

WHEN WILL BOARDS INFLUENCE STRATEGY? INCLINATION \times POWER = STRATEGIC CHANGE

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While boards of directors are usually recognized as having the potential to affect strategic change in organizations, there is considerable debate as to whether such potential is typically realized. We seek to reconcile the debate on whether boards are typically passive vs. active players in the strategy realm by developing a model that specifies when boards are likely to influence organizational strategy and whether such an influence is likely to impel vs. impede change. Specifically, we develop arguments as to when certain demographic and processual features of boards imply a greater inclination for strategic change, when these features imply a greater preference for the status quo, and how differences in such inclinations will influence strategic change. We then also propose that a board's inclination for strategic change interacts with a board's power to affect change, generating a multiplicative effect on strategic change. These ideas are tested using survey and archival data from a national sample of over 3000 hospitals. The supportive findings suggest that strategic change is significantly affected by board demography and board processes, and that these governance effects manifest themselves most strongly in situations where boards are more powerful. We discuss these findings in terms of their relevance for theories of demography, agency, and power. Copyright © 2001 John Wiley & Sons, Ltd.

Do boards of directors impel, impede, or exert no effect on strategic change in organizations? Historically, this question has tended to be answered very differently in the academic literature and business press, and the differences hinge largely on one's belief regarding how boards function and what role they typically play in strategic decision making in organizations. Despite the fact that boards have been the subject of considerable scrutiny in both scholarly research and the popular press, there is surprisingly little agreement regarding how boards behave and therefore how they may affect the development of an organization's strategy. The debate regarding the role of boards of directors typically has been framed by

alternative characterizations of boards. Some have viewed boards as "rubber stamps" (Herman, 1981) or "tools" of top management (Pfeffer, 1972: 219) who rely heavily on top management for leadership, direction, and information. This line of research, inspired by scholars emphasizing power in organizations (Zajac and Westphal, 1996) and agency relationships (Jensen, 1989), has tended to emphasize how powerful CEOs, through a variety of behaviors, ensure that boards have essentially no effect on a firm's strategy or changes in that strategy. Others increasingly see boards as independent thinkers who generally take an active role in shaping the strategic direction of their organization (Walsh and Seward, 1990; Davis and Thompson, 1994; Finkelstein and Hambrick, 1996) (such high levels of board interest in strategy could, of course, be directed toward either changes in an organization's strategy or the preservation of the status quo). Interestingly, this view of active

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boards has been motivated by scholars from two different research traditions: one focusing on the demography of boards as part of a supra top management team (TMT) (Finkelstein and Hambrick, 1996), and the other focusing on issues of power and agency, in which boards are seen as gaining the upper hand *vis-à-vis* top management.

The extremely divided conceptualizations of boards as passive vs. active has led to very different conclusions regarding both prescriptions and descriptions of board behavior (e.g., Fama and Jensen, 1983; Lorsch and MacIver, 1989; Vance, 1983). The increased scrutiny on board activities has come from not only academic researchers, but also government regulators and the business press, and has led to overall conclusions ranging from commending boards for their achievements to condemning them for their shortcomings. Most of the recommendations emerging from this corporate governance debate tend to revolve around changes in board structure, such as increasing the proportion of outside directors, that are aimed at increasing the independence of board decision making. While independence of judgment is an important legal issue, another relevant issue—from an organizational perspective—has gone largely unaddressed: when boards think, act, and decide independently of top management, what will boards want, and are there particular conditions under which they are more likely to get what they want?

Nowhere is this question more relevant than in the determination of an organization's strategy. For these reasons, this study analyzes the influence of the board on strategic change. Specifically, we hope to help reconcile the debate on how boards behave by suggesting that for any given population of organizations, there may be considerable variation in the demographic and processual profile of boards, and that this variation will affect the role of the board *vis-à-vis* strategic change. Our intent here is to develop and test a model that specifies in some detail the characteristics of boards that suggest when boards will have a greater inclination for strategic change (and when they will have a preference for the status quo). We will discuss why we believe that the effect of board demography on strategic change is likely to be curvilinear, which has the additional benefit of enabling us to clarify some of the conflicting findings in prior top management team and groups literature that has examined demographic indicators.

We discuss further why we believe that other board processes not related to demography, by increasing a board's attention to strategy, can also affect strategic change. Finally, while our study focuses primarily on identifying those demographic and processual features of boards that significantly predict strategic change, we also build on this base model by proposing that such features will also interact with a board's power to affect change, generating a multiplicative effect on strategic change. Conceptually, our integrative approach avoids unnecessary debate as to whether theories of demography, agency, or power best predict how boards are likely to behave, and with what strategic consequences. Our study views all three theories as relevant in contributing to a more comprehensive and realistic theory of how boards may influence strategic change.

An ideal empirical context for testing our model of when boards influence strategic change would have the following features. First, the organizations under study would be facing changing environmental conditions and would therefore be reconsidering traditionally accepted strategies. Second, there would be some controversy/ambiguity surrounding the appropriateness of changing strategies. Third, one would have a large sample of organizations with variation across boards of directors, in terms of demographic and processual factors that could affect a board's inclination or power to promote strategic change. Finally, one would also be able to define and observe empirically strategic changes. The U.S. hospital industry provides an excellent arena for predicting and assessing empirically how boards can affect strategic change, insofar as it meets all of the empirical desiderata mentioned above. We therefore test our model using survey and archival data from a sample of approximately 3000 U.S. hospitals.

THEORY AND HYPOTHESES

In this section, we develop the argument that a number of demographic and processual features of boards of directors may suggest a differential inclination of the board toward strategic change. While prior studies have examined some of these features, most have focused on a smaller set of factors than examined here (Goodstein, Gautam, and Boeker, 1994). Studies that capture elements of board processes are even more rare. In addition,

prior research on the role of group demography often offers conflicting arguments and inconsistent findings, which we suggest can be reconciled by considering the likely nonlinearity of the relationship between such variables and group inclinations for change. Finally, prior research has generally not developed the linkage between these features and their implications for differences in inclinations, power, and strategic change (Zajac and Westphal, 1996). In this study, we address each of these issues, beginning with a discussion of how specific demographic features of boards imply differences in a board's inclination for strategic change.

Board demography

Given that boards can be conceptualized as a group of individuals, one important issue that can affect the working of that group is its size. Some prior research (Dalton *et al.*, 1999; Pearce and Zahra, 1992) has argued that board size is positively associated with breadth of perspectives in the planning process. Similarly, Lorsch and MacIver (1989) and Pfeffer (1983) have claimed that larger boards are able to draw on a larger pool of expertise (see also Janis, 1989, for a review). With respect to our question of a board's inclination for strategic change, the arguments discussed above suggest that, on average, the insufficient breadth of expertise in smaller boards has several implications: an inadequate recognition of the need to initiate or support strategic change, a lack of a clear understanding of alternatives, and/or a lack of confidence in recommending strategic change. All of these consequences imply a lower inclination for strategic change for relatively small boards.

However, social psychological research on groups (e.g., Janis, 1989; Latane, Williams, and Harkins, 1979) suggests that larger groups often suffer from a diffusion of responsibility or "social loafing," whereby individuals discount the likelihood that their poor contributions (in effort or quality) will be detected by others. Perhaps not surprisingly, economists have devoted considerable attention to the fundamental problem of "free riders" in groups involved in common efforts (e.g., Alchian and Demsetz, 1972). Free-rider arguments, interestingly, while rarely invoked in the context of boards of directors, have been used in discussions of why dispersed ownership of corporations is worse than concentrated ownership

(Demsetz and Lehn, 1985). Research on the diffusion of responsibility and the free-rider problem in small groups also suggests that at high levels of group size, there may actually be a 'collective action' problem that reduces the group-level inclination for strategic change. For example, Ocasio (1994) and Zahra and Pearce (1989) suggest that larger boards are prone to factionalization and in-fighting. Goodstein *et al.* (1994) discuss these two contrary views and conclude that the logic against large groups generating change is more compelling.

We find both logics compelling: board size may be either positively or negatively associated with strategic change, and both positions have been well argued in the literature. Further, there is much empirical evidence in the group decision-making literature to support both positions. We suggest that it is possible to reconcile these conflicting views, both empirically and theoretically. For example, previous findings may have been influenced by restricted ranges of their variable of interest (i.e., group size). Researchers who have observed a positive relationship between group size and some decision making variable may have examined groups which are not so large as to diminish their decision making capabilities (e.g., smaller than eight members, as suggested by Kameda *et al.*, 1992). Likewise, researchers who have observed the opposite finding may have examined groups that, in general, are sufficiently large so as to have a negative impact on their decision-making capabilities.

Rather than arbitrarily choosing between two theoretically compelling contrary arguments, we propose that one should consider theoretically (and empirically) the possibility of curvilinearity in the relationship between board size and strategic change. When board size is very small, the benefits of the breadth of perspectives are significant, but these benefits are subject to diminishing returns as board size increases. Similarly, when board size is very large, the disadvantages of diffusion of responsibility, free-riding, and factionalization are most severe, and there are comparable diminishing negative returns to such disadvantages as board size decreases. Note that we are suggesting that the two "opposing" arguments are not rival explanations, as has been assumed in prior research, but rather that the two explanations can be combined meaningfully. In other words, increases in board size are likely to be a positive force for strategic

change when boards are smaller, and a negative force when boards are larger. Taken together, this suggests an inverted u-shaped relationship between board size and strategic change:

Hypothesis 1: As board size increases, its effect on strategic change will be positive for smaller boards, and negative for larger boards.

