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RESEARCH NOTES AND COMMENTARIES

THE IMPLICATIONS OF STRATEGY AND SOCIAL CONTEXT FOR THE RELATIONSHIP BETWEEN TOP MANAGEMENT TEAM HETEROGENEITY AND FIRM PERFORMANCE

MASON A. CARPENTER*
School of Business, University of Wisconsin, Madison, Wisconsin, U.S.A.

This research reexamines the link between top management team (TMT) heterogeneity and firm performance. Specifically, I theorize that the effects of education, work experience, and tenure on performance will depend upon the top management team's strategic and social context. In a test of such theorizing, I find that (1) the positive relationships between TMT educational, functional, and tenure heterogeneity and performance are contingent on complexity, as indicated by a firm's international strategy and, (2) such relationships are clearly stronger in short-tenured top management teams. The theory and results presented here provide impetus for future studies, as well as suggest to upper echelon researchers that they think more critically about the conditions under which demographic characteristics are most likely to influence organizational outcomes like performance. Copyright © 2002 John Wiley & Sons, Ltd.

Since Hambrick and Mason's (1984) watershed essay on top management team (TMT) demographic characteristics, organizations and strategy researchers have extended 'upper echelons' theorizing to predict that TMT characteristics will be reflected in firm performance (Haleblian and Finkelstein, 1993; Keck, 1997; Michel and Hambrick, 1992; Murray, 1989; Norburn and Birley, 1988; Priem, 1990; Smith *et al*., 1994; West and Schwenk, 1996). However, empirical results have been ambiguous, motivating some strategy researchers to conclude that 'pursuing this line of inquiry further will yield results inconsistent at best and fruitless at worst' (West and Schwenk, 1996: 571), and lead to 'incomplete and error-prone conclusions, devoid of understanding' (Priem, Lyon, and Dess, 1999: 948). In contrast, this paper suggests that inconsistency among TMT demographics/performance relationships shown in prior work may point to the possibility that important moderating or intervening variables have been overlooked, and that such omissions create opportunities for further research.

With only a few exceptions (Hambrick, Cho, and Chen, 1996; Keck, 1997; Michel and Hambrick, 1992), a striking feature of upper echelon studies that have sought an explanation for firm performance is the tendency to decontextualize top management teams—that is, not account for the idiosyncratic nature of each firm's strategy and the social structure of the TMT. This is

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*Correspondence to: M. A. Carpenter, School of Business, University of Wisconsin, Grainger Hall, 975 University Avenue, Madison, WI 53706, U.S.A.

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surprising because one of the hallmarks of strategy research is that relationships are typically contingent (i.e., *it depends*), and there is ample behavioral and social psychological research to suggest that any link between TMT demographic characteristics and substantive outcomes will likely be affected by a top team's situation. Therefore, in this research I suggest that conclusions about the futility of demographics-based studies have been too hasty, and instead argue that top management team characteristics *are* likely to be reflected in organizational performance, *but only after* taking into account the TMT's strategic and social context.

THEORY AND HYPOTHESES

Upper echelons studies typically emphasize the efforts of the entire team, and not a single person, based on the belief that teams are essential to 'the specialized work of maintaining the organization in operation' (Barnard, 1938: 215; Hambrick, 1989). Strategy researchers have extended Hambrick and Mason's (1984) upper echelons perspective to argue that, since demographic characteristics serve as valid proxies for deep-level characteristics, then the relative heterogeneity or diversity of those former characteristics among team members may be associated with firm performance (Finkelstein and Hambrick, 1996). Consequently, if demographic diversity has implications for top team behaviors and, most importantly, those behaviors integral to effective management, then heterogeneity is likely to be reflected in firm performance. Moreover, despite extensive research attention, such an upper echelons performance proposition has received mixed support in the strategy and organizations literature. Indeed, West and Schwenk's (1996) recent inability to duplicate any performance results, positive or negative, from prior demographics/performance studies, led them to decry TMT characteristics as overly noisy and unreliable measures. At the same time, they noted that such nonfindings could have resulted from the idiosyncratic, *but unobserved*, strategies of the firms they sampled (West and Schwenk, 1996: 575).

