempt to redirect managerial decisions and actions, especially when they own a nontrivial stake in

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the firm (Goranova & Ryan, 2014). Shareholders who acquire more than 5% of the voting stock of a public company with the intention of influencing its management are required by the Securities and Exchange Commission (SEC) to file a Schedule 13D. Such shareholders are considered activist investors and typically are seen as a threat by management (Gantchev, 2013).[1]

We examine whether firms with female CEOs face greater threat of shareholder activism than firms with male CEOs. Specifically, we theorize that the frequency and intensity of Schedule 13D filings are significantly higher for female CEOs than male CEOs. By examining a threat originating outside of the firm, our research extends prior work that examines organizational and interpersonal biases inhibiting women's corporate success (Cook & Glass, 2014b). We also cast light on a hitherto invisible bias, rooted in CEO gender, in shaping the threat from activist investors (Goranova & Ryan, 2014). Finally, examining the forces directed at the CEO should advance understanding of gender bias in leadership roles, which typically examines line supervisors or middle management positions (Koenig, Eagly, Mitchell, & Ristikari, 2011). More broadly, we examine the provocative claim that prejudice against women does not manifest in real-world settings (Landy, 2008), presumably because leadership roles in modern organizations are powerful enough to overwhelm gender biases (Elsesser, 2016).

Theory and Hypotheses

Although women comprise about 50% of the workforce in the U.S., their representation reduces considerably as one moves up the hierarchy. For example, among Fortune 500 companies, women comprise 4.8% of CEOs, 14.6% of executive officers, and 16.9% of board members (Hanek, Garcia, & Tor, 2016). The underrepresentation of women in the upper echelons of the corporate sector is a global phenomenon, as only 8% of companies around the world with annual revenues above $500 million have a female chief executive (Weber Shandwick, 2015). Scholars attribute the scarcity of women leaders to an invisible barrier of prejudice and discrimination, famously dubbed the "glass ceiling" by Hymowitz and Schellhardt (1986), that keeps women out of top-tier leadership positions (Jalalzai, 2013).

This prejudice is thought to arise from societal gender role stereotypes, generalized beliefs about characteristics attributed to men and women (Eagly & Karau, 2002; Ridgeway, 2001; Schein, 2001). Gender role stereotypes are pervasive and easily accessible, and describe as well as prescribe attributes and behaviors of men and women (Heilman, 2001). For example, men tend to be associated with agentic characteristics, which capture achievement-oriented tendencies (e.g., aggressive and confident), whereas women tend to be associated with communal attributes, which capture concern with the welfare of others (e.g., caring and kind; Burgess & Borgida, 1999). From a role congruity perspective, because leadership roles tend to be associated with masculine (agentic) attributes, women are seen as less congruent with such leadership roles (Eagly & Karau, 2002). Evidence indicates that, in general, women are considered less desirable candidates for leadership roles and, once in such roles, their behaviors are evaluated differently and less favorably than the same behaviors performed by men (Eagly & Chin, 2010). Not surprisingly, it has been argued that "probably the single most important hurdle for women in management" is the pervasive and persistent expectation linking the leader role with men and not with women (Antal & Izraeli, 1993, p. 63).

Despite the evidence that successful leaders are perceived as more similar to masculine than feminine attributes (Heilman, 2001; Schein, 2001), some women manage to make their way to the top of the organizational hierarchy (Cook & Glass, 2014a). The literature provides at least two reasons to explain how women may overcome the obstacles associated with the perceived lack of fit between their gender role and the leadership role (Gervais & Hillard, 2011). Some posit that women who reach the highest level of a firm "may be particularly gifted and/or especially good" and thus able to overcome such prejudice (Hill, Upadhyay, & Beekun, 2015, p. 1119). Another explanation for why women are able to achieve the chief executive position is that in some contexts feminine attributes are perceived as more beneficial for the leader (Fondas, 1997). In particular, when companies are in crisis, feminine attributes associated with managing people may be highly valued, and thus make women rather than men more congruent with the attributes needed for the leadership role (Ryan, Haslam, Hersby, & Bongiorno, 2011).

