

The Double-edged Nature of Board Gender Diversity: Diversity, Firm Performance, and the Power of Women Directors as Predictors of Strategic Change

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Abstract

Diverse boards have been seen as providing impetus for initiating change. However, diversity may introduce conflict and impede decision-making, which could hinder the ability of the firm to make strategic change, especially in times when firm performance is low. Integrating threat-rigidity theory and team diversity research, we examine how board gender diversity, firm performance, and the power of women directors interact to influence the amount of strategic change. Results support a three-way interaction, indicating that when the board is not experiencing a threat due to low firm performance and women directors have high power, the relationship between board gender diversity and amount of strategic change is the most positive. However, when the board is threatened by low firm performance and women directors have high power, the relationship between board gender diversity and amount of strategic change is the most negative. Results suggest that diversity is double-edged in nature because it can propel or impede strategic change depending on firm performance and the power of women directors.

As the number of women on boards of directors grows (Catalyst, 2012), it is important to understand how board gender diversity influences firm strategy. Firm actions such as strategic change are a reflection of the characteristics of the strategic leaders (including the board of directors) governing the firm and making sense of their environment based on their previous experiences (Boeker, 1997; Golden and Zajac, 2001; Westphal and Bednar, 2005; Westphal and Fredrickson, 2001; Wiersema and Bantel, 1992). Despite the increased attention that board gender diversity has received in recent years (e.g., Adams and Ferreira, 2009; Miller and Triana, 2009; Peterson and Philpot, 2007), there is still much work to be done in order to understand how and when board gender diversity influences the board and the firm.

Findings regarding the relationship between board gender diversity and organizational outcomes are inconsistent, with some findings being positive (Carter, Simkins, and Simpson, 2003; Erhardt, Werbel, and Shrader, 2003), some negative (Shrader, Blackburn, and Iles, 1997), and some non-significant (Dwyer, Richard, and Chadwick, 2003; Miller and Triana, 2009), highlighting both the positives and negatives of gender diversity on the board. In the present study, we focus on strategic change, or the attempts made by firms to align themselves with their environment to try and maintain a competitive advantage (Hofer and Schendel, 1978; Miller, 1991; Van de Ven and Poole, 1995).

Investigating strategic change is important for two reasons. First, while no research to date has examined board gender diversity as a predictor of strategic change, previous research has shown that firm actions such as strategic change are a function of the firm's strategic leaders, including the board members who govern the firm (Golden and Zajac, 2001; Goodstein, Gautam, and Boeker, 1994), and of the demographic characteristics of those leaders (Finkelstein and Hambrick, 1990; Wiersema and Bantel, 1992). This study addresses one demographic factor, namely gender, on boards. Second, while prior work has acknowledged the role of board members in influencing strategy (Daily, Dalton, and Canella, 2003; Deutsch, 2005), relatively little is known about what board characteristics influence changes in the firm's strategy. When boards are demographically diverse (i.e., heterogeneous), they should be able to provide diverse information and knowledge to direct the firm (Geletkanycz and Hambrick, 1997; Goodstein et al., 1994). However, there may be critical political factors that can affect a diverse board's ability to impact

strategic change.

One potentially critical moderator that has received little attention with respect to board diversity is the role of director power. Based on what we know about power, or the ability of individuals to exert their will (Finkelstein, 1992; French and Raven, 1959), not all directors have the same level of influence on the firm's strategy. While managerial perspectives on strategic change have been explored extensively (see Rajagopalan and Spreitzer, 1997), the political context in which these decisions are made has received little attention. This area warrants attention because power affects both the movement and the adoption of ideas in organizations and teams (Bunderson, 2003; Lawrence, Mauws, Dyck, and Kleysen, 2005; Van der Vegt, de Jong, Bunderson, and Molleman, 2010). As a result, power may be an important (yet missing) moderator in the literature on board gender diversity.

The purpose of this study is to examine the power of women directors and firm performance as moderators in the relationship between board gender diversity and strategic change. We use threat-rigidity theory (Staw, Sandelands, and Dutton, 1981) and the team diversity literature (e.g., Horwitz and Horwitz, 2007; Mannix and Neale, 2005; Webber and Donahue, 2001; Williams and O'Reilly, 1998) to explain the impact of firm performance on diverse boards. Threat-rigidity theory maintains that individuals, groups, and organizations demonstrate restriction of information processing and constriction of control when they are threatened. Thus, boards will usually be motivated to restrict information and centralize authority during times following low firm performance in order to simplify decision-making (Gladstein and Reilly, 1985; Staw et al., 1981). However, gender diversity on boards may lead to greater expression of ideas, especially when women have power. Research has not yet uncovered how gender diversity may influence the board in times of threat following low firm performance, when there are opposing pressures for expression and constriction of ideas. Moreover, we do not know what happens when women on boards gain power. Both firm performance and the power of women directors are potential moderators that likely influence decision-making in gender diverse boards.

We examine firm performance and the power of women directors as moderators of the relationship between board gender diversity and strategic change. It is important to examine the role of

firm performance because, particularly during uncertain times (e.g., after periods of low performance) when the potential for conflict is high and information-processing capacity is constrained (Staw et al., 1981), the effects of board diversity on business strategy are more pronounced (Daily et al., 2003; Westphal and Bednar, 2005). We also examine the power of women directors because having power makes people more likely to express their opinions and better able to exert their will (Finkelstein, 1992; Ragins and Sundstrom, 1989; Van der Vegt et al., 2010).

This study builds upon previous research in several ways. First, it makes a theoretical contribution to the theory of threat rigidity (Staw et al., 1981) as well as to the strategic management literature by examining the effects of board gender diversity and the power of women directors in a threat context (i.e., the threat of low firm performance). While many studies have tested threat-rigidity theory in response to threatening situations (e.g., D'Aunno and Sutton, 1992; D'Aveni, 1989; Gilbert, 2005, 2006; Greve, 2010; Griffin, Tesluk, and Jacobs, 1995; Griffith, 2004; Olsen and Sexton, 2009; Palmer, Danforth, and Clark, 1995; Shimizu, 2007), none of these studies examined diversity or power. As the number of women directors rises and women gain more powerful roles on boards, research should examine how diversity affects firm outcomes during times of threat. Sometimes, gender diversity creates conflict that may have negative effects for teams (Mannix and Neale, 2005; Williams and O'Reilly, 1998). Thus, we test how the effect of board gender diversity on amount of strategic change is modified depending on the power of women directors and firm performance, demonstrating that threat-rigidity effects on boards can be magnified by both the power of women directors and firm performance.

Second, we contribute to the strategic change literature by showing how the power of women directors influences strategic change. Power dynamics are important because organizations are political. Power affects the movement and adoption of ideas (Lawrence et al., 2005), which may affect the amount of strategic change made by an organization. While research has recognized the effects of power on the board as a whole, scholars have noted that power among board members affects their degree of participation and influence in group decision-making (Finkelstein and Mooney, 2003; Golden and Zajac, 2001; Westphal and Zajac, 1995). Therefore, it is untenable to assume that all members of diverse boards

will have equal influence on firm strategy. Yet, the effect of power on the relationship between board gender diversity and strategic change has not been tested.

Third, this paper makes an empirical contribution to the corporate governance literature by studying what kinds of boards are able to create change in the face of low firm performance.¹ While studies have previously investigated the role of heterogeneous boards, the roles of gender and power are often left unexplored. Examining the power of women directors may explain why some firms experience benefits from gender diverse boards while others do not.

Theory Development

Strategic Change and the Board of Directors

Strategic change is a firm's response to the recognized need to change and adapt to the environment (Brown and Eisenhardt, 1998; Carpenter, 2000). Hofer and Schendel's (1978: 46) work on the strategy formulation process describes strategic change as a "special kind of problem-solving process for defining an organization's strategy," which includes an analysis of the environment and its resources as well as a discussion of strategic alternatives, an evaluation of these alternatives, and a final choice. Because firms make strategic choices, scholars have investigated how a firm's internal environment influences change, including the effects of strategic leaders as antecedents of strategic change. A number of studies have found that executive succession, Chief Executive Officer (CEO) pay, and top management team diversity can influence change (Boeker, 1997; Carpenter, 2000; Cho and Hambrick, 2006; Fondas and Wiersema, 1997; Quigley and Hambrick, in press; Wiersema and Bantel, 1992). In addition, some studies have investigated the effect of board dynamics and composition on strategic change (Geletkanycz and Hambrick, 1997; Goodstein et al., 1994; Westphal and Frederickson, 2001).

The board of directors plays a critical role in changing (or not changing) the direction of the firm because it consists of leaders who influence a firm's strategy (Goodstein et al., 1994; Pearce and Zahra,

¹ We would like to thank an anonymous reviewer for suggesting this helpful wording with which to frame our study.

1992; Westphal and Bednar, 2005; Westphal and Fredrickson, 2001). Boards help govern firms, especially during difficult times (Daily et al., 2003; Goodstein and Boeker, 1991). Deutsch's (2005) meta-analysis found that board composition impacts critical firm decisions. Studies have also found that board characteristics are an antecedent of firm-level outcomes. For example, there is evidence that board human capital influences strategic change (Haynes and Hillman, 2010) and that board demographics influence a firm's strategic persistence (Westphal and Bednar, 2005).

Studies also show that the presence of women directors is an antecedent of firm outcomes. Research suggests that gender diversity may benefit the firm through the unique resources, expertise, and strategic advice of women directors (Bilimoria and Wheeler, 2000; Hillman, Shropshire, and Cannella, 2007; Miller and Triana, 2009). Torchia, Calabro, and Huse (2011) show that having three or more women on boards positively influences firm innovation through board strategic tasks. Torchia and colleagues (2011) define strategic tasks as the involvement of the board in making proposals and decisions on long-term strategy and goals, putting those strategies and goals into action, and controlling follow-up decisions on those strategies and goals. Their findings show that having at least three women on the board is positively and significantly related to organizational innovation and that this relationship is fully mediated by board strategic tasks (Torchia et al., 2011). Therefore, the firm may prize diversity on the board as one way to improve decision-making.

However, not all findings are positive. Adams and Ferreira (2009) found that having women directors improved monitoring but that the effect of board gender diversity on firm performance was negative. Specifically, Adams and Ferreira (2009) found that the relationship between the fraction of female directors and firm performance was sometimes positive but usually negative, depending on which control variables were used in the analysis. When they examined an interaction effect between the fraction of female directors and governance quality predicting firm performance, findings showed that diverse boards add value in firms with weak governance. Adams and Ferreira concluded that gender-diverse boards appear to be tougher monitors. "Consistent with the idea that overmonitoring could decrease value, gender diversity does not add value on average. However, gender diverse boards appear to

be particularly valuable for firms with otherwise weak governance” (Adams and Ferreira, 2009: 307). Dobbin and Jung (2011) found that board gender diversity is negatively related to future stock price because investors respond negatively to the appointment of female board members. These findings suggest that board demographics influence future firm outcomes. However, consistent with research describing the double-edged nature of diversity, with some studies finding that diversity helps and others finding that it does not (e.g., Mannix and Neale, 2005), the findings are mixed. While the effects of board gender diversity on firm innovation are positive in multiple studies (Miller and Triana, 2009; Torchia et al., 2011), the effects of board gender diversity on firm performance are inconsistent and often negative (Adams and Ferreira, 2009; Dobbin and Jung, 2011).