Strategic context

West and Schwenk's (1996) latter point is critical since strategy, next to an organization's environment (Weick, 1979), is widely accepted as a significant determinant of the complexity that any given top team must manage (Finkelstein and Hambrick, 1996; Henderson and Fredrickson, 1996; Michel and Hambrick, 1992; Ocasio, 1997; Sanders and Carpenter, 1998). Strategy is also more proximate to the TMT than the external environment, since the former essentially serves as a filter and pathway to the latter (Ocasio, 1997; Weick, 1979). Taking that view a step further, I argue that a TMT's strategic context will likely moderate the effects of team member backgrounds on firm performance. The importance of complexity for demographic effects was first suggested by Hambrick and Mason (1984), and later echoed by Priem (1990). These authors argued that heterogeneous TMTs would be best able to manage complex environments. Later, Hambrick *et al*. (1996) found that heterogeneous top teams were positively related to firm performance in the turbulent airline industry. While there was theoretical and empirical support for their assessment, I offer competing perspectives on the inherent tension between the positive and negative consequences of TMT heterogeneity for performance. I therefore suggest that, if any heterogeneity effects are to be evidenced at all, the complexity of a firm's strategy may determine which of the following two competing views prevail.

A firm's international strategy is my reference point in developing and testing this complexity-contingent proposition. Recognizing the predominately archival nature of upper echelons research, my objective was to obtain an indicator of strategy that was (1) readily obtainable from archival sources by other researchers and, (2) clearly linked to managerial complexity. International strategy—the degree to which a firm depends on foreign markets for revenues and owned-factors of production—appears to satisfy both of those criteria. Data for a multidimensional measure of internationalization are readily available through Compustat. Conceptually, Prahalad (1990) describes internationalization as a process that compounds the complexity of all managerial tasks. And recently, Sanders and Carpenter noted factors ranging from national culture, information processing, causal ambiguity, and coordination and integration needs, leading them to conclude that 'the more extensive a firm's degree of internationalization, the greater the level of

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complexity confronting its top management team' (Sanders and Carpenter, 1998: 160).

The first hypothesis, following the spirit of Hambrick and Mason (1984), Priem (1990), and Hambrick *et al*. (1996), is based on the sociocognitive perspective that diversity among top executives is most beneficial in complex environments. Such diversity is likely to provide the TMT with greater breadth of information sources, skill sets, and sociocognitive horsepower than would be otherwise available to teams whose members are more homogeneous or demographically similar. As summarized in the Appendix, task-related conflict is an added benefit of such demographic diversity (Jehn, Chadwick, and Thatcher, 1997; Williams and O'Reilly, 1998). Taken together, the consequences of TMT heterogeneity are likely to be most beneficial in complex environments since team member differences may stimulate debate about the appropriateness of a current strategy, allow them to generate a greater range of strategic alternatives, and collectively better evaluating the feasibility of such alternatives. Therefore:

> *Hypothesis 1a: The positive relationship between TMT heterogeneity and firm performance will be stronger in firms with high levels of internationalization.*