Ryan and Haslam (2005) coined the term "glass cliff" to emphasize that women who break through the proverbial glass ceiling face more difficulties and challenges than men. These scholars proposed, and some evidence supports (Ryan & Haslam, 2009; Ryan et al., 2016; but see Adams, Gupta, & Leeth, 2009), that women are more likely to be chosen for risky and precarious leadership roles, which may result in their greater likelihood of failure on the job. Ryan and Haslam (2007) also proposed that women leaders would face more scrutiny than male leaders in leadership roles. However, despite the ongoing interest in examining whether women appointed to top executive positions have different experiences than men (Glass & Cook, 2016; Lee & James, 2007), little research has examined the proposition that greater monitoring and scrutiny will be directed at women CEOs compared to male CEOs.

Considerable research points to the "liability of gender" (Greene, Han, & Marlow, 2013) in work settings as men and women are perceived and treated differently. For example, consistent with gender role stereotypes, women were perceived to have more family work conflict than men, which led to lower performance and promotability ratings (Hoobler, Wayne, & Lemmon, 2009). Such results are consistent with experimental studies indicating that holding performance constant, female leaders received lower evaluations than male leaders (Eagly, Makhijani, & Klonsky, 1992). More broadly, women leaders were less likely than men to be rewarded in their roles and to be part of networks and support systems important for success as a leader (Lyness & Thompson, 1997). Thus, research indicates that, in general, women are viewed differently, and most often worse, than men in work settings, which may provide an explanation for why there are few women CEOs. However, once women reach the CEO position, will they still be treated differently than men in such positions? We strive to answer this question by examining whether women and men

[1] Gillan and Starks (2007, p. 55) define activist investors as shareholders, "who dissatisfied with some aspect of a company's management or operations" seek to bring about change in the company.

CEOs receive differential treatment from activist investors, an important and influential extraorganizational stakeholder.

Shareholders acquiring 5% or more of the voting stock in a public firm with the intention of influencing management must file Schedule 13D with the SEC to formally indicate they intend to take an activist position. Activist investors seek to influence target firms by demanding changes in the strategic policies, procedures, or decisions (David, Hitt, & Gimeno, 2001). Not surprisingly, executives generally view activist investors as antagonists who want to impose their desires and plans on the CEO (Gillan & Starks, 2007). The popular wisdom is that when investors file the Schedule 13D they are publicly saying "they think a company is not being run as well it could be" (Herscher, 2015). Furthermore, scrutiny from activist investors begets unfavorable attention from other stakeholders (e.g., media and financial analysts), which amplifies the monitoring directed at management (Gramm, 2016).

Because activist investors are primarily interested in maximizing their financial returns (Goranova & Ryan, 2014), they may be agnostic about the sex of the CEO. Furthermore, if female CEOs are considered more competent than male CEOs (Leslie et al., 2017), female CEOs would have less pressure from activist investors. We theorize, however, that investors are susceptible to the pervasive bias associated with gender role stereotypes discussed earlier. In particular, stereotypes have more influence in situations with ambiguous evaluative criteria (Heilman & Eagly, 2008), which describes the circumstances in which CEOs' actions and contributions to organizational outcomes are assessed (Auster & Prasad, 2016; Vial, Napier, & Brescoll, 2016). Thus, based on role congruity theory (Eagly & Karau, 2002), we hypothesize:

> *Hypothesis 1:* Female CEOs are more likely than male CEOs to come under threat from activist investors.

Hypothesis 1 examines whether male and female CEOs differ in whether they are threatened by activist investors. An additional aspect of activism threat is the number of activist investors who target the firm at the same time. Larger numbers of activist investors for one firm suggest widespread discontentment with the firm's management and tend to be highly problematic for CEOs (Brav, Jiang, Partnoy, & Thomas, 2008). Consistent with the role incongruity proposition that women are less likely than men to be viewed as strong leaders, we hypothesize:

> *Hypothesis 2:* Female CEOs are more likely than male CEOs to come under threat from multiple activist investors.