We further this line of research on board diversity and firm outcomes by focusing on the role of two important moderators that impact the relationship between board gender diversity and strategic change. These moderators are the presence of threat (in the form of low firm performance) and power dynamics on the board. We shed light on the complex interaction of board gender diversity, firm performance, and power as these relate to strategic change. Consistent with the double-edged nature of diversity, we predict that board gender diversity may propel or impede strategic change depending on the level of threat the firm faces (i.e., low performance) and the power dynamics within the board.

The Impact of Board Gender Diversity on Strategic Change

Because strategic change has been defined as a problem-solving process (Hofer and Schendel, 1978), we expect that diverse teams in the process of implementing strategic change will exhibit similar dynamics to those reported by diverse teams executing other tasks. Boards of directors are a specialized type of team because members are interdependent and share a common goal (Forbes and Milliken, 1999; Kozlowski and Bell, 2003). Research on diverse teams has illustrated the double-edged nature of diversity (Mannix and Neale, 2005). For example, while diverse teams should produce a broader range of ideas and information because they contain a diverse body of knowledge (Amason and Sapienza, 1997; Milliken and Vollrath, 1991; Schweiger, Sandberg, and Ragan, 1996), diversity may also impede group decision-making (Miller, Burke, and Glick, 1998) due to conflict (Jehn, Chadwick, and Thatcher, 1997; Mintzberg,

1983) and difficulty in making decisions (Goodstein et al., 1994). Reviews and meta-analyses of all types of teams (not just boards of directors) generally show a small negative relationship between gender diversity and both team cohesion, or the emotional attraction between group members (Hogg, 1992), and team performance (Horwitz and Horwitz, 2007; Mannix and Neale, 2005; Webber and Donahue, 2001; Williams and O'Reilly, 1998).

Research on boards suggests that board diversity may hinder strategic change. Work by Miller et al. (1998) found that cognitive heterogeneity among executives inhibited rather than promoted long-term planning. The authors reasoned that because heterogeneity produces a number of divergent opinions, executives were more likely to disagree and have difficulty in settling on a course of action, thus inhibiting the ability to catalyze change. This finding is consistent with reviews of team diversity, which have demonstrated that surface-level diversity, including gender diversity, can cause issues with cohesion as well as cooperation and can lead to conflict that may impact team decision-making (Webber and Donahue, 2001; Williams and O'Reilly, 1998).

We propose that this effect can also be extended to gender diversity on boards of directors. Because prior experiences and cognitions may vary as a function of demographics (Milliken and Martins, 1996; Robinson and Dechant, 1997), gender diversity on the board of directors should translate into a diversity of perspectives in the group. On the one hand, the value in diversity hypothesis (Cox, Lobel and McLeod, 1991) maintains that a key advantage of team diversity is that diverse groups should provide a broader range of knowledge, information, and perspectives compared to homogenous groups. Diverse teams generate more creative solutions than do homogenous teams (Jackson, 1992; Triandis, Hall, and Ewen, 1965). Diverse boards have also been linked to more innovation (Miller and Triana, 2009; Torchia et al., 2011). This suggests that strategic inertia is less likely due to the diversity of information. On the other hand, a more extensive decision-making process takes longer, which may explain why it takes diverse teams more time to ramp up to the performance levels of homogenous teams (Watson, Kumar, and Michaelsen, 1993). The volume of information and choices discussed by a gender-diverse team could potentially impede the team's ability to reach consensus, which would restrict the ability of diverse teams

to generate change. Both qualitative (Williams and O'Reilly, 1998) and meta-analytic reviews of teams have shown a weak negative effect between gender diversity and both team cohesion and team ability to perform well and make decisions (Horwitz and Horwitz, 2007; Webber and Donahue, 2001). Given that boards are a type of team, we expect to find a small negative relationship between board gender diversity and amount of strategic change. We therefore propose the following:

Hypothesis 1: Board gender diversity will be negatively related to amount of strategic change.

The Moderating Role of Firm Performance

We propose that the impact of board gender diversity on amount of strategic change may vary depending on the level of threat a firm faces. Low firm performance represents a threat for organizations and has been linked to managerial actions such as using task forces (Miller and Friesen, 1980), information gathering, and decision-making search processes (March and Simon 1958; Simons, 1994). Threat-rigidity theory (Staw et al., 1981) predicts that during times of stress, individuals, groups, and organizations will behave in more rigid ways and will typically restrict information processing and narrow their field of attention to simplify the amount of information to be processed (Gladstein and Reilly, 1985). In addition, when a threat occurs, there is likely to be a constriction of control whereby power, influence, and decision-making are concentrated at the highest levels of the group or organizational hierarchy. Research has tended to support threat-rigidity theory. For example, constriction of information and centralization of decision-making authority at the top has been shown in declining firms (D'Aveni, 1989), decisions to retain or divest acquired units (Shimizu, 2007), hospitals (Palmer et al., 1995), schools (Griffin et al., 1995; Griffith, 2004; Olsen and Sexton, 2009), the newspaper industry (Gilbert, 2005, 2006), and drug abuse treatment organizations (D'Aunno and Sutton, 1992). There is also evidence that larger firms are more rigid (Greve, 2010).

We propose that the relationship between board gender diversity and strategic change will be moderated by firm performance. In particular, it will be easier for homogenous boards to make decisions and increase the amount of strategic change following low firm performance. When firm performance is low, decision-makers often seek the advice of those who may espouse the same philosophies and values

in order to make decisions (Staw et al., 1981). Threat-rigidity theory proposes that during times of threat, decisions may be made as a result of applying pressure toward uniformity and restricting information (Staw et al., 1981). Although homogenous groups are subject to threat-rigidity effects when firm performance is low, they also have higher levels of cohesion than do diverse groups (Webber and Donahue, 2001) and will therefore make faster decisions because it is easier to come to a consensus. By contrast, diverse teams report more difficulty in agreeing and taking longer to perform (Watson et al., 1993). The greater the team diversity, the more difficulty the team may have in reaching a decision (Miller et al., 1998). We acknowledge that it is possible for board gender diversity to reduce cohesion, which could make the probability of strategic change higher if a decrease in cohesion makes it easier for teams to input new information (Staw et al., 1981). However, most research on teams during times of threat suggests that teams respond with greater rigidity. While a few studies examining responses to threat have found no support for threat-rigidity (e.g., Ketchen and Palmer, 1999), the majority of studies report that teams become more rigid in response to threat (e.g., D'Aunno and Sutton, 1992; D'Aveni, 1989; Gilbert, 2005, 2006; Greve, 2010; Griffin et al., 1995; Griffith, 2004; Olsen and Sexton, 2009; Palmer et al., 1995; Shimizu, 2007).

This is consistent with evidence that team diversity “may become particularly salient when the board of directors confronts the complex and ambiguous issues that surround strategic decisions” (Goodstein et al., 1994: 243). In addition, the greater the uncertainty, the more likely a decision will be an “outcome of behavioral factors rather than a mechanical quest for economic optimization” (Hambrick and Mason, 1984: 194). Because most evidence indicates that teams performing under threat will behave more rigidly, we propose that low firm performance accentuates problems due to board diversity, thus outweighing any gains from informational diversity. Therefore, we propose the following.

Hypothesis 2: The negative relationship between board gender diversity and amount of strategic change will be moderated by firm performance. Board gender diversity will have a stronger negative impact on amount of strategic change when firm performance has been low.

The Importance of Power

The political context in which decisions are made on boards should be considered in the relationship between board gender diversity and strategic change because the power of women directors affects their ability to influence decision-making. Power represents the ability to exert influence and have others do one's will (Finkelstein, 1992; French and Raven, 1959) because it influences collective outcomes, including decision-making, learning, and inclusion (Blackler and McDonald, 2000; Fiol, O'Connor, and Aguinis, 2001; Van der Vegt et al., 2010). Finkelstein's (1992) empirical study of the power of top managers in three industries showed that power is correlated with strategic choice. Thus, power influences strategic decision-making.

Different forms of power. Power may be demonstrated in different forms. Finkelstein (1992) established four types of power: structural, ownership, expert, and prestige, each of which is pertinent to the board of directors. Structural power is rooted in formal position and hierarchical authority and indicates the human capital required for the job. Structural power within the organization's hierarchy is visible (Brass and Burkhardt, 1993) and has been found to be a major determinant of power (Hambrick, 1981). Structural power may manifest itself through factors such as the number of formal titles the director has on the board (Daily and Johnson, 1997; French and Raven, 1959). Ownership power is linked to equity ownership as well as founder status (Daily and Johnson, 1997). Ownership power ensues when an executive can represent the will of the shareholders. Expert power develops when an executive exhibits keen judgment while managing an uncertain environment (Finkelstein, 1992). Expert power can develop as a result of having exposure to many different functional areas and a breadth of assignments (Bunderson, 2003; Daily and Johnson, 1997; Van der Vegt and Bunderson, 2005) as well as through organizational tenure or years of experience, indicating the task and job knowledge of the director (Bunderson, 2003; Combs, Ketchen, Perryman, and Donahue, 2007; Finkelstein and Mooney, 2003). Finally, prestige power develops from one's institutional environment based on personal prestige or status, reputation, and perceptions of influence (Finkelstein, 1992). Prestige power may develop as a result of having a position on one or more boards, serving on influential committees, or having attended

elite educational institutions (Daily and Johnson, 1997; Finkelstein, 1992), suggesting a level of knowledge and connections.

Gender diversity and power. Research on power and gender explains how societal, organizational, and individual forces often give women little ability to influence decisions and, as a result, their voices may hold little influence (Ragins and Sundstrom, 1989). In mixed-sex teams, men tend to speak more often, be more influential, and be seen as leaders more often than women (Lockheed and Hall, 1976). This has been replicated in many settings (Cleveland, Stockdale, and Murphy, 2000; Ritter and Yoder, 2004), including businesses (Benokraitis and Feagin, 1995), classrooms (Kimmel, 2000), and laboratory experiments (Ritter and Yoder, 2004). The power of women on boards should be examined because in teams with mixed-status individuals, the high-status individuals speak more and tend to exert influence over team discussions (Berger, Cohen, and Zelditch, 1972; Cleveland et al., 2000).