In contrast to Hypothesis 1a, a competing behavioral perspective suggests that complexity diminishes the value of TMT diversity, leaving heterogeneous TMTs as a liability for highly internationalized firms. As summarized in the Appendix, homogeneity provides certain benefits. For instance, diverse teams might not have shared world views and common decision-making routines. Coordination among TMT members is thus less speedy and efficient (Williams and O'Reilly, 1998). Given that most top teams are confronted by great complexity, even absent extensive internationalization, then the positive sociocognitive benefits of diversity are regularly threatened by a loss of team coherence and behavioral integration (Finkelstein and Hambrick, 1996; O'Reilly, Snyder, and Boothe, 1993). At the higher levels of complexity arising in firms with extensive international operations, the negative behavioral consequences of diversity may begin to undermine the positive sociocognitive ones. Extensive complexity results in information overload and undermines the ability of top executives with diverse backgrounds to function as part of an integrated team (Jehn *et al*., 1997). The time pressures and other uncertainty likely to accompany high complexity may prevent resolution of sociocognitive conflict, and further serve to catalyze affective conflict (Amason and Sapienza, 1997). Since effective management requires an integrated, fully functioning top team (Hambrick, 1989), firm performance may likely suffer when its heterogeneous TMT is confronted by high complexity.

In this latter view, however, the positive consequences of TMT heterogeneity for performance may still be likely when international complexity is moderate to low. At such levels of complexity, the heterogeneous top team is best able to avoid most dysfunctions arising from their differences, and instead maximize the benefits arising from their breadth of information sources, skill sets, and sociocognitive horsepower. Moreover, if complexity creates a basis for conflict among TMT members who are diverse (Milliken and Martins, 1996; O'Reilly *et al*., 1993), then at relatively low levels of complexity they may have time to resolve their work-related differences. Thus, the benefits of sociocognitive conflict, in turn, are likely to be reflected in elevated firm performance in low internationalization firms.

> *Hypothesis 1b: The positive relationship between TMT heterogeneity and firm performance will be weaker in firms with high levels of internationalization.*

Social context

A related question, largely ignored in upper echelon studies, is whether a top team's social context has implications for demographic effects. Specifically, does the time team members have spent working together on the top team, as indicated by average tenure, impact the performance effects of TMT heterogeneity? It is typically assumed that members of diverse top teams get along well enough to confidently exploit their differences, or don't get along *so well* that they suppress them. On the one hand, tenure is often viewed as the great equalizer, socializing executives into the ways of their organization and TMT (Finkelstein and Hambrick, 1996). For this reason, long tenures are associated with group think, aversion to risk, and adherence to the status quo (Bantel and Jackson, 1989; Pfeffer, 1983), which in turn combine to drag down firm performance (Michel and Hambrick, 1992; Miller, 1991). Consequently, if tenure

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serves to wash out the manifestation of salient differences among executives, then the effects of TMT heterogeneity are most likely to be visible in relatively short-tenured top teams.

On the other hand, theoretical perspectives from organizational behavior and social psychology (Schneider, 1987) suggest that differences among group members initially lead to conflict. For instance, Harrison, Price, and Bell (1998) showed that the length of time group members worked together weakened the negative effects of demographic diversity on workgroup cohesion. However, top management teams are different from most of those studied in small groups research. Indeed, Bantel and Jackson (1989: 109) argued that the selection and socialization of top managers would likely suppress any conflict arising from their demographic diversity. And while relatively young teams could have difficulty fully realizing the benefits of their diversity (Harrison *et al*., 1998; Williams and O'Reilly, 1998), seasoned TMTs have had time to develop routines and shared understandings that allow them to more fully leverage their members' distinctive backgrounds (Bantel and Jackson, 1989). This latter view suggests that heterogeneity effects, if any, may be strongest in longer-tenured top teams. These two competing perspectives are summarized as:

Hypothesis 2a: The complexity-contingent relationships between TMT heterogeneity and firm performance will be strongest in short-tenured top management teams.

Hypothesis 2b: The complexity-contingent relationships between TMT heterogeneity and firm performance will be strongest in long-tenured top management teams.

RESEARCH METHOD

Sample

The population for this study includes large and medium-sized firms in the *Standard & Poors* (S&P) industrial index. Data were collected from 1990 through 1997, and firms were excluded if complete information on TMT characteristics, international strategy, or firm performance was unavailable. The final sample included 247 companies, and generated 472 company-years of analyzable observations (as explained below in the next section). A Kolmogorov–Smirnoff two-sample test indicated that the excluded firms in the S&P index were not statistically different from the sampled firms on the dimensions of international strategy, total assets, total sales, or performance (return on assets, return on equity, and stock market returns). Firm financial data were obtained from Compustat, and executive biographies came from Dun & Bradstreet's *Reference Book of Corporate Managements*. Data for the strategy measure were provided by Compustat and *Dun's Directory of American Corporate Families and International Affiliates*.