Although accumulating evidence indicates challenges faced by women who aspire to leadership roles in organizations, there is little research examining the important issue of what happens to women who become CEOs (Glass & Cook, 2016). To our knowledge, our study provides the first direct test of the "glass cliff" argument that women CEOs receive greater scrutiny from external constituents than do men (Ryan & Haslam, 2007). If women do come under greater pressure from activist investors, it can undermine their ability to lead effectively, thus reinforcing gender role stereotypes of the perceived incongruence of women and leaders.

Method

Sample

Our sample begins with Schedule 13D filings made by activist investors in public U.S. firms. These filings were obtained from the SEC's EDGAR database for the 1996 to 2013 period.[2] We then merged the Schedule 13D sample with the Execucomp database to identify CEO gender and with the Compustat database to obtain financial information.[3] Since a Schedule 13D can be filed anytime during the year while CEO gender is recorded only once a year, we eliminated CEO departure years from the study.[4] Our sample included over 25,000 firm-year observations (for 3,026 unique firms), with an activist filing occurring in over 1,500 firm-years (for 1,090 unique firms).

Main Independent Variable

Female. An indicator variable that takes the value 1 if the CEO is female.

Dependent Variables

Activism. An indicator variable that takes the value 1 if, for a given firm in a given year, there is at least one Schedule 13D filing.

Activism number. A count variable that equals the number of unique Schedule 13D filings for a given firm in a given year.

Control Variables

Following prior research (Brav et al., 2008; Clifford, 2008) and guided by recent discussions about control variable selection (Spector & Brannick, 2011; Carlson & Wu, 2012), we included the following control variables that may impact shareholder activism: *Firm Size, Profitability, Leverage, Dividend Yield,* and *Industry Competition (HHI).*[5] *Firm Size* is the firm's market capitalization in millions of dollars and controls for the cost of becoming an activist investor since larger firms require greater capital outlays from activists. *Profitability* is the ratio of earnings before interest, taxes, and depreciation to total assets and controls for the possibility that female-led firms have lower performance than male-led firms (Haslam & Ryan, 2008), which would make such firms more attractive targets for activists. *Leverage* is the ratio of long-term debt to total assets, and *Dividend Yield* is the ratio of total dividends paid during the year to the market value of equity. Both of

[2] In 1996, the SEC moved to electronic filings and required all public domestic corporations to make their filings on EDGAR. We thank Chris Clifford for help with obtaining this data.

[3] Firms included in Execucomp generally cover the 1,500 largest listed firms in any given year.

[4] We thank an anonymous reviewer for raising the potential impact of CEO departures. Our results remain consistent whether or not we exclude CEO departure years.

[5] In addition to these control variables, we reran our analyses with the following additional controls: Tobin's Q, R&D intensity, sales growth, institutional ownership, analyst coverage, and the degree to which a CEO has specialized skills. We also controlled for governance quality using the E-index (Bebchuk, Cohen, & Ferrell, 2009). Finally, we also controlled for the number of women board members in the firm (we thank the editor for this suggestion) and Return on Assets (ROA). There is no material change to our results or conclusions using these additional control variables.

these controls measure the degree to which a firm is in financial difficulty, which may make it more likely the firm will receive activism attention. *HHI* is the Herfindahl-Hirschman index, a measure of industry competition, computed as the sum of the squared market shares of all firms in an industry. Firms in less competitive industries are less likely to be a target of shareholder activism. All control variables are lagged one year.

Analyses

As we had a limited dependent variable, we employed probit regressions for hypotheses testing.[6] Specifically, we used probit regressions to test *H1* as *Activism,* a binary dependent variable, and ordered probit regressions to test *H2* as *Activism Number*, a count variable. In all regressions, we clustered standard errors at the CEO level to deal with intrafirm clustering that arises from nesting within our data (i.e., we have multiple observations for the same CEO across years).[7] Our results were robust if, instead of clustering standard errors, we employed multilevel modeling techniques that STATA offers as suitable for nonlinear mixed-effects hierarchical regressions (namely, meprobit and meoprobit). As we discuss later, we conducted additional analyses using propensity-score matching and instrumental variable techniques to deal with potential endogeneity issues (stemming from, e.g., selection bias) and found that our results remained robust.