Another factor that is likely to indicate differential inclination for strategic change is board tenure. The traditional perspective is typified by Katz (1982), who suggests that greater tenure is associated with greater rigidity, increased commitment to established practices and procedures, and increased insulation toward new ideas. Pfeffer (1983:324) also suggests that 'for change or adaptation to occur, there must be some infusion of new blood into the organizational context.' These suggestions are consistent with the empirical findings of Finkelstein and Hambrick (1990), who found a positive relationship between top management team tenure and strategic persistence. Similarly, Boeker (1997) reports a negative relationship between top management team tenure and strategic change, and that this relationship becomes increasingly negative under conditions of poor organizational performance.¹ Psychologists also suggest that once individuals are committed to a course of action, and this commitment is publicly acknowledged, they are reluctant to change (Staw, 1976).

In contrast, others have made more positive arguments regarding organizational tenure. For example, Fiske and Taylor (1991) argue that greater experience provides individuals with a much more comprehensive access to a richer stock of remembered information, relative to what novices can access (Hambrick and Mason [1984] make similar arguments). Zenger and Lawrence (1989) suggest that tenure is positively associated with communication frequency, and Roberts and O'Reilly (1979) argue that too much change in organization membership disrupts communication networks. Pfeffer (1983) combines these two streams of thought in his discussion of administrative turnover, arguing that turnover may be curvilinearly related to change. He suggests

that organizations with little turnover experience rigidity of values, perspectives, and behaviors, but high rates of turnover also create a situation where newcomers have insufficient institutional knowledge. Interestingly, Wiersema and Bantel (1992) found a positive relation between TMT tenure and strategic change, but this result only held for a restricted range of tenure, i.e., TMTs having an average tenure of only 5 years or less.

The mixed findings of Wiersema and Bantel (1992), and the alternative logics found in the literature, highlight a potential nonlinearity in the relationship between board tenure and strategic change. With respect to a board's inclination for strategic change, a board with very low average tenure would have a much less rich information base from which to draw, suggesting less interest and confidence in recommending strategic change, and thus implying a lower inclination for strategic change. However, boards with very high average tenure are likely to be more rigidly committed to the strategic status quo. Again, neither argument by itself is likely to satisfactorily explain the relationship between board tenure and strategic change. Instead, we once again suggest that both arguments can coexist, with each having relevance over a particular range of tenure. That is, increasing tenure impels strategic change for low-tenure boards, and impedes it for high-tenure boards. Thus, we propose an inverted u-shaped relationship between board tenure and strategic change:

Hypothesis 2: As average board member tenure increases, its effect on strategic change will be positive for boards with lower levels of tenure, and negative for boards with higher levels of tenure.

A related, yet distinct, argument can be made regarding the average age of members of a board. In a discussion of top managers, Hambrick and Mason (1984) theorized that younger managers favored more change (e.g., growth strategies). Grimm and Smith (1991) and Wiersema and Bantel (1992) found that the age of top management team members was negatively associated with strategic change. Again, psychological research seems to suggest a similar pattern, in general. Vroom and Pahl (1971), for example, found a negative relationship between age and risk taking by managers, and Hitt and Tyler (1991) found similar results for top executives. There is also evidence

¹ We recognize that our literature citations are from diverse research studies involving college sophomores, TMTs, boards, government committees, etc. This eclectic approach is appropriate, however, given that our hypotheses are based on basic questions/issues that affect decision making groups in general.

for a relationship between age and specific behavioral tendencies, such as managerial decision making style. Taylor (1975) found that older executives sought more information before making decisions, and took more time in making them. Thus, with respect to a board's inclination for strategic change, boards comprised of older board members are likely to be more risk averse, thus implying a lower inclination toward changing strategies.

Note, however, that to perform their duties and responsibilities effectively, board members in complex organizations require significant business, organizational, and/or community leadership skills, and these skills accumulate over time (Finkelstein and Hambrick, 1996). Further, board members' decisions have the potential to have a sizable impact on the organization as well as the community, suggesting that the rich experience of older executives provides them with greater confidence that they have sufficient information to act. Consequently, very young board members, relative to their more senior colleagues, may lack the confidence or experiences to recommend strategic change in complex organizations (consistent with the earlier logic regarding board member tenure). This suggests that increasing the average age of the board may have a positive impact on strategic change for a younger board, but a negative impact on an older board. We hypothesize the inverted u-shaped relationship between average board member age and strategic change as follows (similar to the tenure/change relationship posited in Hypothesis 2):

Hypothesis 3: As the average age of board members increases, its effect on strategic change will be positive for younger boards, and negative for older boards.

Several authors have addressed the behavioral implications of group heterogeneity along a variety of dimensions, such as age, functional or occupational background, etc. (Guzzo and Dickson, 1996; Jackson, 1991). Pfeffer (1983:325), for example, suggests that "most change and adaptation is accomplished in organizations through bringing in persons from different organizational backgrounds with different perspectives and knowledge." Eisenhardt and Bourgeois (1988) also find that diversity in management teams results in a broader range of strategic decisions. Ireland *et al.* (1987) argued that individuals of similar age have

similar life experiences and potentially similar schemas for interpreting such things as environmental events. Hambrick and Mason (1984) also argue for a "cohort effect," i.e., that groups whose members are linked by a "common date" and share similar experiences/history (though perhaps not together) will think similarly about issues. An implication of this reasoning is that this commonality of experiences will limit the breadth of strategic alternatives generated and considered. Social psychological research has shown that ill-defined, novel problem solving is best done with a heterogeneous group (Follett, House, and Kerr, 1976). Further, the risk of "group think" and inertia (i.e., not deviating from the status quo) is greater in homogeneous groups (Janis, 1982).

Our purpose is not to review in detail the extensive literature on group homogeneity, but rather to highlight the major issues raised in that literature. Overall, a stream of research from several disciplines suggests that group heterogeneity is positively related to creativity and decision making quality in work teams (see Jackson, May, and Whitney, 1995 for a review). In the particular case of occupational heterogeneity, research on group heterogeneity would suggest that boards whose members' experiences vary widely are most likely to generate and consider a broad array of strategic options.

In contrast, much research suggests that with group heterogeneity comes a variety of group process difficulties (see Triandis, Kurowski and Gelfand, 1994). For instance, group heterogeneity has been associated with uncoordinated group action, decreased group cohesion, and ineffective communication resulting from the lack of a shared language (O'Reilly, Caldwell, and Barnett, 1989; Zenger and Lawrence, 1989). Further, while diverse experiences may lead to the generation of a wide variety of strategic alternatives, this breadth of experiences may also result in an inability to agree on means and objectives (Zajac, Golden, and Shortell, 1991). Boards comprised of individuals from a variety of occupations may also have difficulty coming to a shared understanding of industry change, and may therefore be less inclined to reach a commonly agreed upon change program. Thus, while heterogeneity on a dimension such as occupational experiences may have important positive effects on generating needed boardroom recognition and discussions regarding strategic change, such fundamental benefits may have diminishing

returns. At very high levels of heterogeneity, the drawbacks of conflicts are greatest, and can impede acting on those discussions. Again, we are able to combine the seemingly rival explanations into coexisting explanations, each with greater relevance over a particular range of heterogeneity:

Hypothesis 4: As occupational heterogeneity increases, its effect on strategic change will be positive for less heterogeneous boards, and negative for more heterogeneous boards.

Finally, we can address the issue of the occupations themselves. Research on group decision making has shown that groups tend to make inferior decisions when they are “insulated from qualified observers” (Tetlock *et al.*, 1992). Also, as argued above, board members with different occupational backgrounds bring to the board a diversity of orientations, and hence, a likely diversity of opinion on strategic action. Early suggestions of this proposition are found in Hambrick and Mason (1984), who suggested that executives carry with them “cognitive givens” (i.e., mental maps or schema) which result from their career experiences. More recently, Forbes and Milliken (1999) have theorized that if boards are to perform effectively, they must integrate their knowledge—particularly in the areas of law and business. Together, these arguments imply that the career experiences of board members are likely to influence decisions.

To illustrate this proposition for boards, we can consider the example of an organization that has both an explicit business mission and an explicit community mission (this context fits particularly well with the sample of organizations studied here, as will be discussed). If a board is primarily comprised of members whose occupations are in the business sector, as opposed to the community or governmental sector, one would expect the board to represent primarily the business interests of the organization. For instance, Alexander, Fennell and Halpern (1993) proposed that when CEOs and boards represent business concerns (as opposed to nonbusiness or professional concerns), organizational adaptation in the hospital industry will be facilitated. Also speaking to this likelihood is a recent study of how hospital managers and physicians interpreted issues and made strategic decisions. Golden, Dukerich, and Hauge (2000) found managers to be significantly more likely

to consider and represent the strategic interests of the hospital as opposed to the needs of individual patients and the community. This study indicates that the career experiences of decision makers influence strategic decisions.