Three-way Interaction of Board Gender Diversity, Firm Performance, and the Power of Women Directors Predicting Strategic Change

Given the importance of power, we propose that the interactive effect of board gender diversity and firm performance on amount of strategic change will be further explained by the power of women directors. Consistent with diversity research that has discussed the double-edged nature of diversity (Mannix and Neale, 2005; Williams and O'Reilly, 1998), we propose that high power of women directors can propel or impede strategic change. Which way the process unfolds will depend upon firm performance and gender diversity on the board. When firms are performing well, we suggest they are more open to diverse perspectives.

When firm performance has been high and the power of women directors is also high, we predict the greatest positive effect of board gender diversity on amount of strategic change. When the firm has performed well, there is less impetus to restrict out-group members and the increased power of women directors should facilitate the inclusion of their ideas. In addition, after periods of high firm performance, board members are not threatened and should have the capacity and open-mindedness to explore new opportunities (Staw et al., 1981). Therefore, when the firm performs well and women have power, gender

diversity may reduce cohesion (Webber and Donahue, 2001), prompting the board to explore ideas and not prematurely close on alternatives, which should stimulate strategic change. The reasoning for this is twofold. First, the power of women directors gives them the ability to exert influence (Finkelstein, 1992; Ragins and Sundstrom, 1989). In general, women have low power as a group because of their lower status in society and differences in experience, social connections, and other resources (Benokraitis and Feagin, 1995; Glick and Fiske, 1996; Ragins and Sundstrom, 1989). However, as the power of women directors on boards increases, their influence may override their lower social status as they have more power to effect change. Second, powerful people tend to be more vocal (Cleveland et al., 2000), and as women on boards speak out and offer more information diversity, this can have advantages for teams provided these teams are ready to receive that information. Information diversity should lead to better decision-making as more perspectives and alternatives are considered. This is consistent with the informational perspective of team diversity, which shows that diverse groups tend to produce higher quality and more creative decisions on complex tasks than do homogenous groups (Amason, 1996; Hambrick and Mason, 1984; Hoffman and Maier, 1961).

However, during times following low firm performance, we predict that high power of women directors will yield the most negative relationship between board gender diversity and amount of strategic change. Threat-rigidity theory (Staw et al., 1981) suggests that when decision-makers are threatened, they feel pressure to restrict information processing by relying on their internal hypotheses and prior expectations about how things ought to be. Groups under pressure or threat often reduce their flexibility, discourage new information, and control deviant thinking, which causes them to favor homogeneity and exclude those with divergent views (Staw et al., 1981). As a result, differences in a diverse board are likely to be magnified by the urgency to act. Thus, following poor firm performance, firms are pressured to narrow their decision-making search processes. However, when the team is diverse, it is likely to have more difficulty in making decisions because their taken-for-granted assumptions and internal hypotheses (Staw et al., 1981) are less likely to match. These effects intensify when the power of women directors is high because the potential to disagree increases as women have power to voice their diverse viewpoints.

Asserting influence on the decision when there is pressure to reduce minority perspectives can create conflict and information overload (Staw et al., 1981). Gender research has shown that given subordinate or equal status, women generally play a more supportive role than men do and are more likely to yield their position if that suits the demands of the situation (Ragins and Sundstrom, 1989). When the women on the board are more powerful, they are less likely to be excluded by themselves or by others. These opposing forces of needing to agree on a course of action and having powerful women who assert diverse views should lead to greater difficulty in reaching a decision and exacerbate conflict within diverse groups during times of urgency following low firm performance (Carpenter and Fredrickson, 2001; Milliken and Martins, 1996; O'Reilly, Snyder, and Boothe, 1993). In such instances, the board may become inert because it must now consider diverse views, even if it means becoming overloaded with information at a time when the board needs to act quickly (Staw et al., 1981). As a result, dynamics may become dysfunctional, making the board less capable of agreeing on changes in strategy (Carpenter and Fredrickson, 2001) because conflict hinders team productivity (De Dreu and Weingart, 2003). Therefore, we propose that the potential for challenges that inhibit strategic change will be highest on boards where gender diversity is high, the board is threatened due to low performance, and the power of women directors is high.

We further posit that this phenomenon will hold regardless of which kind of power the female directors have. All four types of power investigated in this study (structural, prestige, expert, and ownership) give directors the ability to legitimize strategic alternatives, make decisions, and define the future of the organization (Finkelstein, 1992; Lawrence et al., 2005). For example, powerful directors may dominate discussions and limit both the firm's and the CEO's ability to receive feedback or advice from less powerful directors (de Jong, Van der Vegt, and Molleman, 2007; Finkelstein and Mooney, 2003). Further, less powerful directors may be silent because they are uncertain whether their views will be valued and they may feel that their speaking up will not affect a decision (Finkelstein and Mooney, 2003; Milliken, Morrison, and Hewlin, 2003). It is also possible that the views of less powerful directors are not considered as much as the views of more powerful directors (Quigley and Hambrick, 2012).

Power signals a level of knowledge and/or the ability to influence decisions (Lawrence et al., 2005; Pfeffer, 1981), and each of the four types of power can be effective at signaling that a director is knowledgeable or in a position to effect change. Therefore, we propose the following:

Hypothesis 3: There will be a three-way interaction between board gender diversity, the power of women directors, and firm performance on strategic change. When the power of women directors and firm performance are both high, board gender diversity will have the most positive effect on amount of strategic change. When the power of women directors is high and firm performance is low, board gender diversity will have the most negative effect on amount of strategic change. This will be true for structural power (H3a), prestige power (H3b), expert power (H3c), and ownership power (H3d).

Method

We use a sample of *Fortune 500* firms to explore the linkages between board gender diversity, power of women directors, firm performance, and strategic change. To be included in the sample, firms had to be continuously listed in COMPUSTAT (without being acquired by another company) as well as active and publicly traded between 2002 and 2004. These criteria resulted in a sample of 462 firms.

Independent Variables

Board gender diversity. Data for women on boards were gathered from the Investor Responsibility Research Center (IRRC) for 2002. *Board gender diversity* was measured using Blau's (1977) index of heterogeneity ($1 - \sum \rho_i^2$), where ρ_i is the proportion of group members in each of the i number of categories. Blau's index is commonly used to measure diversity for categorical variables (Bantel and Jackson, 1989) and has been recommended by experts in the area of diversity (Harrison and Klein, 2007). Researchers who theorize diversity as variability among group members (as we do) should choose an operationalization of diversity that represents variability (Harrison and Klein, 2007). Thus, Blau's index is used to obtain a relative measure of diversity that is not skewed in favor of either gender. For board gender diversity, Blau's index can range from 0 when there is only one gender on the board to

0.50 when there are equal numbers of men and women.

Power of women directors. We focus on power as the ability of women on the board to influence decisions, operationalized according to Finkelstein's (1992) dimensions: structural, prestige, ownership, and expert power. We calculated power of women directors in these four different dimensions. The data were gathered from Risk Metrics, Corporate Library, and proxy statements for 2002. The mean power of all women on the board was used to measure absolute power of women. The mean is the most common approach to measuring team composition variables (e.g., Heslin, 1964), and it is theoretically meaningful in our study because it represents how powerful the minority group is on average (Kanter, 1977).

Structural power was proxied as the average number of publicly documented board titles held by women on the board (Finkelstein, 1992; Udueni, 1999). While directors may have many informal roles on a board, titles published in proxy statements to shareholders, potential investors, and regulatory bodies publicly legitimize the director's role and the power that accompanies these titles. *Prestige power* was measured as the average number of high-status board committees to which women directors are assigned (Udueni, 1999). Research suggests that committee membership affects the power and influence each director may have on the firm (Finkelstein, 1992; Kesner, 1988). The audit, nominating, compensation, and executive committees were coded as high-status committees because they are the most frequently used across companies and are an important tool for monitoring and reporting corporate activities (Braiotta and Sommer, 1987; Kesner, 1988). These committees afford prestige that sends signals about how powerful the director is and may suggest positive signs of her qualifications, experience, networks, and education. *Ownership power* was measured as the average percentage ownership of the firm's outstanding common stock held by women directors (Combs et al., 2007; Daily and Johnson, 1997; Finkelstein, 1992; Udueni, 1999) as directors with large shareholdings are likely to influence the board (Daily and Johnson, 1997).

Expert power was measured as experience as business experts, community influentials, support experts, and insiders, because these experiences help develop expertise, an important resource when the board faces uncertainty (Hillman, Cannella, and Paetzold, 2000; Peterson and Philpot, 2007). Board

members are often selected based on their specialized competencies, skills, and knowledge, and this expertise is given more weight during decision-making (Bonner, Baumann, and Dalal, 2002; Forbes and Milliken, 1999; Hillman et al., 2000). Following Hillman et al. (2000) and Peterson and Philpot (2007), the amount of business expertise, community influential expertise, support specialist expertise, and insider expertise as of 2002 was coded using the biographical profiles of directors collected from Corporate Library and supplemented with profiles within proxy statements or annual reports if missing. Business expertise reflects the knowledge and capability for managing large organizations and was coded as the sum of two dichotomous variables indicating whether a director had experience as CEO or top executive at a for-profit firm and whether the director served on the board of a for-profit firm (Hillman et al., 2000). Community influential expertise yields knowledge of key matters important to stakeholders within the community and was coded as the sum of dichotomous variables indicating whether the director held a position in political office, as a clergy member, college or university leader, and/or as a leader of a nonprofit organization, foundation, or cultural organization. Experience as a support specialist, providing specialized advice in law, banking, and other areas, was coded as the sum of dichotomous variables indicating whether the director held a position within the area of banking, insurance, law, public relations, consulting, or in a government agency. Insider expertise reflects the unique and specific knowledge that top executives have about the focal firm, its strategy, and industry dynamics, and was coded using a dichotomous variable representing whether the director is a current or former executive of the firm. Our expert power measure is a formative construct (Coltman, Devinney, Midgley, and Venaik, 2008) in the sense that it is a composite of several other indicators that are not necessarily correlated. For example, one would not expect the same director to be both a lawyer and a clergy member.

In all, we coded biographies for 5,588 directors (all directors in our sample of 462 firms). Two independent raters who were blind to the hypotheses coded the data. Both coders received training on the coding sheet and then cross-coded several biographies for practice. After two rounds of practice coding and having received feedback on their coding, the primary coder proceeded to code all 5,588 director biographies while the secondary coder coded half of the rows (2,794 rows). Inter-rater reliability was

computed on the 2,794 rows that were cross-coded. Average agreement across the 11 dimensions coded was 94% (with a range of 85% to 99%). Average Cohen's Kappa (Cohen, 1960), a measure of inter-rater agreement with chance excluded, was .87 (with a range of .70 to .99). This represents a high level of agreement (Enginsu, Dumoulin, Pieters, Bras, Evers, and Geraedts, 1991). When disagreements between the coders occurred, the corresponding author coded the biography in question to break the tie.