Analytical approach

To determine the robustness of results over time, the hypotheses were tested with two panels of lagged, cross-sectional data (i.e., the panels' base years, time t, were 1990 and 1995); of the 247 sampled firms, 225 contained observations in both panels, while 22 firms were no longer in existence by 1995. TMT characteristics from time t were used to predict firm performance averaged over time $t + 1$ and $t + 2$; moderators and the control variables were from time t as well. STATA's linear regression with a robust estimators command (i.e., adjusts for inflated standard errors) was used to test the hypotheses. Robust estimators are required with pooled data since the data are independent across firms but not within firms, and the sample observes most firms (i.e., 225) in two consecutive periods.

Dependent variable

As noted above, I measured subsequent firm performance as *return on assets* (ROA), averaged over time $t + 1$ and $t + 2$; averaging served to smooth any potential aberrations associated with a single year's performance. ROA is a widely used measure of accounting performance; it is additionally relevant in this paper since firm internationalization (the strategy moderator variable described below) is theoretically associated with the search for economies of scope and scale, and ROA is a good indicator of how well such economies have been achieved (Kim, Hwang, and Burgers, 1989). In supplemental models (not reported) I found virtually identical results (i.e., signs and significance of independent variables) using return on equity and Tobin's q (a market measure of performance).

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Independent variables

Following other upper echelons studies, the *top management team* was defined as the top two tiers of the organization's management (e.g., CEO, Chairman, COO, CFO, and the next highest management tier [Finkelstein and Hambrick, 1996; Wiersema and Bantel, 1992]). This definition generally resulted in sampling all executives above the VP level, and yielded teams of approximately six members. Moreover, results were substantively similar (i.e., sign and significance of independent variables) to those reported below when I defined the TMT more broadly as all executives at the VP level and above, which yielded a mean top management team of 11 members.

For each TMT I coded three demographic characteristics expected to gauge the breadth of their demographic differences. As mentioned above, education, functional background, and TMT tenure heterogeneity were chosen because they are the most widely used in TMT demographics research (Finkelstein and Hambrick, 1996). *Educational background* and *functional background* are categorical variables, and I categorized executives' backgrounds following the criteria and procedures outlined in Wiersema and Bantel (1992). The *degree of heterogeneity* of each variable was then calculated using Blau's (1977) index, a widely used measure of heterogeneity when categories are used (Allison, 1978; Finkelstein and Hambrick, 1996). This index is calculated as $1 - \sum(P_i)^2$, where P_i is the percentage of individuals in the ith category; the higher the resulting score, the greater the TMT's heterogeneity on a particular dimension. The third demographic variable is *team tenure heterogeneity* and it was gauged using the coefficient of variation (standard deviation divided by the mean) of executives' respective tenures on the top management team. Allison (1978) has noted that among heterogeneity measures the coefficient of variation is preferable when interval-level data such as age or time frames are used. High values indicate greater diversity.

Moderator variables

Internationalization was calculated using a variation of Sullivan's (1994) multi-item measure of firm internationalization developed by Sanders and Carpenter (1998). While there are several single-item measures of internationalization, multi-item measures are more reliable (Schwab, 1999). Moreover, Sullivan (1994) has shown that these other single-item measures correlate highly among the multinationals in the S&P 500. The internationalization measure has a theoretical range of 0 to 3, and gauges internationalization on three important and theoretically distinct dimensions (*foreign sales to total sales*, *foreign assets to total assets*, and *geographic dispersion of foreign sales*) which are summed to form a composite measure. Each of the above variables ranges from 0 to 1. The three variables loaded on one factor with a high Eigenvalue and explained variance, demonstrated high inter-item reliability ($\alpha = 0.84$), and the component variables and composite measure appeared in plots to be normally distributed.