We expect business leaders on boards to represent the business interests of the organization, and to be particularly receptive to the need for an organization to change adaptively. As the findings of Golden *et al.* (2000) imply, board members with business backgrounds are likely to pursue the high level goal of making the best “business decisions”. With this goal in sight, they are likely to be relatively open to the addition or divestiture of any *particular* service lines, and likely to coalesce around such decisions when they are viewed as improving the survival chances of the organization. Under times of increasing market competition, we would therefore expect greater agreement and momentum for action for boards with a high percentage of business people.

In contrast, community leaders are more likely to discount a business or competitive orientation, and emphasize instead their role on the board as solidifying the influence of a particular constituency group that they represent. Protecting the needs of their constituencies is likely to foster more of a status quo orientation. Moreover, to the extent that nonbusiness-oriented stakeholders representing various groups in the community (e.g., AIDS patients, the poor, religious groups) are interested in change, it would likely be to add specific service lines that serve their particular constituencies (cf. Freeman, 1984), thus increasing the likelihood of disputes over conflicting goals, politicized gridlock in decision making, and thus a lower collective board-level inclination for strategic change.

These arguments about occupational differences suggest different orientations in favor of or against strategic change, with boards dominated by business-oriented members being relatively more likely to push for strategic changes. While very large U.S. corporations may typically not vary much on this dimension, our sample of smaller organizations (discussed below) fortunately does, which allows us to make and test the following hypotheses:

Hypothesis 5: The proportion of board members from business occupations is positively related to strategic change.

Board process

We recognize a potential limitation in our arguments thus far—one that is shared by virtually all researchers using demographic indicators of a group of individuals. Specifically, an implicit assumption in prior hypotheses regarding a board's inclination toward strategic change is that our demographic factors capture the collective orientation of the board. This approach is supported by Pfeffer's (1983) arguments that demographic variables provide parsimonious and objective representations of constructs that are otherwise difficult to collect and validate, especially for corporate elites. There is also a rich tradition of more recent research employing demographic variables in the study of top management, e.g., Bantel and Jackson (1989), Chaganti and Sambharya (1987), Finkelstein (1992), Fligstein (1987), Michel and Hambrick (1992), Wiersema and Bantel (1992), and Zajac and Westphal (1996). These studies—and organizational demography research in general—view demographically similar individuals as developing comparable attitudes, cognitive schemas, and a shared language by virtue of common experiences and similar choices (Allen and Cohen, 1969; Rhodes, 1983).

Nonetheless, it would be ideal if one could also consider board process issues more directly and develop and test hypotheses based on those issues. Thus, in an attempt to complement research on board demography, we suggest that additional process-related factors can affect a board's inclination toward strategic change. Specifically, Ocasio's (1997) discussion of an attention-based view of the firm draws our attention to the impact that decision-makers' attention has on firm behaviors. His arguments, building on a foundation of five decades of managerial cognition research, suggest that 'decision makers focus their attention on a limited set of issues ... and the issues and answers they attend to and enact determines what they do' (Ocasio, 1997: 192). Ocasio's arguments are largely focused on predicting organizational adaptation by considering what influences decision-maker's attention. Adopting a similar theoretical perspective, Forbes and Milliken argue that a board's output is primarily "cognitive in nature" (Forbes and Milliken, 1999: 492), and consider of vital importance how boards allocate their decision-making attention. As a rare empirical study of board attention, Pearce (1983) examined

whether directors were primarily concerned with internal or external issues, and that study revealed substantial variation in board attention.

Given the breadth of issues facing organizations in turbulent markets, boards of these organizations are likely to vary regarding the types of issues that capture their attention, as well as the degree of attention they devote to particular issues. Thus, in this study we investigate board attention, and refine the concept to refer more specifically to strategic vs. nonstrategic issues (where nonstrategic refers to internal administrative concerns or external activities not related to strategy). We propose that boards that devote greater attention (i.e., spend more time) on strategic issues will also be more familiar and aware of the question of strategic change, and hence, more inclined to impel such change. In contrast, boards with a more internal focus, may also be influential. However, their power will not likely be manifest in strategic change. Thus, we suggest that the attention boards give to strategic issues will be revealed in service mix changes over time (cf. Ocasio, 1997). We state this as the following hypothesis:

Hypothesis 6: Board attention to strategic issues (relative to nonstrategic issues) is positively related to strategic change.

In addition to how boards devote their attention to strategic (vs. nonstrategic) issues, boards may reveal their involvement in the change process through their monitoring activities. Corporate governance experts have long contended that a major function of the board is the evaluation of CEO performance (Vance, 1983). Thus, another potentially relevant process consideration that affects board attention is the degree to which the board evaluates top management performance. We suggested earlier that boards comprised largely of members with a dominant business orientation are more likely to have the experiences and confidence to influence change. Complementing that prediction is our belief that boards, by comprehensively evaluating CEO performance, reveal their interest in the performance of the organization. In addition to signaling the board's interest, boards that engage in comprehensive evaluations are likely to be relatively knowledgeable. This is consistent with the arguments of several theorists who, relying on agency theory, have suggested that control requires

assessments of outcomes and/or behaviors (Eisenhardt, 1985; Govindarajan and Fisher, 1990). Since relying exclusively on outcomes puts the CEO at risk, assessments of behaviors are preferred (though costly). However, despite their costs, such board comprehensiveness indicates its relatively great knowledge of the organization.

We suggest that boards that engage in comprehensive evaluations of the CEO are likely to be—and see themselves as—well informed about the strategic direction of the organization. They will also be better equipped to shape the direction of the organization, and they will also likely have more confidence in their ability to do so. Conversely, boards that do not actively engage in CEO evaluations are not expected to engage in the strategic change process to the same degree, nor are they expected to actively support or propose change. The increased awareness and confidence of the active board suggests a greater inclination for the board to impel strategic change, leading to the following hypothesis:

Hypothesis 7: The comprehensiveness of a board's evaluation process is positively related to strategic change.

Board power

Thus far, we have suggested that a number of demographic and processual features of boards of directors may affect a board's inclination toward strategic change. We have sought to focus on a wider set of factors than is typically analyzed in a single study. However, as noted earlier, while the prior hypotheses each add to an overall assessment of the likely inclinations of an independently minded board toward the concept of strategic change, another issue requires consideration; namely, under what conditions are such independent inclinations or preferences likely to be realized.

Interestingly, while a very large body of research has grown in the area of organizational and group demography, there is surprisingly little attention devoted to how the social context in which groups find themselves may affect the relevance of demographically based preferences. Perhaps this is not surprising, since much of the work on group demography seeks to explain fundamental differences in decision making preferences while holding constant other contextual factors with

experimental designs. In organizational life, however, such preferences are situated in a social world defined by, among other things, power relationships (Pfeffer, 1981), in which preferences without social power may have no impact on behavior.

In our study, it could be argued that at the extreme, weak boards, regardless of their expertise, experience, confidence, and general inclinations and preferences, will not be as likely to influence strategic change to the same extent as similarly inclined powerful boards. Zajac and Westphal (1996) have recently introduced a similar discussion in the context of CEO succession, showing that board preferences for a particular type of CEO were more likely to be realized when the board was more powerful. In other words, preferences or inclinations may be an important initial condition, but power amplifies the observed effect of those preferences. Thus, for each of the prior predictions, we pose the following moderating relationship:

Hypothesis 8: The relationship between a board's inclination for strategic change and subsequent actual strategic change (as proposed in Hypotheses 1–7) is stronger when boards are more powerful.

METHOD

Sample and data collection

The U.S. hospital industry, during the period 1985 to 1990, was chosen as the empirical setting for this study. Several factors led to this decision. First, we were interested in the power of boards in strategic change, and the U.S. hospital industry during this period experienced significant turbulence, uncertainty, and increasing competition (Alexander *et al.*, 1993; Shortell, Morrison, and Friedman, 1990), all of which placed a premium on achieving an organization–environment fit. Previous to 1983, U.S. hospitals were largely reimbursed on a cost-plus basis, thus dampening the impact of competition and virtually eliminating the threat of hospital closures. However, 1983 marked the introduction of a three-year phase-in of the Medicare Prospective Payment System (PPS). Under this system, hospitals were reimbursed an amount set by the federal government for 468 of the most commonly performed services to Medicare patients. Parallel reimbursement schedules were implemented by the private insurers of

non-Medicare patients. Thus, the introduction of the PPS legislation represented a major environmental jolt (Meyer, 1982) to the entire hospital industry. As a consequence of this new payment system, hospitals that could provide services at costs below the reimbursement levels were able to realize profits; hospitals that could not had to absorb losses for those service lines. More specifically, the industry experienced a substantial decrease in financial performance; median total profit margins dropped from 4.6 to 3.0 percent in 1984 and 1987, respectively (Shortell *et al.*, 1990). Overall, then, the PPS led to a substantial increase in competition, and thus, the need to manage strategically (e.g., develop a portfolio of potentially profitable service lines). The 5-year window of this study allowed sufficient time for the effects of the Prospective Payment legislation to be fully realized and for hospitals to implement a program of strategic change.