Results

Table 1 provides descriptive statistics and correlations for the independent variables. Female CEOs represent two percent of our firm-year observations, consistent with the notion that female representation at the CEO level remains low (Cook & Glass, 2014b). The correlations suggest that multicollinearity is not a major concern.

Table 2 presents the regression results. Model 1 provides results from the probit regression of *Activism* on the control variables, while Model 2 adds *Female*, our variable of interest. The coefficient on *Female* is positive and significant ($\beta = 0.24$, $p < .01$). Following Wiersema and Bowen (2009), we examined the marginal effect of the independent variable and found that the coefficient for *Female* translates to an associated marginal probability of 3.4%. Given that the unconditional probability of a firm being threatened by an activist investor is 6% in our sample, the marginal probability of a woman CEO being targeted by an activist investor is substantial (i.e., almost 50% higher than the unconditional probability). Thus, we find support for our first hypothesis, that female CEOs are more likely to come under activist threat.

The last two models of Table 2 have *Activism Number* as the dependent variable. Model 3 provides results from the ordered probit regression of *Activism Number* on the control variables, while Model 4 adds *Female*, our variable of interest. The coefficient on *Female* is positive and significant ($\beta = 0.21$, $p < .01$) and translates to an associated marginal probability of approximately 0.6%. Given that the unconditional probability of a firm being targeted by multiple activists is 1%, the marginal probability of a woman CEO being targeted by multiple activists is substantial (i.e., about 60% higher than the unconditional probability). Thus, we find support for *H2* that female CEOs are more likely to come under threat from multiple activists.

Alternative Analyses

Since male and female CEOs are not randomly assigned to firms, our results may be vulnerable to endogeneity problems, caused by selection bias. Endogeneity affects the accuracy of our inferences (Hamilton & Nickerson, 2003), and so we conducted two additional sets of analyses in an attempt to mitigate endogeneity concerns (Antonakis, Bendahan, Jacquart, & Lalive, 2010). The first set of analyses created matched samples of firms using the propensity score matching (PSM) technique. For the second set of analyses, we used an instrumental variable approach. As noted by scholars, PSM and instrumental variable analysis are among the most useful approaches to ensure consistency of estimates threatened by endogeneity (e.g., Antonakis et al., 2010). Thus, establishing that the results are robust to both approaches strengthens the empirical rigor of our investigation.

PSM is a technique that matches groups (i.e., male- or female-led firms) on multiple variables, which for our analyses are the control variables (i.e., variables known to affect activism) and year dummies (to account for time trends in the hiring of female CEOs).[8] We employed a probit regression with control variables and year dummies as predictors to create propensity scores, which reflect the estimated probability that a firm has a female CEO based solely on control variables. Using propensity scores, each female-led firm was then matched with a male-led firm with the closest propensity score, but only if the propensity score differed by 0.01 or less. We were able to match 524 female-led firm years with corresponding male-led firm years (about 95% of the female CEO sample). We then examined the extent to which activism and activism number differ based on CEO gender in this matched sample. As indicated in Table 3, female-led firms face greater activist threat since in 11% of firm years there is an activist filing as opposed to 6% for otherwise similar male-led firms. The difference in activist activity is statistically significant ($p < .01$). Similarly, we found that female-led firms face greater threat from multiple activist investors than do male-led firms.

For the instrumental variables approach, we estimated a two-stage regression model where the first-stage regression has *Female* as the dependent variable and the control variables discussed

[6] Our results are consistent using alternative analytical techniques such as logistic, ordered logistic, and Poisson and Negative Binomial regressions.

[7] Such nesting violates an important assumption of "traditional" regressions—the independence of regression residuals—because observations for the same CEO or firm are not independent. As Petersen (2009, p. 440) notes, "correlation of the residuals within a cluster is the problem the clustered standard errors are designed to correct."