Firm performance. Firm performance was operationalized as accounting-based performance because our theory is based on strategic leaders' responses to past and present performance, and because historically, scholars have suggested that prior accounting performance rather than prior market performance is preferred when studying the adaptive effects of performance on the firm's current actions (Keats and Hitt, 1988). Accounting-based measures of performance have been used extensively in studies investigating the impact of prior performance on strategic change (e.g., Barker and Duhaime, 1998; Carpenter, 2000; Wiersema and Bantel, 1992; Zajac and Westphal, 1996; Zhang, 2006). Therefore, firm performance was measured as return on assets (ROA, measured as net income divided by total assets) averaged over the years 2000-2002 using data from COMPUSTAT.

Dependent Variable

Strategic change. Strategic change has been described as the "content of strategy, i.e., the specifics of what was decided in terms of goals, scope, and/or competitive strategy, and in terms of the process of strategy-making" (Ginsberg, 1988: 560). While some have investigated strategic change as alterations to a firm's product portfolio or internationalization, this approach may fail to detect smaller strategic changes or those made by single-business or non-internationalized firms (Ansoff, 1965; Ginsberg, 1988). Because our sample included both diversified and non-diversified single-business firms, a measure of strategic change proxied by resource allocations was used. This is consistent with definitions of strategy that entail the discretion of strategic leaders to adjust and renew resources to attain or sustain a competitive advantage (Chandler, 1962). Following previous research, the six strategic resource dimensions used were advertising intensity (advertising expense/net sales), research and development intensity (R&D expenditures/net sales), plant and equipment newness (net plant and equipment/gross

plant and equipment), non-production overhead (selling, general, and administrative expenses/net sales), inventory levels (inventories/net sales), and financial leverage (total debt/total assets) (Finkelstein and Hambrick, 1990; Zhang, 2006). A two-year time lag was chosen because a moderate lag detects both smaller strategic changes that occur soon after boards make decisions and changes that take longer to unfold (such as those associated with innovative product design) and because of differences in strategic management planning cycles. This lag is consistent with Park (2007), Geletkanycz and Hambrick (1997), Westphal, Seidel, and Stewart (2001) and others, who suggest that it takes around two years for strategic decision-makers to implement the appropriate changes. All data were collected from COMPUSTAT for 2002 and 2004.

Change scores were created for each of the six resource indicators described above by subtracting the 2004 resource level from the 2002 resource level for each of the six resource indicators. If firms had no change in resource levels, their change scores would show no difference over the two-year period. Because change is indifferent to the direction of the change, we used the absolute values of each of the change scores for the six resource indicators. Following previous literature (see Finkelstein and Hambrick, 1990; Zhang, 2006), because each of these change scores for the six resource indicators has a different unit of measurement and are to be combined into a single measure of strategic change, we created z scores for each of the change scores of the six resource indicators so that no single indicator would have a greater weight than any other.² Thus, to measure amount of strategic change, we averaged the standardized absolute value differences in each of the six resource indicators from 2002 to 2004.³

² Each firm may have either negative or positive values for strategic change depending on whether their average change in strategic resource indicators is above or below the mean. Zero therefore does not mean that no change was made.

³ Our measure, Finkelstein and Hambrick's strategic resource indicator, is one of the most common measures of strategic change. Still, because a number of studies have used product diversification and international diversification and some studies have used these together (e.g., Westphal and Fredrickson, 2001; Westphal and Bednar, 2005), we collected a second measure of strategic change operationalized as change in product diversification and internationalization diversification. Product diversification is measured using business segment data in 2002 and 2004 from COMPUSTAT and measured as

$$(\text{Product or International}) \text{ Diversification} = \sum_{j=1}^N S_j \ln(1/S_j),$$

Control Variables

We controlled for the following variables, as suggested by an extensive literature review: firm size, outsider ratio, CEO succession, slack, board diversity (age, tenure, and race), power of male directors, and industry. We also controlled for top management team (TMT) age and gender diversity.

Firm size. Hannan and Freeman (1984) suggest that as organizations grow, they become inert over time, impeding change. There is also evidence that larger firms are more rigid (Greve, 2010). Thus, we controlled for firm size, measured as the logarithm of total sales.

Outsider ratio. The percentage of outsiders on the board has been linked to the control and interests of the firm. As firms have more outsiders, the firm's insularity is lessened and more diverse perspectives outside of the management status quo may be considered (Goodstein and Boeker, 1991). Therefore, we controlled for outsider ratio as the ratio of the number of outside directors to the total number of directors.

CEO succession. Change in the managerial team, specifically the CEO, has been credited with catalyzing change because new CEOs may be able to lessen the inertia and power of political factions (Boeker, 1997; Goodstein and Boeker, 1991). A succession event occurs when the current CEO is different from the previous year's CEO. We used a dummy variable with values of 0 or 1, where 1 indicates that a succession event occurred in 2002. These data were obtained from COMPUSTAT Execucomp. Missing values were obtained through Board Analyst.

Slack. Literature suggests that financial resources positively influence amount of strategic change (Barker and Duhaime, 1998; Cho and Hambrick, 2006). Slack is important because strategic change requires resources that enable the firm to adapt and stay aligned with the environment. We measured

where S_j is the sales in segment j and N is the total number of segments in which the firm sells (Baysinger, Kosnik, and Turk, 1991; Hitt, Hoskisson, and Kim, 1997). International diversification is measured using international geographical segment data from COMPUSTAT, where the scope of international diversification is measured as the geographic dispersion of operations across countries (Barkema and Vermeulen, 1998; Tallman and Li, 1996), and the sales in each international geographical segment are used, consistent with prior literature (Hitt et al., 1997; Qian and Li, 2002). Strategic change was calculated as the mean z -score of change of product diversification and international diversification between 2002 and 2004. These data were available for 429 firms in our sample. Using this second measure of strategic change, we found that our results are consistent with those presented using the strategic resource indicators. The results using product and international diversification are presented in the Appendix.

slack as the logarithm of current assets divided by current liabilities.

Board diversity. To control for other sources of heterogeneity that may influence the amount of strategic change, we controlled for racial, age, and tenure diversity of board members. *Racial diversity* was measured using Blau's index of heterogeneity using data from IRRC and several external data sources including the Committee of 100's Asian Pacific American Corporate Board Report Card, the Executive Leadership Council's Census of African Americans on Boards of Directors, and the Hispanic Business Boardroom Elite Directory. These organizations compile the race of directors into four categories: Asian, Black, Hispanic, and White. *Age diversity* is measured as the standard deviation of the age of all directors, and *tenure diversity* as the standard deviation of the group's tenure (Boeker, 1997; Pegels, Song, and Yang, 2000).

Top management team (TMT) diversity. To control for the possible influence of TMT diversity on strategic change (Wiersema and Bantel, 1992), we controlled for TMT age diversity as the standard deviation of the age of TMT members and for TMT gender diversity as Blau's index of diversity. Both variables used data from Compustat Execucomp.

Power of male directors. To control for the influence of male directors on the board, the structural power, prestige power, expert power, and ownership power of male directors were measured using the same procedure described above for the power of women directors.

Industry. Industry dummy variables were used to control for the effect of industry dynamics on strategic change. Industry was defined by two-digit SIC codes. Because of the large number of industry dummy variables, coefficients are not reported.

Analyses and Results

The method used for the analyses was hierarchical linear regression. To avoid problems with multicollinearity when testing interactions, variables were centered (Aiken and West, 1991). Table 1 shows the means, standard deviations, and correlations among the variables in the study. Strategic change was significantly correlated with firm performance ($r = -0.15, p < 0.01$), gender diversity ($r = -0.15, p < 0.01$), and the structural ($r = -0.13, p < 0.01$), prestige ($r = -0.13, p < 0.01$), and expert power of women

directors ($r = -0.12, p < 0.01$), but not with ownership power ($r = -0.04, p > 0.05$).

Hypothesis 1 predicts that board gender diversity is negatively related to amount of strategic change. Table 2 presents the results of the multiple regression. Model 2 shows a negative main effect of gender diversity ($\beta = -0.10, p < 0.05$), supporting Hypothesis 1.

Hypothesis 2 predicts an interaction between board gender diversity and firm performance such that board gender diversity will have a stronger negative impact on amount of strategic change when firm performance is low. In Model 3 of Table 2, the effect of firm performance on strategic change is negative and significant ($\beta = -0.14, p < 0.05$), consistent with previous literature. In Model 4, we added the interaction term (Board Gender Diversity x Firm Performance), and contrary to Hypothesis 2, it was not significant ($\beta = -0.05, p > 0.05$).

Table 3 presents the regression models for testing Hypothesis 3a, which predicts a three-way interaction between firm performance, board gender diversity, and structural power of women directors on amount of strategic change. In Model 5, the centered main effects are added. In Model 6, the two-way interaction terms are added. In Model 7, the three-way interaction is added to the model, and it is significant ($\beta = 0.42, p < 0.05$). We plotted the interaction in Figure 1A using the Aiken and West (1991) procedure. To interpret the figure, recall that strategic change is an average of six standardized variables whereby a firm may have either negative or positive values for strategic change depending on whether their average change in strategic resource indicators was above or below the mean level of change for the sample. As predicted, we found that the most positive effect, or slope, of board gender diversity on amount of strategic change is observed when both firm performance and the structural power of women are high. In fact, in this situation, increases in gender diversity move the firm from having some of the lowest change in strategic resource indicators to having above-average change in resource indicators. The most negative effect of board gender diversity on amount of strategic change is observed when firm performance is low and structural power of women is high, supporting Hypothesis 3a.

Table 4 presents the regression models for Hypothesis 3b, which suggest a three-way interaction between firm performance, board gender diversity, and prestige power of women directors on amount of

strategic change. Model 10 of Table 4 shows that the coefficient for the three-way interaction is positive and significant ($\beta = 0.52, p < 0.05$). Figure 1B shows that the most positive relationship between board gender diversity and amount of strategic change occurs when both prestige power of women and firm performance are high. The most negative relationship between board gender diversity and amount of strategic change occurs when firm performance is low and prestige power of women is high. Therefore, Hypothesis 3b is supported.

Table 5 presents the regression models for Hypothesis 3c, which predicts a three-way interaction between firm performance, board gender diversity, and expert power on amount of strategic change. As seen in Model 13 of Table 5, the three-way interaction effect is significant ($\beta = 0.63, p < 0.05$). Figure 1C shows that the most positive relationship between board gender diversity and amount of strategic change is observed when both expert power of women directors and firm performance are high, while the most negative relationship is observed when expert power of women directors is high and firm performance is low. Therefore, Hypothesis 3c is supported.