A second motivation for our choice of industry is based on others' observations that boards of directors have frequently been far removed from shaping the strategies of firms (cf. Herman, 1981; Zahra and Pearce, 1989). However, Judge and Zeithaml (1992), in a study predicting the level of hospital board involvement and the financial performance implications of such involvement, note that hospital boards tend to be relatively more involved in strategy formation than boards in other industries. This may be explained by boards' inclinations to increase their involvement in activities during periods of organizational threat and crises (cf. Lorsch and MacIver, 1989). Third, a potential weakness of multi-industry board studies is their inability to control for possible confounding effects of external contextual variables (e.g., industry life cycle, regulation). A single industry study substantially minimizes this possibility.

Multiple data sources were used to test the hypotheses. Data on board characteristics and boards were obtained from the American Hospital Association's (AHA) 1985 Governing Board Survey. This survey was sent to both the CEOs and board chairs of 5800 AHA member hospitals. The advantage of administering the survey to both individuals (fewer than 3% of hospitals had a CEO who also chaired the board) is that any reporting differences were reconciled through follow-up inquiries. This survey elicited objective data such as board composition, frequency of meetings, the role of the CEO on the board (e.g., whether he/she

had voting privileges), and board compensation. The survey did not attempt to elicit attitudinal data about relatively subjective constructs such as perceptions of power. Instead, more structural and behavioral indicators of such constructs were used (e.g., whether the CEO was permitted to participate in the selection of board members). Product and service data were obtained from the AHA's Annual Surveys of Hospitals (1985 and 1990) which, among other things, elicit data about product and service offerings provided by each hospital (e.g., a newly created geriatric oncology program; the elimination of a mental health program). The AHA Annual Survey also reports outcome data such as operating expenses and capacity utilization. The Annual Survey is administered to all registered and nonregistered hospitals in the fourth quarter of each year ($N = 5800$). Finally, data provided by the Intergovernmental Health Policy Project were used to calculate the regulatory control variables discussed below.

A panel subset of hospitals was chosen for the study. Each hospital had to meet several conditions for inclusion in the sample. First, product/service data had to be available from both the 1985 and 1990 Annual Surveys. Second, the hospital must have responded to the separate 1985 Governing Board Survey (response rate was 56%). Third, we excluded hospitals if the Governance Survey indicated a change in CEOs during the 5-year period. This condition was critical since we are interested in how the relationship between the board and the CEO influenced strategic change from 1985 to 1990. To examine this question, it is necessary that a new CEO not be introduced into the firm during the intervening years. For example, if a CEO were replaced in 1987 (2 years after the initial survey), the data describing the relationship between the board and the (former) CEO would no longer provide an accurate description of the board-CEO relationship prior to measurement of the strategic change. Note that the third selection criterion may also constrain the variation on the board-CEO power measure, i.e., CEOs who have remained in their positions during this turbulent time period may be considered relatively powerful (Alexander *et al.*, 1993; Singh and Harianto, 1989; Westphal and Zajac, 1995). Of the 5800 hospitals that received the Governance Survey, a panel subset of 3198 hospitals met all three selection criteria and were thus included in this study.

The panel of hospitals was compared to the population on a variety of dimensions. Specifically, we investigated differences in the size of the panel and population hospitals, measured by the number of hospital beds (Shortell *et al.*, 1990). No statistically significant differences were observed. Also, the panel hospitals were no more likely to be part of multihospital system corporations, nor were there differences in the size of the communities they served or in their occupancy rates. There were also no performance differences (based on occupancy and/or efficiency) between those hospitals that experienced CEO succession and those that did not. However, compared to the population of hospitals, the panel hospitals were slightly less likely to be investor owned (fourteen percent vs. seven percent), thus this was controlled for in subsequent analyses (see the Control Variables section below).

Dependent variable

A variety of approaches have been used to measure strategy and strategic change in the hospital industry. For example, Zajac and Shortell (1989) operationalized the Miles and Snow typology of strategy orientations by means of CEO key-informant reports over two time periods. These reports were then validated using archival data provided by the AHA and other sources. More recently, several authors (Goodstein *et al.*, 1994; Thomas, Clark, and Gioia, 1993) have suggested that changes in the scope of the firm represent important reactions to environmental turbulence in the hospital industry. These authors have suggested that changes in scope represent important strategic changes, even though the hospital's strategic orientation (e.g., the Miles and Snow type) may not change. Thus, for example, Goodstein *et al.* (1994) examined service additions, divestitures and reorganizations in the hospital industry. Also in the hospital industry, Thomas *et al.* (1993) used a measurement scheme first developed by Hambrick (1981), and similar to one used by Zajac *et al.* (1991), which calculated a weighted-difference change measure. We adopted this weighted difference approach in the present study given its use in previous research, and more importantly, because it is sensitive to both service additions and divestitures, thus having the strength of the Goodstein *et al.* (1994) measures. The weighted measure approach also allows one to distinguish between relatively mundane vs. more innovative strategic changes.

Specifically, a service that was added between 1985 and 1990, and that one-third or fewer of the hospitals offered in 1985, was assigned a weight of three. A weight of two was assigned to those services offered by between one-third and two-thirds of the hospitals, and a weight of one was given to services that greater than two-thirds of the hospitals provided. The weighted scores were then summed, resulting in the 1990 component for our change measure. A similar weighting scheme was used to determine a weighted count for all services provided by each hospital in the year 1985. (The only difference between the 1985 and 1990 components is that the 1990 component was a weighted change component for services added or deleted between 1985 and 1990.) The weighted 1985 score was subtracted from the weighted 1990 change score, thus representing the growth or decline in product/services from 1985 to 1990. Finally, the difference score was then divided by the weighted score for services originally offered in 1985, giving us the proportional change from 1985 to 1990. This adjustment was necessary since a change of five services represents a more significant change for an organization that previously provided 15 services than for one that provided 55 services. Note that the construction of *Strategic Change* variable is consistent with our theoretical agnosticism regarding the desirability of *particular* product/service changes. The use of this measure allows us to predict and test which of the heterogeneously comprised hospital boards in our sample, when faced with industry-wide and fundamental environmental changes, will be likely to alter significantly the product/service portfolio of their hospitals.

Independent variables

Board and board member characteristics

We used the Governance Survey to operationalize our hypotheses regarding a board's inclination or preference for promoting strategic change. *Board Size* (Hypothesis 1) was operationalized here, as in other studies, as the total number of board positions. *Board Size Squared* was calculated as the square of *Board Size* and was used to test our prediction of a curvilinear relationship between board size and strategic change. Precise data on the average tenure of board members were unavailable. Instead, we used data about the maximum number of years a board member could sit on the

board. This variable proxy should not distort our hypothesis test since one would expect that board tenure limits will be highly correlated with average board tenure (boards with relatively low tenure limits will, by definition, not have board members who have sat on the board for a considerable number of years). Nonetheless, some caution should be exercised when interpreting this potential finding. *Board Tenure* (Hypothesis 2) was measured as the maximum number of years that a board member could sit on the board. *Board Tenure Squared* was calculated as the square of *Board Tenure* and was used to test our prediction of a curvilinear relationship between board tenure and strategic change.

We predicted that average board member age would be associated with strategic change (Hypothesis 3). In order to minimize the time to complete the extensive governance survey, the survey did not require the respondent to report the age of each board member. Instead, respondents indicated how many board members were less than 30 years of age, between 31 and 50, between 51 and 70, and 70 years of age and over. From these data *Board Member Age* was calculated as the percentage of board members who were greater than 50 years of age (again, some caution should be exercised in interpreting findings using this variable). *Board Member Age Squared* was calculated as the squared term of this measure.

Occupational Heterogeneity and *Occupational Heterogeneity Squared* were calculated to test Hypothesis 4, and the former was operationalized using a measure similar to a Herfindahl index. Based on organizational records and the respondents' knowledge of board members' occupations, board members were classified as belonging to one of 14 mutually exclusive groups (See Appendix). *Occupational Heterogeneity* was calculated as the percentage of members in each of the 14 groups squared, and then summed. Thus, the theoretical range of this value was from close to 0 (i.e., 14—equally represented—occupational groups) to 1 (i.e., a single occupational group). Alexander *et al.* (1993) used this measure in their study of CEO succession.

We also created a *Business Orientation* measure, based on the notion that industry experiences and the managerial expertise of board members are relevant predictors of organizational actions and outcomes (Boeker and Goodstein, 1991; Mizruchi and Stearns, 1988; Zald, 1967). Following Alexander *et al.* (1993), this measure was calculated

as the proportion of board members whose primary occupations were of a business or legal nature, namely, other hospital CEOs, nonhospital corporate executives, independent business people, banker/financiers, and lawyers. We included the legal profession due to the importance of the legal environment for hospitals, and in theory, for legal experts' ability to aid in strategic decision making (cf. Forbes and Milliken, 1999) (we also performed the analyses excluding the lawyer category and found similar results.) Representation in the five occupational categories was contrasted to membership in nine occupational categories such as educator, nurse, government official, religious leader, among others.