[8] Propensity-score matching involves matching treated and untreated observations (e.g., female-led and male-led firms) on the estimated probability of being treated (i.e., being a female-led firm). Firms were matched on the propensity score in an attempt to mimic randomization by creating a sample of treated observations that are comparable to a sample of nontreated observations based on relevant, observable characteristics. In our case, we first estimated the probability of a firm having a female CEO and then, for each female-run firm, we matched a male-run firm with the closest propensity score (Rosenbaum & Rubin, 1983). We note that various algorithms can be used to create the matched pairs, such as nearest neighbor, nearest neighbor with caliper, and radius with caliper and kernel matching, each having its own advantages and disadvantages (see Caliendo & Kopeinig, 2008, for a discussion). We report the results from using the nearest neighbor within a 0.01 caliper; specifically, we require that the difference in the propensity score of a female-led firm and a male-led firm be no more than 0.01 (or 1 percentage point). Importantly, the conclusions we draw are similar using the other matching algorithms.

Table 1
Descriptive Statistics and Correlations

Variable	Mean	*SD*	1	2	3	4	5	6	7
1. Activism	.06	.25							
2. Activism number	.08	.34	.88**						
3. Female	.02	.14	.03**	.02**					
4. Ln (Firm Size)	7.46	1.65	−.12**	−.11**	−.04**				
5. Profitability	.14	.12	−.06**	−.05**	−.01	.24**			
6. Leverage	.32	.28	.05**	.06**	.00	.07**	−.13**		
7. Dividend Yield	.01	.02	−.01	−.01	.01	.10**	−.10**	.22**	
8. HHI	.07	.06	.02**	.02*	.00	−.02**	.10**	−.01	−.05**

Note. HHI = Herfindahl-Hirschman index. N = 25,721 firm observations (from 1996 to 2013).
* $p < .05$. ** $p < .01$.

earlier. The instrumental variable we added to the first stage was *Outside Female Exposure*, defined as the proportion of a firm's board that sits on *another* firm's board with either a female director or a female CEO.[9] The basic idea behind this instrument is that having directors who work with female directors or female CEOs at *other* firms may increase the probability that the focal firm has a female CEO, but there is no reason for this instrument to increase the probability of activist threat at the focal firm.

We report both the first stage and second stage results in Table 4.[10] The first regression reports the first-stage results and indicates that, as expected, *Outside Female Exposure* is positively related to firms having female CEOs ($\beta = 1.39$, $p < .01$). In the second stage, we replaced the variable *Female* with *Female*$^{\$}$, the fitted value from the first stage regression. Results indicate that *Female*$^{\$}$ is positively related to both *Activism* ($\beta = 2.73$, $p < .01$) and *Activism Number* ($\beta = 2.82$, $p < .01$). Thus, even after accounting for the possibility of omitted variables, we continue to find that firms run by female CEOs have a greater likelihood of activist threat (*H1*) and a greater likelihood of multiple activist threat (*H2*).

In all, we find consistent results and support for our hypotheses after we account for endogeneity and selection bias issues via employing PSM and instrumental variable approaches.

Finally, based on a reviewer's comment, we conducted additional probit analyses to examine whether firm performance (ROA) prior to CEO change is related to the appointment of a female chief executive. As noted earlier, the glass cliff literature proposes that women are more likely to be appointed leaders when firms are performing poorly, although the empirical evidence is mixed (Ryan et al., 2016). Therefore, using a subsample of firms where the CEO changed during the sample period, we examined whether prior year ROA is related to the appointment of a female CEO. We found that prior year ROA is not related to whether a female is appointed CEO.[11] Note, however, that these analyses are not the primary focus of our study and thus should be interpreted cautiously. To conduct more rigorous tests of the proposition that women are more likely to be appointed CEO following poor performance, researchers should obtain a different and larger sample of firms (for the current study, we intersected various required databases including the SEC's EDGAR database).