Finally, Table 6 presents the regression results for Hypothesis 3d, which suggests a three-way interaction between firm performance, board gender diversity, and ownership power of women directors on amount of strategic change. Model 16 of Table 6 shows that the three-way interaction is not significant ($\beta = 0.08, p > 0.05$). Therefore, Hypothesis 3d is not supported.

Although Hypothesis 1 was supported, the significant negative effect of board gender diversity on strategic change should be considered in light of a significant three-way interaction between board gender diversity, female board directors' power, and firm performance, as shown in Tables 3 and 4. The statistically significant main effect is further clarified by the complex three-way interaction. Below we present additional analyses that we explored.

Supplemental Analyses

We ran one additional set of analyses to check whether the statistically significant results we found in the three-way interactions of board gender diversity, firm performance, and power of women directors would hold when accounting for the power of male directors. To account for the power of male

directors, we ran analyses for each form of power including two additional two-way interactions (power of male directors \times firm performance) and (power of male directors \times board gender diversity) as well as one additional three-way interaction term (power of male directors \times board gender diversity \times firm performance). The results (presented in Table 7) show that even after adding these interaction terms for the power of male directors, our results remain the same. The three-way interaction of board gender diversity, firm performance, and power of women directors is statistically significant for structural (Model 17; $\beta = .39, p < .05$), prestige (Model 18; $\beta = .54, p < .05$), and expert power (Model 19; $\beta = .71, p < .05$).

Discussion

Consistent with research showing small negative effects of demographic diversity on team outcomes (Horwitz and Horwitz, 2007; Miller et al., 1998; Webber and Donahue 2001), we found a small and negative effect of board gender diversity on amount of strategic change. We did not find an interaction between board gender diversity and firm performance on amount of strategic change. However, consistent with research highlighting the importance of power (Chen, Lee-Chai, and Bargh, 2001; Van der Vegt et al., 2010), we found a three-way interaction of power, firm performance, and board gender diversity on amount of strategic change. When firm performance was low and power of women directors was high, the most negative relationship between board gender diversity and amount of strategic change was observed. Conversely, the most positive relationship between board gender diversity and amount of strategic change was observed when both firm performance and power of women directors were high. This was true for structural, expert, and prestige power.

Contrary to our expectations, we did not find a significant three-way interaction of ownership power, gender diversity, and firm performance on amount of strategic change. We believe there are both theoretical and statistical reasons for this finding. Theoretically, agency theory (Jensen and Meckling, 1976) may explain why we did not find a three-way interaction effect for ownership power. While directors are traditionally viewed as principals who oversee the behaviors of agents working on behalf of shareholders, directors may also be prone to the same self-interested behavior as agents. Directors must

sometimes make decisions that are best for the company but that may conflict with their personal goals (Certo, Dalton, Dalton, and Lester, 2008). A director who owns a significant share of the firm may have less incentive to take the risks needed to influence strategic change especially if that change could negatively affect short-term performance. Latham and Braun (2009: 275) found that managers with more ownership (i.e., more “skin in the game”) were more likely to reduce risky investments in their firms. This is one theoretical explanation for the fact that the predicted three-way interaction with ownership power was not found. Statistically, the ownership power variable may lack the required variance for a three-way interaction to be detected. This may be because many firms have similar policies about ownership rights and because there are very few women founders or directors who are large block shareholders.

Theoretical Implications

The negative relationship between board gender diversity and strategic change suggests that prior knowledge can vary by gender, thereby making it harder for diverse board members to agree on strategic change. This is consistent with research stating that cognitions may vary as a function of demographics (Milliken and Martins, 1996; Robinson and Dechant, 1997). Interestingly, we did not find a two-way interaction of board gender diversity and firm performance. It was only when the power of women directors was added in the three-way interaction that we found effects. Only when the women on the boards are powerful do we see the steepest positive and negative relationships between board gender diversity and strategic change. This supports theoretical work on power and gender positing that power is essential for women to have an impact (Ragins and Sundstrom, 1989). Having women on boards may not matter unless they also have the power to influence change (Zelevchowski and Bilimoria, 2001, 2003). However, this only holds when firms have performed well and threat is low. Under conditions of poor performance when there is threat, we observed the lowest rates of strategic change when gender diversity and the power of women directors are both high. Thus our findings imply that the gender diverse boards with powerful women directors yield both the highest and the lowest amounts of change, depending on threat level (poor performance).

This study integrates threat-rigidity theory with the team diversity and power literatures to illustrate that in the process of responding to the threat of low performance, the amount of strategic change that gender-diverse boards can influence is modified by the power of women directors. Threat-rigidity theory proposes that depending on the way decision-makers respond to threat, the firm outcome can be restriction of information and constriction of control (as is often the case), or it can be input of new information and loosening of control. Research testing threat-rigidity theory mostly supports the notion that when the firm is threatened due to low firm performance, a rigid reaction is more likely (Staw et al., 1981). Our findings suggest that strategic change is also dependent upon the power of women directors. The combination of gender diversity and high female director power is less likely to impede but instead promote strategic change when the firm has been performing well. This is because there is low threat, less need to constrict ideas, and women have the influence to get those perspectives heard. When the firm has been performing poorly, this combination is most likely to impede strategic change given the incompatibility between the need for the firm to constrict ideas and the ability of powerful women to assert influence. This is consistent with work showing that demographic differences are most likely to be relevant during times of threat (Carpenter and Fredrickson, 2001; Finkelstein and Hambrick, 1990; Westphal and Bednar, 2005). When women on boards have power, the increased diversity they add to the board can both propel and impede strategic change, depending on the level of firm performance.

Our findings suggest that gender diversity is a theoretically meaningful variable to examine in studies of boards. While other forms of demography observed on boards, including tenure, functional background, age, and education, have received much research attention (e.g., Goodstein et al., 1994; Forbes and Milliken, 1999; Westphal and Zajac, 1995), the amount of research on gender diversity has been relatively small by comparison. Only recently have there been enough women on boards for researchers to begin considering gender diversity as a variable that could affect firm-level outcomes. Now that women hold 16.6 percent of board seats (Catalyst, 2012), it is becoming possible to examine theoretical linkages between board gender diversity and firm outcomes (Daily, Certo, and Dalton, 1999; Hillman, Cannella, and Harris, 2002; Hillman et al., 2007). As the number of women on boards increases,

research needs to account for the effects this may have on those boards. In response, we answer calls for research on the effects of women directors (Bilimoria and Wheeler, 2000; Burke, 2000).

We also contribute to the literature on strategic change theoretically by demonstrating how power influences strategic change. While there is evidence that high-level individuals influence strategic change (see Rajagopalan and Spreitzer, 1997), our findings suggest that minority members can also impact strategic change depending on their power and the firm's performance. Our findings are consistent with the theoretical work of Lawrence et al. (2005), which posits that power influences the integration of new ideas in teams as well as the adoption of innovation in organizations. Results suggest that gender diversity can lead to strategic change when firm performance is high and women directors have significant structural, expert, and prestige power. Our findings lend support to Lawrence et al.'s (2005) theory, suggesting the importance of power in a board of directors setting. However, our findings also suggest an extension to Lawrence et al.'s theory. When the minority group (women in our case) is powerful, new perspectives seem to be most readily integrated when firm performance has been high and there is a lack of threat.

Practical Implications

Many firms will be increasingly faced with the impact of diversity in the boardroom as they look for the right directors. While many studies have suggested that there are adverse effects of diversity on decision speed, conflict, and ability to come to consensus, our conclusion is that when women are in powerful positions, they are better able to influence strategic change when the firm is not threatened. This study shows that there may be strategic business reasons to consider not just appointing women to boards but also appointing them to powerful positions, which enables them to be more influential and aid the firm in good times. This is because the power of women directors affects the ability of the firm to make strategic changes, which may sometimes lead to competitive advantage (Pettigrew, 1987).

However, consistent with previous diversity research, we also uncovered evidence of the double-edged nature of diversity (Mannix and Neale, 2005; Williams and O'Reilly, 1998). Despite the interaction effects we found, the relationship between board gender diversity and strategic change remains negative.

This finding seems consistent with meta-analyses of team diversity showing that demographic diversity tends to have a small and negative relationship with team performance (Horwitz and Horwitz, 2007; Webber and Donahue, 2001). Our correlations and regression coefficients between board gender diversity and strategic change are also small and negative. This is not surprising because boards of directors are a specialized type of team and should have similar dynamics. Moreover, Kanter's (1977) classic work on *Men and Women of the Corporation* defines token status at 15% or less. Women are just above token status on boards, which means that the few women on boards are also very salient (Kanter, 1977). As the proportion of people in a team with a certain characteristic gets smaller, those who possess the characteristic become increasingly aware of how different they are from the team (Ethier and Deaux, 1994; Mullen, 1983). Being seen as tokens or feeling like tokens may exacerbate the effects of gender diversity in board settings.

The negative direct effect of board gender diversity on strategic change was further explained by the three-way interaction with firm performance and the power of women directors. During times following low firm performance, board gender diversity combined with high power of women board members leads to the most negative effect on amount of strategic change. The complex three-way interactions found in this study suggest that firms can better use directors' skills and resources when they recognize and understand the contingencies surrounding the effects of diversity. This presents an opportunity for firms to implement board processes for managing diversity following times of low performance. For example, because conflict is likely to be exacerbated in times of low firm performance, boards may benefit from conflict management techniques that have been shown to benefit teams operating under threat (Hackman and Wageman, 2005; Wageman and Donnenfeld, 2007). It may be helpful for boards to create change management teams that will help them maintain norms of openness (Amason and Sapienza, 1997) during times when the firm experiences threat due to low performance.

Limitations and Future Research

While we propose hypotheses about the influence of board gender diversity on strategic change, we do not measure board processes. All explanations related to group processes in this paper are

speculative, as we did not collect data on team processes. Future research may measure processes, including cohesion, conflict, and stress, which may explain why board gender diversity influences strategic change. In addition, we did not measure perceived forms of power including referent power, which measures the extent to which others identify with a board member (French and Raven, 1959). We operationalized power using Finkelstein's (1992) dimensions, which are based on facts about directors, not on perceptions others have about the directors. Future research may expand upon the present study by collecting data on boards measuring perceptions of power during board decision-making. For example, primary data could be collected with board members to measure a board member's referent power as reported by how much other board members identify with that person. Research may also clarify the role of power on other decision outcomes such as decision satisfaction, participation, and resistance. Studies show that diversity may have negative effects on consensus, leading to the view that homogeneity has a positive impact on consensus, decision satisfaction, and performance (Jaquinto and Fredrickson, 1997). Future studies should explore how diversity and power interact to influence these decision outcomes.