In order to test the two board attention hypotheses and their implications for the boards' support of strategic change (Hypotheses 6 and 7), we first measured boards' attention to strategic vs. nonstrategic issues. Specifically, the respondents indicated which of eleven issues occupied most of their board's time over the past year (See Appendix). Of the 11 issues, three were explicitly strategy related: (1) Diversification, mergers, and joint ventures, (2) Strategic planning, and (3) Hospital's competitive position. We used this information to create a dichotomous measure, *Attention to Strategy*, with 1 indicating that one of the three strategy related issues occupied most of the board's time, and 0 indicating that primary attention was devoted to a nonstrategic issue (e.g., professional standards of patient care, clinical privileges to the medical staff). The dichotomous measure was deemed appropriate, given the subjectivity inherent in any attempt to establish a rank ordering of more vs. less strategic activities from the list discussed above. Given that discriminating between strategic and nonstrategic issues can also be problematic (Mintzberg, 1987), our conservative decision to view only 3 of the 11 issues as strategic may have restricted the variance of this measure. It should be noted, however, that we also examined the inclusion of items 2 (CEO performance) and/or 9 (financial viability) in this measure. We found no substantive impact on our results. Whether these are "strategic" categories, or merely important, is debatable and thus we elected not to characterize these as strategic categories.

We also assessed the extent to which boards evaluated CEO performance (Hypothesis 7). *Comprehensiveness of CEO Evaluation* was calculated as the total number of criteria explicitly used by

the board to evaluate the CEO's performance. This variable ranged from zero, when no formal evaluation mechanism was used, to ten indicating that all ten criteria in the survey were explicitly considered. While the two measures used to test Hypotheses 6 and 7 are somewhat unusual, they both have the benefit of eliciting data that more closely captures board processes and board attention. As such these measures complement the demographic measures used in Hypotheses 1–5.

Board power

Power is a relational construct, i.e., individuals or groups have power only in relation to a referent (Emerson, 1962; Pfeffer, 1981). Thus, we consider here the relative power of the board over the CEO. As Alexander *et al.* (1993) suggested, power is a relatively abstract construct that may be subject to the various interpretations of survey respondents. Further, direct questions put to CEOs or board members about relative power will likely be subject to self-serving biases, thus lessening the validity of this approach (Cannell and Henson, 1974; Nisbett, and Ross, 1980; Tedeschi and Melburg, 1984). Thus, consistent with most recent research on board power (cf. Canella and Lubatkin, 1993; Harrison, Torres, and Kukalis, 1988; Rechner and Dalton, 1991; Singh and Harianto, 1989; Zajac and Westphal, 1996), we attempted to measure power using multiple behavioral and structural indicators. Specifically, to test Hypothesis 8, a *Board Power* index was calculated as an aggregate of four indicators of the board–CEO relationship with data from the Governance Survey.

An important advantage of using a survey instrument to obtain structural indicators of CEO/board relative power is that it: (1) enabled us to use indicators that were particularly appropriate to the industry studied, and (2) went beyond the limited set of publicly available indicators on which prior studies had to rely. For example, the first indicator of where boards were considered relatively powerful (relative to the CEO) measures whether the CEO was or was not a member of the nominating committee that selected board members. CEO exclusion indicates board power (or CEO weakness) since CEOs are expected to desire a role in governing board member selection (Lorsch and MacIver, 1989; Westphal and Zajac, 1995). Also, this variable was shown by Alexander *et al.* (1993) to be

strongly correlated with other measures of board power. Second, boards were considered relatively powerful if the CEO did not participate in the development of the hospital's mission statement. Third, given that several studies have suggested that board power is inversely related to CEO tenure (Alexander *et al.*, 1993; Finkelstein and Hambrick, 1989; Hill and Phan, 1991; Ocasio, 1994), we used this traditional measure of board power. Newer CEOs are thought to have had little time both to build social capital with important stakeholders, including board members (Fredrickson, Hambrick and Baumrin, 1988), and to increase the organization's dependency on them (Singh and Harianto, 1989). CEOs with long tenures can be considered powerful *vis-à-vis* the board, particularly in an industry such as health care, which has experienced substantial CEO succession in the last decade (Alexander *et al.*, 1993). Finally, boards were considered relatively powerful to the extent that the CEO was excluded from board votes (CEOs in the sample had a variety of voting privileges on the boards of directors, ranging from no voting privileges to full voting privileges).

Since each of these measures provides an indication of board power in a variety of domains, *Board Power* was calculated as the sum of the standardized measures; CEO tenure was reversed score. Thus, for example, the most powerful boards were those for which the CEO had low tenure and which prohibited the CEOs' involvement in mission statement development, the board nomination process, and board voting.

Control variables

Several control variables were used in the analysis since they could be expected to be related to both strategic change and several of the independent variables. Using data provided by the Intergovernmental Health Policy Project, Shortell, Morrissey, and Conrad (1985) calculated two regulatory measures which we used in the present study: the effect of Certificate of Need (*CON*) and Rate Review (*Review*) programs. Certificate of Need programs require hospitals to apply to regional governmental agencies for approval of new technology and service additions. *CON* was calculated as a factor-analytic variable involving the duration, restrictiveness, scope, and intensity of the regulation. Rate Review programs are similar

to the Medicare Prospective Payment System in so far as they establish standard rates for services on a state by state basis. *Review* was calculated as a factor-analytic variable comprised of restrictiveness, enforcement, and intensity of regulation. Goodstein *et al.* (1994) argued that the regulatory environment should be controlled for in research on strategic change, although they controlled for this factor by simply creating a dummy variable which distinguished between the pre-1983 (less regulation) and post-1983 (more regulation) periods. However, regulatory intensity varied across regions in the United States after 1983. Thus, we controlled for the measures used by Zajac and Shortell (1989), which account for this variation. *CON* and *Rate* were controlled for since they may influence the organization's ability and/or incentive to engage in strategic change.

Since poor organizational performance may also trigger strategic change, we controlled for performance using two important indicators of hospital performance in the analyses. Occupancy rate (*Occupancy*), available from the AHA's annual guide, represents the change in excess capacity of the sample hospitals from 1985 to 1990. Because excess capacity is a non-recoverable fixed cost, a decreasing occupancy rate over the study period represents a performance gap which may trigger strategic change (Shortell *et al.*, 1990). *Occupancy* is based on the percentage of *staffed* beds that are or are not occupied. An additional and conceptually distinct indicator of performance is our *Efficiency* measure. This measure was calculated in two steps using AHA data. First, an efficiency measure was calculated for both 1985 and 1990 as operating expenses divided by the number of full-time equivalent employees. The 1985 measure was then subtracted from the 1990 measure and this value was divided by the 1985 measure, thus representing a change in operating efficiency from 1985 to 1990. To aid in the interpretation of this variable, *Efficiency* was reversed scored so that lower values represent decreased efficiency during the study period (i.e., increased operating costs per employee), and higher values represent improvements in efficiency. This measure was used in recent hospital industry research by Craycraft (1999) and Magnussen (1996) (the latter study notes explicitly that this efficiency measure is highly correlated with several other standard measures of hospital performance).

Shortell *et al.* (1990) speculated that, compared to other ownership types (e.g., not-for-profit), investor-owned (i.e., for-profit) hospitals may be more cognizant of changing environmental conditions. Thus, investor-owned hospitals may have been more inclined to change strategy during the study period. Although investor-owned hospitals represent only about seven percent of our sample, we controlled for ownership control. This control variable, *Ownership*, was calculated as a dichotomous variable with the value of 0 indicating investor owned/for-profit organizations, and the value of 1 indicating not-for-profit status. We also created the *System* variable to control for the possibility that the hospital was part of a multi-hospital system (*System* = 0) as opposed to free standing (*System* = 1). Because larger hospitals may face different forces influencing the ability to change (e.g., organizational inertia), we also controlled for hospital size, using a measure common to the hospital industry: *Bedsizes* was calculated as the total number of available beds in the hospital (cf. Shortell *et al.*, 1990). Descriptive statistics and the zero-order correlations for each of the measures are presented in Table 1.

Data analysis

The earlier theoretical discussion suggests the need to test our predictions in two steps. The first stage involves the tests of our predictions about the relationship between board inclinations and strategic change. Given that the dependent variable is continuous, wide-ranging, and captures a measure temporally subsequent to the independent variables (Johnston, 1984), Hypotheses 1–7 were tested with Ordinary Least Squares (OLS) multiple regression analysis. We then proceed to test our argument (Hypothesis 8) that the strength of these relationships is moderated by *Board Power*. Thus, for example, we predict that the effect of the board's business orientation on strategic change will be particularly strong when these boards are powerful; where boards are relatively weak, we expect that the effect of business orientation on strategic change will be diminished somewhat. Our second set of analyses therefore involves conducting separate OLS regression analyses of the effect of board characteristics on strategic change for high board power and low board power subsamples (i.e., the full sample is split into subgroups at the median value of *Board Power*).