Discussion

Considerable evidence indicates that women business leaders tend to have different experiences than men (Glass & Cook, 2016). We extend such research by examining whether female CEOs are treated differently than male CEOs by activist investors, an important external stakeholder for public firms. Our results, using a large 18-year dataset of activism threat in publicly traded firms, indicate that female CEOs are more likely than male CEOs to come under threat from activist investors, and also are more likely to have simultaneous threats from multiple activist investors. As such, our findings extend role congruity research and provide revealing insights into the glass cliff phenomenon and shareholder activism. More broadly, our results illuminate a key additional challenge, namely heightened monitoring and pressure from activist investors, faced by women even when they have reached CEO position.

Our research contributes to the ongoing conversation about the extent to which women face gender bias in work settings (Motro & Ellis, 2017). Although some scholars argued that there is "little or no" evidence of gender bias against women in the 21st-century business environment (Elsesser & Lever, 2011, p. 1571; Landy, 2008), our results support Heilman and Eagly's (2008, p. 392) position that "gender stereotypes are alive, well, and busy producing workplace discrimination." It is revealing that even at the CEO level, women and men are treated differently by external stakeholders. Although investors are, presumably, interested solely in maximizing their financial returns, they appear susceptible to gender bias. Such results are disconcerting, as the CEO position, unlike some other leadership positions, is highly visible to internal and external audiences (Bugeja, Matolcsy, & Spiropoulos, 2012). If prejudice based on gender role incongruity occurs for such visible roles, it suggests there may be even more prejudice against women in less visible high-level positions (e.g., other C-level positions). Notably, the filing of Schedule 13D is a formal and public expression of dissatisfaction with the CEO, as it implies that activists perceive the firm is underperforming and that the CEO needs to be told how firm strategy or performance can be im-

[9] A good instrumental variable will be related to the probability of hiring a female CEO but is uncorrelated with the error term of the regression that predicts shareholder activism (Bascle, 2008). Our choice of instrumental variable, inspired by Faccio, Marchica, and Mura (2016), is based on the notion of familiarity: Directors are more open to hiring a female CEO if they have worked with senior female executives at other firms.

[10] We obtained board composition data from RiskMetrics, and this reduces the sample size.

[11] Tabulated results for this analysis are available from the first author.

Table 2
Activism and Female CEOs

	Activism				Activism number			
	Model 1		Model 2		Model 3		Model 4	
Variables	Estimate	*SE*	Estimate	*SE*	Estimate	*SE*	Estimate	*SE*
Intercept	−.66**	.07	−.68**	.07				
Ln (Firm Size)	−.12**	.01	−.12**	.01	−.12**	.01	−.12**	.01
Profitability	−.48**	.12	−.48**	.12	−.44**	.11	−.44**	.11
Leverage	.32**	.05	.32**	.05	.32**	.05	.32**	.05
Dividend Yield	−3.36**	.82	−3.38**	.82	−3.16**	.82	−3.18**	.82
HHI	.59**	.20	.59**	.20	.55**	.20	.55**	.20
Female			.24**	.09			.21**	.08
Observations	25,721		25,721		25,721		25,721	
Pseudo R-squared	.03		.03		.03		.03	
Likelihood ratio	261.04**		266.14**		250.07**		250.40**	

Note. HHI = Herfindahl-Hirschman index. The dependent variable in Models 1 and 2, *Activism*, is an indicator variable that takes the value 1 for a firm if in a given year at least one Schedule 13D filing is lodged with the SEC, and takes the value 0 otherwise. The dependent variable in Models 3 and 4, *Activism number*, is a count variable that equals, for a firm in a given year, the number of unique activists filing a Schedule 13D with the SEC. Standard errors are clustered at the CEO level.
** $p < .01$.

proved. Based on our results, it seems likely, although empirical research is needed, that female CEOs also receive more unwanted private advice and direction from external stakeholders than male CEOs, which imposes additional monitoring and challenges on female CEOs.