A related limitation of not measuring team processes is that it would be helpful to explore how and when directors suppress opposing viewpoints during times of low firm performance. Our findings show that boards with powerful women change less after a period of poor performance than boards with less powerful women. One explanation consistent with threat-rigidity theory (Staw, 1981) is that boards restrict information in response to threat and different perspectives are stamped out to avoid information overload, especially when women have low power. Therefore, even if women on diverse boards voice their views, those views may be silenced in favor of another dominant course of action, which results in less strategic change. Another explanation, which would be consistent with a diversity-conflict hypothesis (Jehn, Chadwick, and Thatcher, 1997; Mannix and Neale, 2005; Mintzberg, 1983; Williams and O'Reilly, 1998), is that powerful women are able to express their views without being silenced, and their power to influence the decision during a time when the firm is pressured for homogeneous and quick action may stall decision-making. In this instance, the volume of information leads to information overload (Staw et al., 1981) which deadlocks the team and results in less strategic change. To determine whether board

members exhibit silencing due to self-suppression or external pressure will require researchers to measure the true process (i.e., intervening variable). Future research may collect primary data through meeting attendance or reports of team processes from those present.

Another limitation of this research is that while we posit the effect of diversity on boards generically, it is possible that not all boards are the same. Some boards may champion norms of openness, establish equality of influence, and reinforce the executives' roles in accomplishing organizational goals. Nadler and Heilpern (1998) found norms of openness to be extremely important for the functioning of executive teams. Openness acknowledges that diverse ideas can be addressed, respecting each team member and discouraging differences in influence within the team. Such norms of openness should facilitate quality decision-making. Amason and Sapienza (1997: 512) found that the norm of openness actually "unlocks the potential" of diversity within the top management team. Thus, future research should explore how the norms embedded within the processes and values of the team may influence the impact of diversity on strategic change.

We do not present reliability information because our measures of power and strategic change are formative rather than reflective variables, as is common in strategy research (Boyd, Gove, and Hitt, 2005). Coltman et al. (2008) established criteria to determine whether a construct is formative. These include constructs that use more than one indicator (such as expert power), constructs made up of a combination of indicators, constructs where the direction of causality is from the items to the construct, and constructs where the characteristics of the items used are independent and non-interchangeable. These criteria indicate that our measures are formative constructs. Because of methodological warnings against the use and interpretation of reliability with formative constructs, we did not include reliability estimates for our measures (Chin, 1998; Jarvis, McKenzie, and Podsakoff, 2003), nor do we present validity evidence for each of our measures. Instead, we rely on previous empirical studies that have established the validity of the power measures (Finkelstein, 1992; Hillman et al., 2000; Peterson and Philpot, 2007) and the strategic change measure (Haynes and Hillman, 2010; Zhang, 2006; Carpenter, 2000; Geletkanycz and Hambrick, 1997; Finkelstein and Hambrick, 1990).

We also note that strategic change does not always serve to better align the organization with its environment. The effects of strategic change on firm performance have been mixed, with studies finding a positive relationship (Barr, Stimpert, and Huff, 1992; Kraatz and Zajac, 2001; Meyer, 1982; Tushman, Virany, and Romanelli, 1985; Zajac and Kraatz, 1993), a negative relationship (Hill and Hansen, 1991; Mitchell, Shaver, and Yeung, 1992; Parnell, 1994; Tushman, 1977), and no relationship (Zajac and Kraatz, 1993). Therefore, the relationship between strategic change and firm performance is not straightforward. We make no claims that strategic change will always succeed in aligning firms with the environment. Instead, we only suggest that decision-makers make changes with that intention. Future research may expand upon ours by exploring firm performance measures as outcomes. Another limitation of our strategic change measure is that it measures change, regardless of whether the change was positive or negative. This is a commonly used measure in the strategic management literature (Finkelstein and Hambrick, 1990; Zhang, 2006) that examines changes on six strategic resource indicators. The purpose of this measure is to determine whether change took place, not to capture whether the change was positive or negative. Future research may explore predictors of strategic changes that increase/decrease individual resource indicators, such as advertising intensity.

Another limitation of our measures is that we do not have a means of controlling for movements and attrition on boards of directors between 2002 and 2004. We took our measure of women on boards in 2002 and then used a two-year period as the lag because it takes time for firm-level strategic change to be implemented after decision-making takes place (Geletkanycz and Hambrick, 1997; Westphal et al., 2001). Board members are typically elected to terms longer than three years, which would limit the possibility of major movements soon enough after 2002 to influence changes that could be implemented by 2004. Still, we do not measure changes in board membership and acknowledge that this is a limitation of our study. Future research using longitudinal designs with multiple measures of the independent and dependent variables can build upon the findings presented in this study.

Furthermore, our work may suggest that power dynamics can contribute to the silence of some board members (Morrison and Milliken, 2000). Women have the greatest influence on strategic change

when they are powerful. However, we did not measure silence. Van Dyne, Ang, and Botero (2003) conceptualize various motives within the construct of silence. Future research may study the participation patterns of directors and how they influence the firm, allowing for a more complete understanding of how and when the benefits of diversity may be hindered. Although boards are formed to benefit from a diversity of perspectives, the characteristics of the team and directors may result in pressure for silence.

Finally, while we focus on one form of diversity in the present study (i.e., gender diversity), we do not measure factions or faultlines that can develop in teams. Future research may take a faultline approach (Lau and Murnighan, 1998) whereby multiple demographic differences could be considered at once. While our research questions and theory were about board gender diversity, future research may expand upon our findings by utilizing more complex measures of diversity through a faultline approach that takes multiple demographic variables into account.

Conclusion

This study investigated the effects of board gender diversity, firm performance, and power of women directors on amount of strategic change. The findings presented here extend threat-rigidity theory and suggest that it should be expanded to take into account the gender diversity of the decision makers and their level of power. This study further clarifies how board gender diversity impacts the firm. Consistent with past research, we find that diversity can lead to less strategic change. During times of low firm performance, having powerful women directors results in the most negative relationship between board gender diversity and amount of strategic change. However, when firm performance is high, having powerful women directors results in the most positive relationship between board gender diversity and amount of strategic change. Overall, our results support the double-edged nature of diversity and illustrate the complex effects of diversity on boards.

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Table 1: Means, Standard Deviations, and Correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 Strategic change	-0.01	0.45																			
2 Board gender diversity	0.19	0.12	-0.15																		
3 Firm performance	0.04	0.15	-0.15	0.12																	
4 Structural power of women	0.48	0.70	-0.13	0.28	0.05																
5 Prestige power of women	1.28	1.03	-0.13	0.48	0.08	0.26															
6 Expert power of women	1.97	1.09	-0.12	0.62	0.11	0.29	0.46														
7 Ownership power of women	0.00	0.02	-0.04	0.07	0.03	0.00	0.08	0.03													
8 Firm size	1.33	0.53	-0.18	0.26	0.06	0.10	0.24	0.25	0.01												
9 Slack resources	1.80	1.45	0.27	-0.13	-0.02	-0.09	-0.16	-0.12	-0.01	-0.41											
10 Board age diversity	7.53	2.18	0.14	-0.17	0.06	-0.05	-0.20	-0.17	0.02	-0.12	0.14										
11 Board tenure diversity	6.31	3.12	-0.02	-0.05	0.10	-0.04	-0.01	0.01	0.04	0.08	0.05	0.26									
12 Board racial diversity	0.13	0.13	-0.07	0.28	0.06	0.05	0.30	0.30	-0.03	0.44	-0.25	-0.21	-0.06								
13 Structural power of men	0.96	0.35	0.00	0.06	0.00	0.05	0.12	0.07	-0.02	0.11	-0.09	-0.17	-0.15	0.13							
14 Prestige power of men	1.19	0.46	-0.03	-0.04	0.02	0.03	-0.04	0.02	-0.08	-0.02	-0.08	-0.14	-0.02	0.11	0.06						
15 Expert power of men	2.46	0.43	0.03	0.13	0.06	0.06	0.13	0.24	-0.06	0.18	-0.04	-0.08	-0.13	0.20	0.02	-0.03					
16 Ownership power of men	0.01	0.01	0.12	-0.05	0.05	0.00	-0.17	-0.05	0.11	-0.06	0.04	0.24	0.10	-0.16	-0.04	-0.11	0.06				
17 TMT age diversity	6.31	2.81	0.09	-0.15	0.03	-0.09	-0.10	-0.12	0.08	-0.09	0.06	0.14	0.15	-0.13	-0.10	-0.06	0.01	0.08			
18 TMT gender diversity	0.10	0.14	-0.01	0.16	0.03	0.07	0.07	0.08	0.03	0.02	-0.04	-0.02	-0.03	0.03	-0.03	-0.09	0.07	-0.03	0.01		
19 CEO succession	0.12	0.33	0.03	-0.05	0.01	-0.06	-0.04	-0.08	-0.04	-0.01	0.01	0.06	0.03	-0.01	0.01	-0.01	-0.11	0.04	0.06	-0.03	
20 Outsider ratio	0.68	0.18	-0.02	0.25	-0.02	0.10	0.26	0.20	-0.07	0.06	-0.04	-0.32	-0.20	0.26	0.08	0.23	-0.03	-0.39	-0.24	-0.06	-0.07

$N = 462$. All correlations .10 or greater are significant at $p < 0.05$; .12 or greater are significant at $p < 0.01$; .16 or greater are significant at $p < 0.001$.

Table 2**Regression Results: Interaction between Gender Diversity and Firm Performance Predicting Strategic Change**

<i>Variables</i>	<i>Strategic Change</i>			
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Firm Size	-0.08	-0.07	-0.06	-0.06
Slack Resources	0.24*	0.24*	0.23*	0.23*
Board Age Diversity	0.12*	0.11*	0.12*	0.12*
Board Tenure Diversity	-0.06	-0.06	-0.04	-0.04
Board Racial Diversity	0.05	0.07	0.07	0.07
TMT Age Diversity	0.07	0.06	0.07	0.07
TMT Gender Diversity	0.00	0.02	0.02	0.02
CEO Succession	0.02	0.02	0.02	0.02
Outside Director Ratio	0.03	0.05	0.05	0.04
Industry	0.02	0.02	0.01	0.01
Board Gender Diversity		-0.10*	-0.09†	-0.09†
Firm Performance			-0.14*	-0.18*
Board Gender Diversity × Firm Performance				-0.05
<i>R</i> ²	0.099*	0.108*	0.128*	0.129*
Adjusted <i>R</i> ²	0.079*	0.087*	0.105*	0.104*
Change in <i>R</i> ²		0.009*	0.020*	0.001
<i>F</i> -test	4.98*	4.98*	5.49*	5.09*

N = 462.

Standardized coefficients. Two-tailed tests reported.

† $p < 0.10$; * $p < 0.05$.