Table 1. Descriptive statistics and zero-order correlation

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 CHANGE	-0.088	0.421																			
2 BEDSIZE	137.126	72.752	0.089																		
3 CON	0.000	1.000	-0.016	0.040																	
4 REVIEW	0.000	1.000	0.017	0.059	-0.035																
5 OCCUPANCY	0.045	0.333	0.002	-0.085	0.002	-0.036															
6 EFFICIENCY	-0.165	1.574	0.113	-0.001	0.017	-0.018	-0.016														
7 OWNERSHIP	0.076	0.266	-0.063	-0.008	-0.036	-0.030	-0.030	0.006													
8 SYSTEM	1.678	0.467	-0.136	-0.147	0.087	0.002	-0.007	0.008	-0.268												
9 BOARD SIZE	14.333	10.093	0.139	0.171	0.072	0.268	-0.034	-0.012	-0.145	-0.066											
10 BRD. TENURE	17.973	8.853	0.058	-0.052	0.010	0.014	0.005	0.010	-0.085	0.175	-0.078										
11 BRD. MEM.	0.533	0.260	0.067	0.047	0.056	0.070	-0.012	0.033	-0.199	0.071	0.078	0.125									
AGE																					
12 OCCUP. HET.	-0.249	0.152	0.042	0.066	0.029	0.083	-0.018	-0.023	-0.234	0.021	0.307	-0.108	-0.016								
13 BUS. ORIENT.	0.398	0.246	0.085	0.036	0.026	0.041	-0.020	0.045	-0.123	0.093	0.148	0.036	0.100	-0.041							
14 ATT. TO	0.397	0.489	0.054	0.081	-0.017	0.054	-0.005	-0.017	-0.024	-0.096	0.117	-0.097	-0.011	0.079	0.034						
STRAT.																					
15 COMPR. OF	3.121	3.415	0.092	0.084	0.009	0.018	-0.013	-0.019	-0.011	-0.152	0.095	-0.129	-0.029	0.067	0.005	0.116					
EVAL																					
16 BRD. SIZE.	307.286	718.472	0.075	0.121	0.062	0.171	-0.020	-0.003	-0.081	-0.021	0.847	-0.005	0.044	0.162	0.103	0.070	0.043				
SQ.																					
17 BRD. TEN.	401.358	277.918	-0.064	-0.059	0.009	0.009	0.003	0.011	-0.064	0.172	-0.090	0.995	0.121	-0.119	0.030	-0.104	-0.139	-0.011			
SQ.																					
18 BRD. MEM	3.829	2.998	0.118	0.136	0.036	0.167	-0.026	0.003	-0.040	-0.094	0.600	-0.123	0.281	0.140	0.145	0.105	0.108	0.424	-0.128		
AGE SQ																					
19 OCCUP. HET.	-0.085	0.138	0.030	0.044	0.027	0.041	-0.006	-0.015	-0.199	0.035	0.233	-0.090	-0.002	0.937	0.078	0.064	0.041	0.115	-0.098	0.111	
SQ.																					
20 BRD. POWER	-0.093	2.237	-0.133	-0.114	-0.018	-0.133	0.037	0.040	0.042	0.139	-0.366	0.155	-0.042	-0.217	-0.103	-0.169	-0.132	-0.203	0.162	-0.267	-0.180

N = 3198; Correlation coefficients greater than 0.04 are significant at the 0.05 level or less.

RESULTS

To reiterate, the hypotheses posit that (1) board demography and processes influence the board's inclinations or preferences for strategic change, and (2) the extent to which these inclinations or preferences are related to strategic change is moderated by board power. Table 2 shows the results of the regression analyses for Hypotheses 1–7, and each is discussed below.

Hypothesis 1 predicted that board size will be positively related to strategic change for smaller boards, but negatively related to strategic change

for larger boards. The analyses revealed support for this prediction. The root term is significantly positive, while the squared term is significantly negative. Also supported was Hypothesis 2, which predicted a similar inverted u-shaped relationship between board member tenure and strategic change. As Table 2 reveals, the root term for board member tenure is significant and positive, while the squared term is significant and negative. Thus, as predicted, board member tenure can be seen to be positively associated with strategic change for lower levels of tenure, and negatively associated with strategic change for higher

Table 2. Regression analysis: determinants of strategic change (full sample)

BEDSIZE	4.167E-04*** (0.000)	2.893E-04*** (0.000)	2.677E-04*** (0.000)
CON	0.003 (0.005)	−0.002 (0.005)	−0.002 (0.005)
REVIEW	0.009 (0.005)	−0.005 (0.006)	−0.099* (0.006)
OCCUPANCY	0.031* (0.017)	0.033* (0.017)	0.035** (0.017)
EFFICIENCY	0.024*** (0.003)	0.024*** (0.003)	0.024*** (0.003)
OWNERSHIP	−0.070 (0.023)	−0.030 (0.024)	−0.005 (0.025)
SYSTEM	−0.085*** (0.012)	−0.066*** (0.012)	−0.061*** (0.012)
BOARD SIZE		0.004 (0.001)	0.008*** (0.001)
BOARD TENURE		−0.002*** (0.001)	0.012* (0.007)
BRD. MEMBER AGE		0.087*** (0.022)	0.086*** (0.023)
OCCUP. HET.		−0.016 (0.040)	0.294** (0.119)
BUS. ORIENT.		0.053** (0.023)	0.072*** (0.024)
ATT. TO STRAT.		0.032*** (0.011)	0.029*** (0.011)
COMPR. OF EVAL.		0.004** (0.002)	0.003** (0.002)
BRD. SIZE SQ.			−6.800E-05*** (0.000)
BRD. TEN. SQ.			−4.600E-04** (0.000)
BRD. MEM. AGE SQ.			9.604E-0.04 (0.000)
OCCUP. HET. SQ.			−0.404*** (0.129)
(Constant)	0.117*** (0.025)	−0.018 (0.033)	−0.103* (0.050)
Adjusted R-SQ	0.054	0.093	0.108
F	22.286***	20.293***	18.561***

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$ ($n = 2624$)

One-tailed tests for hypothesized effects; Standard errors in parentheses

levels of tenure. Hypothesis 3, which predicted that board member age would be positively related to strategic change for younger boards, but negatively related to strategic change for older boards, was partially supported. Specifically, although the root variable was associated with strategic change as predicted (i.e., a significantly positive relationship), the squared term did not show a significantly negative relationship with strategic change. This finding will be discussed in greater detail in the Discussion section.

Hypothesis 4 addresses the notion that board member occupational heterogeneity would be

associated with varied board member experiences and expertise, and would thus be positively associated with strategic change, but that the benefits of such heterogeneity beyond a certain point would be outweighed by greater conflict and disagreement. The predicted curvilinear relationship was found. Also supported was Hypothesis 5, which predicted a linearly positive relationship between a board's *Business Orientation* (operationalized by the occupations of board members) and strategic change. Table 2 reveals support for this hypothesis, indicating that the greater the extent to which board members' occupations were of a business nature,

Table 3. Regression analysis: determinants of strategic change (weak board)

BEDSIZE	4.392E-04*** (0.000)	3.825E-04*** (0.000)	3.612E-04*** (0.000)
CON	0.001 (0.007)	-0.002 (0.007)	-0.002 (0.007)
REVIEW	-0.003 (0.008)	-0.014 (0.008)	-0.017 (0.008)
OCCUPANCY	0.039 (0.034)	0.034 (0.034)	0.028 (0.034)
EFFICIENCY	-0.005 (0.055)	-0.014 (0.055)	-0.017 (0.055)
OWNERSHIP	-0.067* (0.038)	-0.018 (0.040)	-0.002 (0.041)
SYSTEM	-0.068*** (0.016)	-0.063*** (0.017)	-0.062*** (0.017)
BOARD SIZE		0.003*** (0.001)	0.007*** (0.001)
BOARD TENURE		-0.002* (0.001)	0.009 (0.009)
BRD. MEMBER AGE		0.098*** (0.032)	0.105** (0.035)
OCCUP. HET.		0.017 (0.068)	-0.003 (0.196)
BUS. ORIENT.		0.055 (0.037)	0.047 (0.040)
ATT. TO STRAT.		0.016 (0.015)	0.016 (0.015)
COMPR. OF EVAL.		0.001 (0.002)	4.323E-04 (0.002)
BRD. SIZE SQ.			-4.300E-05** (0.000)
BRD. TEN. SQ.			3.300E-04 (0.000)
BRD. MEM. AGE SQ.			-0.003 (0.003)
OCCUP. HET. SQ.			0.002 (0.238)
(Constant)	0.115*** (0.034)	0.002 (0.048)	-0.009 (0.070)
Adjusted R ²	0.036	0.06	0.070
F	7.051***	6.13***	5.295***

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$ ($n = 1312$)

One-tailed tests for hypothesized effects; Standard errors in parentheses

the greater the level of that organization's strategic change.