Although evidence is mixed concerning the value of shareholder activism for shareholders (Denes, Karpoff, & McWilliams, 2017), it is clear that executives typically view activists, who have made a public announcement of their dissatisfaction with management, antagonistically. Shareholder activism imposes escalating and diverse demands for changes in how the firm operates, shifting power from the CEO to the activists. Importantly, activist investors may have different strategic goals than the CEO (Gillan & Starks, 2007) and frequently attempt to influence CEOs to act in ways that privilege the interests of the activist investors (Goranova, Abouk, Nystrom, & Soofi, 2017). Our results suggest that female CEOs have to deal with additional challenges imposed by such activist investors and are more vulnerable than male CEOs to activists' efforts toward wielding power in the firm. These additional challenges can escalate and become a significant distraction for women CEOs, eventually undermining their leadership effectiveness.

Table 3
Propensity Score Matched Sample: Frequency of Activism

Variable	*N*	Mean
Activism		
Female CEOs	524	.11
Male CEOs	524	.06
Difference (Female CEOs − Male CEOs)		.05**
Activism number		
Female CEOs	524	.12
Male CEOs	524	.08
Difference (Female CEOs − Male CEOs)		.04**

Note. We create a matched sample of female CEO firm years to male CEO firm years using propensity score matching procedure. The propensity score is estimated as a function of all control variables from Table 2. We match using the nearest neighbor within a .01 caliper (distance).
** $p < .01$.

Our results support the "glass cliff" proposition that women executives receive more scrutiny and face more challenges than men in similar positions (Ryan & Haslam, 2005). As noted, some have argued that women are more likely to be selected for "precarious leadership positions" that have a greater risk of failure than men (Ryan & Haslam, 2007, p. 549), although our analysis did not support this proposition. We found, even after controlling for the precariousness of the leadership position (using control variables as well as accounting for potential sample selection bias through propensity score matching and instrumental variable analysis), that women CEOs had a greater likelihood of being targeted by activist investors. Stated more directly, activist investors are more likely to tell female CEOs compared to male CEOs how to manage the firm, even though (statistically) female-led and male-led firms are performing similarly. Thus, although more research is needed, women executives appear to encounter hurdles not faced by men: They face more public display of dissatisfaction and (unwanted) direction, at least from activist shareholders, regardless of the firm's performance.

Our findings extend the limited research on shareholder activism, which is generally presumed to be gender-neutral rational action motivated by the goal of maximizing return on investment (Gillan & Starks, 2007; Goranova & Ryan, 2014). Specifically, the finding that female-led firms face greater threat of shareholder activism compared to male-led firms points to insidious gender biases in shareholders' decision to direct management efforts. As such, our results suggest that CEO gender may be a crucial, yet neglected, aspect of shareholder activism deserving greater attention going forward. Shareholder activism has emerged as a fertile area of academic inquiry over the past few years (Gillan & Starks, 2007), and we hope our investigation adds a new dimension to recent efforts toward understanding drivers of investor activism (Goranova & Ryan, 2014).

Table 4
Two-Stage Instrumental Variable Regressions

	1st stage regression		2nd stage regression			
	Female		Activism		Activism number	
Variable	Estimate	*SE*	Estimate	*SE*	Estimate	*SE*
Intercept	−2.05**	.31	−.86**	.14		
Ln (Firm Size)	−.03	.02	−.11**	.02	−.10**	.02
Profitability	−.54	.29	−.51*	.23	−.45*	.22
Leverage	−.03	.12	.29**	.10	.30**	.09
Dividend Yield	−1.52	1.94	−3.38*	1.47	−3.41*	1.41
HHI	−1.43	1.64	.05	.66	−.14	.66
Outside Female Exposure	1.39**	.52				
Female$			2.73**	.87	2.82**	.85
Observations	9,943		8,612		8,612	
Pseudo R-squared	.09		.03		.02	
Likelihood ratio	209.69**		59.37**		54.04**	

Note. HHI = Herfindahl-Hirschman index. The dependent variable in the first stage regression is *Female*, an indicator for the CEO being a female. The instrumental variable we use is *Outside female exposure,* the proportion of the board that sits on another board that has a female director or a female CEO. In the second stage regression, *Female*$ is the fitted value taken from the first stage regression. In Model 2, the dependent variable is *Activism*, an indicator variable that takes the value one for a firm if, in a given year, at least one Schedule 13D filing is lodged with the SEC. In Model 3, the dependent variable is *Activism number*, a count variable that equals, for a firm in a given year, the number of unique activists filing a Schedule 13D with the SEC. Standard errors are clustered at the CEO level.
* $p < .05$. ** $p < .01$.