Table 3

Regression Results: Three-way Interaction with Structural Power of Women Directors Predicting Strategic Change

<i>Variables</i>	<i>Strategic Change</i>		
	<i>Model 5</i>	<i>Model 6</i>	<i>Model 7</i>
Firm Size	-0.09	-0.09	-0.08
Slack Resources	0.23*	0.22*	0.22*
Board Age Diversity	0.14*	0.14*	0.15*
Board Tenure Diversity	-0.08	-0.06	-0.06
Board Racial Diversity	0.05	0.05	0.06
Structural Power of Male Directors	0.04	0.04	0.04
TMT Age Diversity	0.07	0.07	0.06
TMT Gender Diversity	0.03	0.03	0.05
CEO Succession	0.04	0.04	0.02
Outside Director Ratio	0.06	0.06	0.06
Industry	0.01	0.01	0.00
Board Gender Diversity	-0.06	-0.03	-0.06
Firm Performance	-0.14*	-0.19*	-0.39*
Structural Power of Women Directors	-0.09†	-0.10*	-0.10*
Board Gender Diversity × Structural Power		0.07	0.04
Structural Power of Women Directors × Firm Performance		0.01	-0.10
Board Gender Diversity × Firm Performance		-0.07	0.25
Board Gender Diversity × Firm Performance × Structural Power of Women Directors			0.42*
<i>R</i> ²	0.151*	0.157*	0.156*
Adjusted <i>R</i> ²	0.123*	0.123*	0.122*
Change in <i>R</i> ²		0.006*	0.011*
<i>F</i> -test	5.40*	4.61*	4.56*

N = 462.

Standardized coefficients. Two-tailed tests reported.

† $p < 0.10$; * $p < 0.05$.

Table 4

Regression Results: Three-way Interaction with Prestige Power of Women Directors Predicting Strategic Change

<i>Variables</i>	<i>Strategic Change</i>		
	<i>Model 8</i>	<i>Model 9</i>	<i>Model 10</i>
Firm Size	-0.06	-0.06	-0.06
Slack Resources	0.25*	0.25*	0.25*
Board Age Diversity	0.14*	0.14*	0.15*
Board Tenure Diversity	-0.04	-0.04	-0.03
Board Racial Diversity	0.10†	0.10†	0.08
Prestige Power of Male Directors	-0.02	-0.07	-0.10†
TMT Age Diversity	0.08†	0.08†	0.07
TMT Gender Diversity	0.02	0.02	0.02
CEO Succession	0.01	0.01	0.01
Outside Director Ratio	0.09†	0.09†	0.08
Industry	0.01	0.01	0.01
Board Gender Diversity	-0.05	-0.03	-0.06
Firm Performance	-0.11*	-0.16*	-0.39*
Prestige Power of Women Directors	-0.03	-0.02	-0.03
Board Gender Diversity × Prestige Power of Women Directors		0.03	0.00
Prestige Power of Women Directors × Firm Performance		-0.03	-0.03
Board Gender Diversity × Firm Performance		-0.02	0.28
Board Gender Diversity × Firm Performance × Prestige Power of Women Directors			0.52*
<i>R</i> ²	0.131*	0.133*	0.145*
Adjusted <i>R</i> ²	0.103*	0.098*	0.109*
Change in <i>R</i> ²		0.002	0.012*
<i>F</i> -test	4.63*	3.82*	4.00*

N = 462.

Standardized coefficients. Two-tailed tests reported.

† *p* < 0.10; **p* < 0.05.

Table 5

Regression Results: Three-way Interaction with Expert Power of Women Directors Predicting Strategic Change

<i>Variables</i>	<i>Strategic Change</i>		
	<i>Model 11</i>	<i>Model 12</i>	<i>Model 13</i>
Firm Size	-0.07	-0.07	-0.07
Slack Resources	0.23*	0.25*	0.25*
Board Age Diversity	0.12*	0.13*	0.13*
Board Tenure Diversity	-0.03	-0.03	-0.03
Board Racial Diversity	0.06	0.06	0.06
Expert Power of Male Directors	0.08	0.07	0.07
TMT Age Diversity	0.06	0.06	0.05
TMT Gender Diversity	0.02	0.02	0.03
CEO Succession	0.03	0.02	0.02
Outside Director Ratio	0.05	0.04	0.04
Industry	0.01	0.01	0.01
Board Gender Diversity	-0.07	-0.08	-0.10
Firm Performance	-0.14*	-0.29*	-0.50*
Expert Power of Women Directors	-0.04	-0.03	-0.04
Board Gender Diversity × Expert Power of Women Directors		-0.03	-0.04
Expert Power of Women Directors × Firm Performance		-0.49*	-0.24
Board Gender Diversity × Firm Performance		0.34†	0.52*
Board Gender Diversity × Firm Performance × Expert Power of Women Directors			0.63*
<i>R</i> ²	0.133*	0.145*	0.154*
Adjusted <i>R</i> ²	0.106*	0.112*	0.119*
Change in <i>R</i> ²		0.012*	0.009*
<i>F</i> -test	4.90*	4.42*	4.47*

N = 462.

Standardized coefficients. Two-tailed tests reported.

† $p < 0.10$; * $p < 0.05$.

Table 6

Regression Results: Three-way Interaction with Ownership Power of Women Directors Predicting Strategic Change

<i>Variables</i>	<i>Strategic Change</i>		
	<i>Model 14</i>	<i>Model 15</i>	<i>Model 16</i>
Firm Size	-0.06	-0.06	-0.06
Slack Resources	0.23*	0.23*	0.23*
Board Age Diversity	0.11*	0.11*	0.11*
Board Tenure Diversity	-0.04	-0.04	-0.04
Board Racial Diversity	0.08	0.08	0.08
Ownership Power of Male Directors	0.13*	0.13*	0.13*
TMT Age Diversity	0.07	0.07	0.07
TMT Gender Diversity	0.03	0.03	0.03
CEO Succession	0.02	0.02	0.02
Outside Director Ratio	0.09†	0.09†	0.09†
Industry	0.01	0.01	0.01
Board Gender Diversity	-0.09†	-0.09†	-0.09†
Firm Performance	-0.15*	-0.16†	-0.16†
Ownership Power of Women Directors	-0.04	-0.09	0.12
Board Gender Diversity × Ownership Power of Women Directors		0.00	0.01
Ownership Power of Women Directors × Firm Performance		0.07	0.05
Board Gender Diversity × Firm Performance		-0.03	0.02
Board Gender Diversity × Firm Performance × Ownership Power of Women Directors			0.08
R^2	0.143*	0.144*	0.145*
Adjusted R^2	0.116*	0.111*	0.110*
Change in R^2		0.001	0.001
F -test	5.33*	4.40*	4.16*

$N = 462$.

Standardized coefficients. Two-tailed tests reported.

† $p < 0.10$; * $p < 0.05$.

Table 7
Regressing Strategic Change on Independent Variables, Including Interactions with the Power of Male Directors

<i>Variables</i>	<i>Dependent Variable = Strategic Change</i>		
	<i>Model 17</i>	<i>Model 18</i>	<i>Model 19</i>
	<i>Power = Structural</i>	<i>Power = Prestige</i>	<i>Power = Expert</i>
Firm Size	-0.07	-0.07	-0.08
Slack Resources	0.23*	0.23*	0.25*
Board Age Diversity	0.14*	0.13*	0.14*
Board Tenure Diversity	-0.02	-0.02	-0.03
Board Racial Diversity	0.11*	0.10†	0.10*
Power of Male Directors	0.16*	0.02	0.07
TMT Age Diversity	0.08†	0.06	0.06
TMT Gender Diversity	0.04	0.03	0.03
CEO Succession	0.01	0.01	0.02
Outside Director Ratio	0.07	0.04	0.06
Industry	-0.00	0.02	0.00
Board Gender Diversity	-0.08	-0.08	-0.08
Firm Performance	-0.36*	-0.43*	-0.51*
Power of Women Directors	-0.17*	-0.04	-0.06
Board Gender Diversity × Power of Women Directors	0.09†	0.01	-0.04
Power of Women Directors × Firm Performance	-0.13	-0.08	-0.16
Board Gender Diversity × Firm Performance	0.28†	0.32†	0.51*
Board Gender Diversity × Firm Performance × Power of Women Directors	0.39*	0.54*	0.71*
Board Gender Diversity × Power of Male Directors	-0.09*	-0.04	-0.02
Power of Male Directors × Firm Performance	-0.05	0.05	-0.04
Board Gender Diversity × Firm Performance × Power of Male Directors	-0.12	0.09	-0.11
R^2	0.182	0.155	0.16
Adjusted R^2	0.143	0.115	0.12
<i>F</i> -test	4.66*	3.85*	4.09*

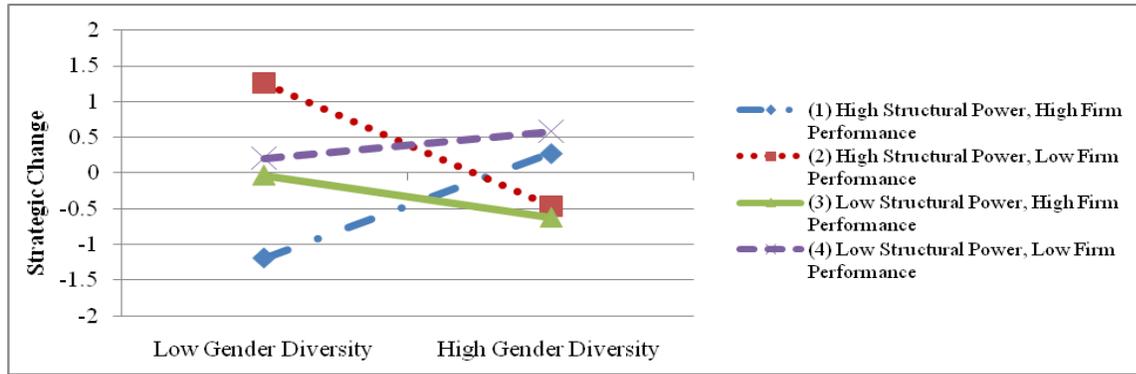
$N = 462$.

Standardized coefficients. Two-tailed tests reported.; † $p < 0.10$; * $p < 0.05$.