With respect to the two process variables, Hypothesis 6 hypothesized that the extent of time and attention that boards devote to strategic issues will be positively related to strategic change. As predicted, a board's *Attention to Strategy* issues was strongly and positively associated with strategic change. We also found support for Hypothesis 7, which posited that the degree of board involvement in the monitoring and evaluation of the CEO would be positively associated with strategic change. Overall, then, the analyses revealed generally strong support for our theoretical model. All of the predictor variables were significantly related to strategic change as predicted (with one exception—board member age was linearly, rather than curvilinearly, related to strategic change). One can also assess from Table 2 the increase in overall explanatory strength when the linear predictor variables are added to the regression equation, and again when the curvilinear terms are added (the increases represent statistically significant differences).

Lastly, Hypothesis 8 predicted that the effect on strategic change of a board's inclination toward strategic change would be magnified under the condition of high board power. In other words, the strength of the relationship between board characteristics and processes (Hypotheses 1 through 7) should be moderated by board power. As can be seen in Tables 3 and 4, our subgroup analyses indicate support for this argument.

Specifically, as shown in Tables 3 and 4, the results differ dramatically for weak vs. strong boards. Table 3 indicates that only one of the seven board demography and board process predictions are supported for the subgroup sample of weaker boards (*vis-à-vis* the CEO). Specifically, only the prediction between board size and strategic change was supported. As with the full sample, the association between board member age and strategic change is linear, and not curvilinear, as predicted. In contrast, for the subgroup sample of more influential boards (Table 4), five of the six predictions initially supported in the full sample model are again supported (board member age is again linearly related to strategic change). Also, the variance explained by the predictor variables for the high-power board model is about 50 percent greater than that explained in the low-power board model. Thus, we find support for our final

prediction (Hypothesis 8) that demographic and processual characteristics of boards are most strongly associated with strategic change when boards are also relatively influential. In other words, the inclination toward strategic change as reflected in board demography and processes may reflect largely unrealized potential when boards lack the power to affect strategic change.

DISCUSSION

We began our paper by asking whether boards of directors impel, impede, or exert no effect on strategic change in organizations. We have sought to avoid any simple, broad-brush response that would characterize boards as either rubber stamps or vigilant watchdogs. Instead, we developed and tested an argument that addresses the strategic role of boards, and specifies how a number of demographic and processual features of boards of directors may reflect differences in a board's inclination toward strategic change. Our emphasis on a wide set of demographic features, along with hypothesized nonlinear relationships, is distinctive, we believe, as are our efforts to include process considerations regarding where a board's attention is focused and how that focus suggests differential inclinations toward strategic change. Finally, we develop what we view as an essential conceptual and empirical linkage between board inclinations, board power, and strategic change, and test this linkage using longitudinal data on approximately 3000 organizations.

Our first set of findings (Hypotheses 1–7) suggests that board structure and board demography do play an important role in the extent to which a board is likely to promote strategic change. In particular, the strong empirical support for three of our four curvilinear hypotheses (Hypotheses 1–4) suggests a way to begin reconciling the longstanding disputes in the social psychological and organizational research on the role of group structure and demography, which have been dominated by conflicting arguments and inconsistent findings. Our findings suggest that debates regarding whether group size and demographic composition affect group processes and outcomes in an impelling vs. impeding manner must consider the possibility that the impel vs. impede effects may differ across the range of values of the demographic variable of interest.

Table 4. Regression analysis: determinants of strategic change (strong board)

BEDSIZE	3.644E-04*** (0.000)	2.470E-04** (0.000)	1.987E-04 (0.000)
CON	0.001 (0.010)	-0.002 (0.009)	-0.038 (0.009)
REVIEW	0.005 (0.009)	-0.008 (0.009)	-0.013 (0.009)
OCCUPANCY	0.017 (0.025)	0.023 (0.024)	0.031 (0.024)
EFFICIENCY	0.024*** (0.004)	0.024*** (0.003)	0.024*** (0.003)
OWNERSHIP	-0.052 (0.038)	-0.018 (0.039)	0.008 (0.040)
SYSTEM	-0.075*** (0.022)	-0.053** (0.022)	-0.044* (0.022)
BOARD SIZE		0.006*** (0.001)	0.015*** (0.003)
BOARD TENURE		-0.002* (0.001)	0.016 (0.012)
BRD. MEMBER AGE		0.072* (0.035)	0.065** (0.036)
OCCUP. HET.		-0.039 (0.062)	0.416** (0.192)
BUS. ORIENT.		0.044 (0.035)	0.077** (0.038)
ATT. TO STRAT.		0.039* (0.019)	0.033* (0.019)
COMPR. OF EVAL.		0.006** (0.003)	0.005* (0.003)
BRD. SIZE SQ.			-2.200E-04*** (0.000)
BRD. TEN. SQ.			-5.400E-04* (0.000)
BRD. MEM. AGE SQ.			4.969E-03 (0.005)
OCCUP. HET. SQ.			-0.554*** (0.201)
(Constant)	0.075 (0.046)	-0.077 (0.058)	-0.199** (0.090)
Adjusted R^2	0.055	0.094	0.115
F	9.967***	9.040***	8.838***

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$ ($n = 1312$)

One-tailed tests for hypothesized effects; Standard errors in parentheses

It should be noted that our emphasis on curvilinear does not imply that we are simply taking a “middle of the road” (such a position would actually hypothesize no effect as the net result of conflicting predictions). Rather, we have sought to make and test a set of more nuanced predictions as to how board demography can affect strategic change differently at different levels of the variable in question, and the curvilinear logic is clearly essential to those predictions. We believe that our perspective is important theoretically for at least two reasons. First, it represents an alternative to

the typical debates in the group demography literature, whereby one side of the debate tries to downplay the merits of the other. Our study suggests that the arguments from both sides can in fact be correct—but at differing levels of the demographic variable in question.

Second, the problematic theoretical debates and mixed empirical findings in the group and organizational demography literature has (perhaps understandably) led some researchers to argue against the relevance of demographic characteristics (e.g., Pettigrew, 1992). Our findings, however, suggest

that once the curvilinear logic for demographic effects is developed and understood, the relevance of group and organizational demography is much clearer, both theoretically and empirically. We would suggest that other studies that have found weak or mixed results for demographic variables might benefit from a reanalysis based on a curvilinear logic.

Another advantage of having established significant curvilinear effects (in this case, inverted U-shape effects) is that researchers can then examine exactly when a relationship begins to change from positive to negative. Finding a curvilinear result does not necessarily imply a symmetrical opposing effect. In our study, we went back to our estimated models and calculated that, for example, the positive impact of board tenure on strategic change lasts until a tenure of 15 years, after which the relationship turns negative. About 40 percent of our sample is in the former category, with 60 percent in the latter. The inflection point for occupational heterogeneity is similar, with about 40 percent of hospitals in the range where heterogeneity is positively related to strategic change, and 60 percent in the range where heterogeneity is negatively related to change (note that the actual level of heterogeneity is a measure between zero and one that is not easily interpretable on its own).

Interestingly, however, other curvilinear relationships were not nearly as balanced. For example, the relationship between board size and strategic change is positive for most hospitals. Only at the point at which boards are about 30 board members or greater do we see a negative relationship, and this applies to about 5 percent of hospital boards. Note, however, that 5 percent still refers to hundreds of hospitals, given the large number of hospitals in the U.S., and therefore is still meaningful.

The one unusual finding in the tests of the first four hypotheses bears additional discussion, as well. We found that the relationship between board member age and inclination toward strategic change was positively and linearly related to strategic change, rather than the predicted inverse u-shape relationship. This finding runs counter to arguments that boards comprised of older board members are risk averse, slow decision making bodies which are unwilling to veer from the status quo. Rather, our finding is consistent with the argument that to impel strategic change, board members must have sufficient capabilities, experiences,

and confidence. These characteristics are most likely to be present among boards with more senior members. Also, given the substantial variation on our board member age measure, it appears that the lack of a curvilinear relationship was not a consequence of restricted range or variance of our measure.

We also find that specific types of expertise or experiences (Hypothesis 5) are influential in shaping the orientation of a board toward strategic change. This finding is consistent with the notion that the "mind-set" that business executives have with respect to strategic change may be quite different from those from other walks of life. It also suggests that organizations choosing a business executive for their boards with the expectation of gaining a specific functional area of expertise may also be gaining (for better or worse) a more general business mind-set regarding how that organization should address its organization/environment relationships.

With respect to the processual variables (Hypotheses 6–7), we offer a distinctive analysis of issues relating to board attention. While board demography can provide researchers with valuable distal measures of board preferences or inclinations, knowing how boards spend their time and devote their energies clearly adds a new and needed component to the discussion of boards (Goodstein *et al.*, 1994). We make no claim, of course, to have the fine-grained data that one obtains from direct observation of boards, but it is encouraging that our quantitative measures of board process add new explanatory power to our understanding of how boards may affect strategic change.