The practical implications of our inquiry are worth mentioning here. We hope the results of our investigation will alert managers, investors, and policymakers that the insidious influence of gender stereotyping may bias activism decisions even without any conscious awareness on the part of the activists. Fiske (1993) argued that for stereotyping-based prejudice, it is the social structure more than individual actors that produces gender bias. Thus, eliminating gender bias from the activism process will require altering the social structure, perhaps by emphasizing the achievements of successful women CEOs so as to reduce the perceived role incongruity of women and leadership, as well as by increasing awareness of how gender stereotypes influence investors' decisions.

Limitations and Directions for Future Research

Our study has limitations, some of which suggest further research. First, while our results are consistent with role congruity theory (Eagly & Karau, 2002), we did not measure the actual cognitive and affective processes that led activist investors to confront female CEOs more than male CEOs. Notably, research on shareholder activism rarely, if ever, investigates the underlying processes shaping the CEO–investor interface (Goranova & Ryan, 2014), probably because of a lack of access to relevant data (Gillan & Starks, 2007). Yet, directly studying activism processes could enrich our understanding of why activist investors threaten women CEOs more than male CEOs and help us deal better with the implicit biases therein.

Second, our research was not designed to capture possible gender differences in the private advice or counsel that CEOs get from investors via letters, emails, meetings, phone calls, and ongoing conversations (Becht, Franks, Mayer, & Rossi, 2010). There is some evidence that private activism, or "quiet diplomacy" (Thompson & Davis, 1992), may be quite potent as CEOs respond to investors' demands behind-the-scenes to avoid public embarrassment or pressure (Hadani, Goranova, & Khan, 2011). Based on our results, we expect that female CEOs receive more strategic direction and advice from activist investors than male CEOs, although research is needed to test this proposition. Whether female CEOs receive more private activism than male CEOs, as role congruity theory would suggest, seems worthy of further investigation.

Third, the threat of shareholder activism does not originate in a vacuum, as investors operate within a web of other external stakeholders (e.g., financial analysts, media, and regulators), which we did not examine. Given the public visibility surrounding activism efforts (Gillan & Starks, 2007), attention to reactions from other stakeholders as well as the financial markets to gender differences in activism threat is an interesting topic for future inquiry.

Finally, SEC rules require investors to reveal their ownership and publicly declare their intentions at the 5% ownership mark, but such thresholds are different in other countries (e.g., 3% in the United Kingdom and 10% in France and Germany; Katelouzou, 2015). Furthermore, gender stereotypes also vary considerably across countries, with some countries endorsing more traditional stereotypes than others (Wood & Eagly, 2002). Thus, the generalizability of our findings to other countries cannot simply be assumed, but needs to be empirically examined.

Conclusion

The popular press has raised concerns that activists may be "singling out" women CEOs because of "subconscious perceptions and cultural attitudes" shaping decisions about which firms to target (Fairchild, 2015; Sorkin, 2015). So far, such concerns are based on anecdotal evidence or conjecture. Our research provides theoretical grounding to these concerns (in the form of role incon-

gruity theory), links them with ongoing conversations about the glass cliff phenomena (Ryan et al., 2016), and obtains robust and rigorous evidence in support. We find that women CEOs face greater threat from activist investors than male CEOs. Broadly speaking, our results show that even at the highest organizational level, women have different, and more challenging, experiences at work than men. Such results are troubling and call for additional inquiry into how to eliminate, or at least reduce, gender biases in top leadership positions.

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