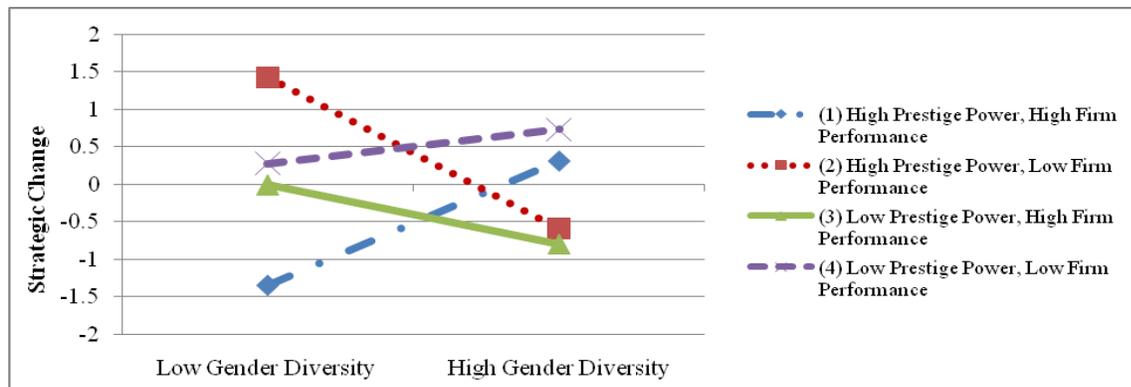
Figure 1

Three-Way Interactions for Structural, Prestige, and Expert Power of Women Directors

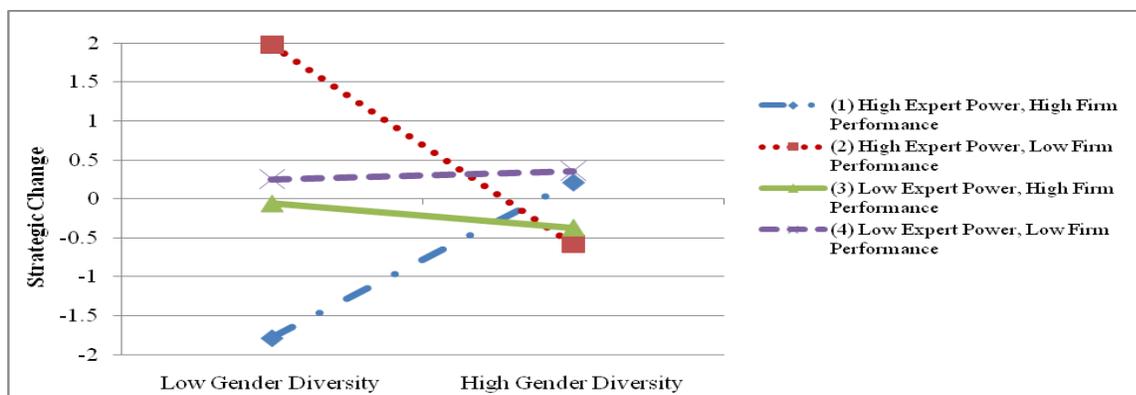
A) Structural Power Three-way Interaction



B) Prestige Power Three-way Interaction



C) Expert Power Three-way Interaction



Appendix

Regression Results: Interaction between Gender Diversity and Firm Performance

Predicting Strategic Change (Product and International Diversification)

<i>Variables</i>	<i>Strategic Change</i>			
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Firm Size	0.02	0.03	0.03	0.03
Slack Resources	-0.09	-0.09	-0.09†	-0.09†
Board Age Diversity	0.04	0.03	0.04	0.04
Board Tenure Diversity	-0.03	-0.03	-0.01	0.00
Board Racial Diversity	-0.04	-0.03	-0.02	-0.01
TMT Age Diversity	0.02	0.01	0.02	0.01
TMT Gender Diversity	-0.01	0.01	0.01	0.02
CEO Succession	-0.06	-0.06	-0.05	-0.06
Outside Director Ratio	0.07	0.09	0.08	0.07
Industry	-0.06	-0.06	-0.07	-0.08
Board Gender Diversity		-0.09†	-0.06	-0.06
Firm Performance			-0.19*	-0.36*
Board Gender Diversity × Firm Performance				-0.19*
<i>R</i> ²	0.019	0.025	0.061*	0.071*
Adjusted <i>R</i> ²	-0.005	-0.001	0.034*	0.042*
<i>F</i> -test	0.79	0.98	2.24*	2.44*

N = 429.

Standardized coefficients. Two-tailed tests reported. † $p < 0.10$; * $p < 0.05$.

Appendix (Cont.) Regression Results: Three-way Interaction with Structural Power of Women Directors Predicting Strategic Change (Product and International Diversification)

<i>Variables</i>	<i>Strategic Change</i>		
	<i>Model 5</i>	<i>Model 6</i>	<i>Model 7</i>
Firm Size	0.03	0.03	0.03
Slack Resources	-0.09†	-0.09†	-0.09†
Board Age Diversity	0.05	0.04	0.05
Board Tenure Diversity	-0.02	-0.01	-0.01
Board Racial Diversity	-0.02	-0.02	-0.02
Structural Power of Male Directors	-0.01	-0.01	-0.01
TMT Age Diversity	0.03	0.02	0.02
TMT Gender Diversity	0.00	0.01	0.02
CEO Succession	-0.05	-0.05	-0.06
Outside Director Ratio	0.09	0.08	0.08
Industry	-0.06	-0.07	-0.06
Board Gender Diversity	-0.04	-0.03	-0.06
Firm Performance	-0.19*	-0.38*	-0.56*
Structural Power of Women Directors	-0.04	-0.04	-0.03
Board Gender Diversity × Structural Power		0.02	-0.02
Structural Power of Women Directors × Firm Performance		-0.05	-0.16
Board Gender Diversity × Firm Performance		-0.17	0.16
Board Gender Diversity × Firm Performance × Structural Power Women Directors			0.41*
<i>R</i> ²	0.062*	0.074*	0.084*
Adjusted <i>R</i> ²	0.029*	0.034*	0.041*
<i>F</i> -test	1.86*	1.85*	1.98*

N = 429.

Standardized coefficients. Two-tailed tests reported.

† *p* < 0.10; **p* < 0.05.

Appendix (Cont.) Regression Results: Three-way Interaction with Prestige Power of Women Directors Predicting Strategic Change (Product and International Diversification)

<i>Variables</i>	<i>Strategic Change</i>		
	<i>Model 8</i>	<i>Model 9</i>	<i>Model 10</i>
Firm Size	0.05	0.05	0.05
Slack Resources	-0.08	-0.08	-0.08
Board Age Diversity	0.05	0.05	0.05
Board Tenure Diversity	-0.02	-0.02	-0.01
Board Racial Diversity	-0.02	-0.02	-0.03
Prestige Power of Male Directors	-0.02	-0.02	-0.03
TMT Age Diversity	0.05	0.05	0.04
TMT Gender Diversity	0.00	0.01	0.01
CEO Succession	-0.06	-0.07	-0.07
Outside Director Ratio	0.10†	0.09	0.09
Industry	-0.07	-0.09†	-0.08
Board Gender Diversity	-0.05	-0.06	-0.08
Firm Performance	-0.15*	-0.31*	-0.51*
Prestige Power of Women Directors	0.03	0.02	0.02
Board Gender Diversity × Prestige Power of Women Directors		-0.05	-0.08
Prestige Power of Women Directors × Firm Performance		-0.03	-0.04
Board Gender Diversity × Firm Performance		-0.17	0.12
Board Gender Diversity × Firm Performance × Prestige Power of Women Directors			0.47*
<i>R</i> ²	0.052	0.068*	0.077*
Adjusted <i>R</i> ²	0.019	0.028*	0.034*
Change in <i>R</i> ²			
<i>F</i> -test	1.56	1.69*	1.81*

N = 429.

Standardized coefficients. Two-tailed tests reported.

† *p* < 0.10; **p* < 0.05.

Appendix (Cont.) Regression Results: Three-way Interaction with Expert Power of Women Directors Predicting Strategic Change (Product and International Diversification)

<i>Variables</i>	<i>Strategic Change</i>		
	<i>Model 11</i>	<i>Model 12</i>	<i>Model 13</i>
Firm Size	0.03	0.03	0.03
Slack Resources	-0.09†	-0.07	-0.07
Board Age Diversity	0.05	0.05	0.05
Board Tenure Diversity	-0.02	-0.01	0.00
Board Racial Diversity	-0.03	-0.03	-0.02
Expert Power of Male Directors	0.00	0.00	0.00
TMT Age Diversity	0.02	0.01	0.00
TMT Gender Diversity	0.01	0.02	0.03
CEO Succession	-0.05	-0.06	-0.06
Outside Director Ratio	0.08	0.07	0.07
Industry	-0.07	-0.08	-0.08
Board Gender Diversity	-0.10*	-0.10	-0.11†
Firm Performance	-0.09*	-0.44*	-0.64*
Expert Power of Women Directors	0.06	0.07	0.06
Board Gender Diversity × Expert Power of Women Directors		0.00	-0.02
Expert Power of Women Directors × Firm Performance		-0.42†	-0.18
Board Gender Diversity × Firm Performance		0.15	0.35
Board Gender Diversity × Firm Performance × Expert Power Women Directors			0.63*
<i>R</i> ²	0.063*	0.080*	0.089*
Adjusted <i>R</i> ²	0.031*	0.042*	0.049*
<i>F</i> -test	1.97*	2.09*	2.22*

N = 429.

Standardized coefficients. Two-tailed tests reported.

† *p* < 0.10; **p* < 0.05.

Appendix (Cont.) Regression Results: Three-way Interaction with Ownership Power of Women Directors Predicting Strategic Change (Product and International Diversification)

<i>Variables</i>	<i>Strategic Change</i>		
	<i>Model 14</i>	<i>Model 15</i>	<i>Model 16</i>
Firm Size	0.03	0.03	0.03
Slack Resources	-0.09†	-0.09†	-0.09†
Board Age Diversity	0.04	0.04	0.04
Board Tenure Diversity	-0.01	0.00	0.00
Board Racial Diversity	-0.02	-0.02	-0.02
Ownership Power of Male Directors	0.00	-0.02	-0.02
TMT Age Diversity	0.02	0.02	0.02
TMT Gender Diversity	0.01	0.01	0.01
CEO Succession	-0.06	-0.06	-0.06
Outside Director Ratio	0.08	0.07	0.07
Industry	-0.07	-0.08	-0.08
Board Gender Diversity	-0.06	-0.08	-0.08
Firm Performance	-0.19*	-0.36*	-0.36*
Ownership Power of Women Directors	-0.01	-0.10	-0.09
Board Gender Diversity × Ownership Power of Women Directors		-0.13	-0.13
Ownership Power of Women Directors × Firm Performance		-0.02	-0.01
Board Gender Diversity × Firm Performance		-0.19*	-0.21
Board Gender Diversity × Firm Performance × Ownership Power Women Directors			-0.03
<i>R</i> ²	0.061*	0.076*	0.076*
Adjusted <i>R</i> ²	0.029*	0.038*	0.036*
<i>F</i> -test	1.91*	1.99*	1.88*

N = 429.

Standardized coefficients. Two-tailed tests reported.

† *p* < 0.10; **p* < 0.05.