Our last hypothesized result (Hypothesis 8) addresses the question of how board power affects the relationship between a board's inclination toward strategic change and the level of observed strategic change. While the claim that power affects outcomes may seem obvious, it is interesting to note how rare it is to observe studies that examine both preferences and power simultaneously (Zajac and Westphal, 1996). Perhaps this stems from the fact that small group research typically focuses on group tasks for which there are no opposing external forces. In an organizational context, however, if a group seeks to move an organization in a particular direction, it seems naive to assume that such a preference would simply be embraced by other constituencies outside of the

group, whether inside the organization or external to it. This suggests an interesting extension of the present study; namely, examining the extent to which board preferences are opposed, vs. supported by, other organizational constituents. For example, one might examine how board preferences for strategic change coincide/conflict with those of a hospital's medical staff, or the hospital's CEO. One could also posit differential effects on change that stem from balanced vs. imbalanced power, and more generally, the construction of intergroup coalitions for or against change.

Another result that is not hypothesized, but is consistent with our overall perspective, stems from one of our control variables. Specifically, we find that poor prior performance (as measured by inefficiency) also stimulates strategic change, but this effect is much stronger for organizations with powerful boards than for those with weaker boards. While our focus has been on features of boards themselves that may suggest a differential inclination for strategic change, the context of poor prior performance can be considered another contextual factor that likely affects a board's inclination to promote strategic change.

Board inclinations and performance

Our primary focus has been the examination of board demographic and processual features and their impact on inclinations for strategic change. We have to this point been silent with respect to the question of whether strategic change positively or negatively affects performance. The reason for our silence is our agnosticism regarding change itself; one can envision scenarios where it helps an organization, and other scenarios where it may not. We recognize, however, that strategic change is typically intended to improve performance, and we began our study with the suggestion that, during a period of significant industry change and increasing competition, strategic change for the organizations studied here was intended to improve performance, on average. In fact, *post hoc* regression analyses revealed that strategic change is positively and significantly correlated ($p \leq 0.001$) with hospital efficiency (using the measure discussed earlier) during the 5-year period of study, after controlling for the typical independent variables used in hospital performance research, such as regulatory environment, bedsize, and for-profit status.

While the main effect relationship between strategic change and improved performance is interesting, suggesting that change is generally adaptive for these organizations, we believe that our hypotheses regarding the role of boards in strategic change can shed additional light on the change/performance relationship. Specifically, our earlier arguments regarding predictable differences in a board's inclination for strategic change suggest that independent of an organization's need for change (e.g., changing environmental conditions), there is a question of an organization's readiness for change. In other words, when organizations engage in a strategic change, if a board is also ready for such change, such change may be more likely to produce the intended performance improvement than when a board is more reluctant to be part of such a strategic change.

Clearly, some degree of strategic change may occur even when boards are not fully inclined towards change. At the extreme, some CEOs may lead substantial program expansions (or downsizing) in the absence of full board support. However, we propose that under such conditions, strategic change efforts are less likely to succeed, as CEOs may be denied access to the board's expertise and advice (Westphal, 1999), or other resources may be withheld that are essential to successful implementation of the strategic change. This implies that an organization's subsequent performance will be influenced by the interaction between the strategic change and the board's inclination for change (as reflected in the indicators used to test our earlier hypotheses).

To test the notion that strategic change will have its greatest positive impact on performance when the board is most inclined towards change, we first examined the impact on performance of deviations from the inflection points for the board size, board member tenure, and occupational heterogeneity measures (recall that these variables were found to support the hypothesized curvilinear relationship). Multiple regression analyses, adjusting for the control variables, provide support for our speculation about the moderating role of board inclination for change in the strategic change/performance relationship. Specifically, we found performance was associated with the multiplicative interaction term *Strategic Change* \times *Deviations from the Ideal Board Size* (where the ideal board size is defined as the empirically observed inflection point in the curvilinear relationships) ($p \leq 0.001$). Moreover,

this relationship is nonmonotonic such that the impact of change on performance is *positive* when deviations from the 'ideal' board size are minimal, and the impact of change on performance is *negative* when board size deviates from the previously determined inflection point. This same pattern of results is observed when considering, in separate regression models, deviations from the inflection point for board member tenure ($p \leq 0.05$) and occupational heterogeneity measures ($p \leq 0.001$).² These findings suggest that while strategic change may be observed for hospitals whose boards are not inclined towards change, such changes are negatively associated with performance changes. In contrast, strategic changes that occur in hospitals whose boards are inclined towards change are associated with subsequent improvements in performance.

Additional analyses, examining those variables for which we made linear relationship arguments (i.e., between board characteristics and strategic change), are also generally consistent with these findings. For example, multiple regression analyses reveal a statistically significant interaction between change and (1) attention to strategy and (2) comprehensiveness of CEO evaluation, with efficiency improvements as the dependent variable. Both of these relationships were also non-monotonic: when board attention to strategy (or comprehensiveness of CEO evaluation) was minimal, the impact of change on performance was negative, but at higher values of these two predictor variables, the relationship between strategic change and change in performance was positive.³

Overall, then, our extended analyses generally complement the logic developed in this paper, and reveal an interesting relationship between strategic change and changes in firm performance. Though not the central focus of our study, it appears that when change occurs in organizations with supportive boards (with respect to strategic change),

strategic changes stand a greater probability of positively impacting performance. However, strategic change in the absence of board support may in fact increase the likelihood of subsequent performance problems.

Finally, we need to offer several caveats, based on decisions made in conducting the study. First, recall that our sample was defined conservatively to include only those organizations that did not experience turnover in the CEO position during the years of study. This was to ensure the integrity of our prediction that the nature of the Board–CEO relationship in a prior period would impact strategic change in a future period. This sampling constraint likely limited the variation of the power variable, and thus, the results reported in this study may understate the importance of *Board Power* as a moderator.

Also, while we are confident as to the advantages of testing our hypotheses in a single industry (e.g., ability to determine the appropriate indicators for board composition and strategic change), the issue of generalizability remains open. For example, the hospital industry is dominated by not-for-profit organizations, and thus it was important to consider whether for-profit vs. not-for-profit motives impacted our results. As indicated above, for-profit status had no impact on the results of our study. This is consistent with other hospital industry research (cf. Golden, 1992; Shortell *et al.*, 1990) which suggests that fierce competition in this industry has led not-for-profits to adopt the behaviors of investor-owned firms. Also noteworthy about our sample is that hospital boards tend to be more involved in governance (Judge and Zeithaml, 1992) than other corporate boards, and also tend to separate CEO and board chair positions more than other boards. However, while mean levels of board involvement may be higher on average in hospital organizations, there is substantial variance in board involvement within our sample of organizations, as well, and higher mean levels on any indicator do not necessarily imply differential correlations with other variables of interest. Interestingly, one might even argue that major U.S. corporate boards, with their increasingly active stance *vis-à-vis* corporate governance issues, will increasingly resemble the boards studied here.

So, do boards of directors impel, impede, or exert no effect on strategic change in organizations? Our answer is that "all of the above" can be observed in a given population of boards. More

² Plotting the graph for the occupational heterogeneity measure revealed that the intercept point is outside the empirically observed range for this measure. Thus, we are not able to interpret this finding as supportive (or unsupportive) of our speculation about the change-performance relationship (cf. Schoonhoven, 1981).

³ One finding (percent of business occupations represented on the board) did run counter to our expectation, revealing a non-monotonic relationship such that change was least likely to be associated with increases in efficiency for those boards comprised of individuals with business expertise.

important, however, is that our study has attempted to clarify the conditions under which one answer is more likely than another by developing and testing a model that: (1) specifies in detail the demographic and processual characteristics of boards, and (2) analyzes how variation in such characteristics, along with variation in board power, will result in differential effects on strategic change.

In conclusion, we hope that our study has highlighted that theoretical and empirical research on boards of directors does not need to choose between theories of demography, agency, and power. We have tried to show that these theoretical perspectives are not at all necessarily incompatible. Stated succinctly, board demography can affect a board's preferences, the agency relationship can provide the context in which these preferences will manifest themselves, and the board's power will determine the extent to which those preferences in that context are realized. We are not criticizing studies that more narrowly assess board behavior through the lens of a single theoretical perspective; however, we believe that taking a multi-theoretical approach can shed greater light on the important questions regarding the effect of boards of directors on strategic change.

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APPENDIX

I. (Business Orientation Occupations: #s 3, 5, 7, 8, 9)

Survey Question: Please indicate the number of current hospital governing board members whose primary occupation corresponds to each of the following categories. Specify only one category per individual member. For board members who are retired from professional careers, please indicate prior primary occupation.

1. Physician
2. Other health professionals
3. Other hospital CEO

4. Religious (e.g., priest, nun)
5. Lawyer
6. Educator
7. Banker/financier
8. Independent business person
9. Corporate executive
10. Farmer/rancher
11. Government official/agency representative
12. Labor official/representative
13. Homemaker
14. Other

II. (Strategic Issues: #s 4, 8, 10)

Survey Question: Within the past twelve months, which of the following topics has occupied most of the board's time? (Check one only)

1. Appointments and delineation of clinical privileges to the medical staff
2. CEO performance
3. Current litigation against the hospital
4. Diversification, mergers, joint ventures
5. Fund raising
6. Major capital projects
7. Professional standards in patient care
8. Strategic planning
9. The assets and financial viability of the institution
10. The hospital's competitive position
11. Other