The second moderator variable, *TMT average tenure*, was calculated using the median of the executives' respective tenures on the top management team. This variable is analogous to the one used by Harrison *et al.* (1998), and takes into account the likely skewness in the individual (within-team) distribution of this variable. Regressions using the mean of TMT members' respective tenures, in lieu of the median, generated results substantively equivalent to those reported below.

Control variables

Larger firms have greater resources and at the same time are more bureaucratic, both of which could be reflected in performance. In addition, firm size has been argued to affect the relationship between executive characteristics and organizational outcomes (Miller, 1991). Therefore, *organizational size* was included as a control and was measured as the log of total employees. Other measures of size such as total sales and total assets yielded substantively identical results. Since performance has been shown to reflect *industry membership*, this was controlled for using the procedure outlined by Amburgey and Miner (1992). This procedure preserves degrees of freedom by collapsing industry classifications into nine categories; eight dummy variables are then included in the regression to account for the effects of industry. Analyses using performance variables adjusted for industry performance generated results similar to those reported. *Degree of diversification* has been associated with firm performance and managerial complexity. It was controlled using Palepu's (1985) entropy measure, where diversification$_a$ =

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$\sum P_{ia} \ln(1/P_{ia})$, and P_{ia} is the proportion of firm a's sales in business segment i.

Three other TMT demographic variables were included as controls. TMT *average tenure* has been shown to influence firm performance; it is also the moderator variable in the test of Hypotheses 2a and 2b. As noted above, this variable will be modeled as the median of TMT members' respective tenures on the top team. The latter two demographic variables were included due to their practical and theoretical relevance to the other moderator variable: international diversification. TMT *international work experience* was calculated as the team members' years of experience accrued in international assignments, taken as a percentage of their total years of work experience. *TMT nationality* was calculated as the percentage of non-U.S. born executives on the top team. As no teams had more than one foreign national on the TMT, this variable yielded the same results as a categorical dispersion measure (i.e., Blau's index). Because measures of TMT diversity are size-dependent (i.e., larger teams can be more diverse by definition), *TMT size* was controlled as the total number of executives on the top team.

Using two periods of data to test the hypotheses provides a more robust test. However, each period can have particular effects that bias the estimators. Thus, *period effects* were controlled (1 = second panel) using a dummy variable for the two panels of data. Finally, both the moderator variables, internationalization and median tenure, were included in all models as controls.

RESULTS

Descriptive statistics, intercorrelations, and results for Hypothesis 1a through Hypothesis 2b are shown in the Appendix. Control variables for period and industry are omitted from the table (but are accounted for in the results). Recall that Hypotheses 1a and 1b predicted that international strategy would moderate TMT heterogeneity effects. Model 2 adds the multiplicative interactions between firm internationalization and the TMT variables. For all models, Durbin–Watson tests and variable inflation factor (VIF) scores indicated that autocorrelation and multicollinearity, respectively, are not a problem. Each of the interactions is statistically significant; the interaction with education is positive, while background and tenure heterogeneity are negative.

Since Hypotheses 1a and 1b predict that the sign of the heterogeneity effects may differ depending on the level of internationalization, the regressions had to be decomposed to make such a determination. Following the procedure outlined in Jaccard, Turrisi, and Wan (1990), I examined the effects of TMT heterogeneity at low and high levels of international strategy. Consistent with Hypothesis 1b, the effects of background and tenure heterogeneity were positive at low levels of internationalization, but negative at high levels of internationalization ($p < 0.05$, adjusted Bonferoni procedure). In contrast, the effects of educational heterogeneity remained positive over the full spectrum of internationalization but, consistent with Hypothesis 1a, at the same time became increasingly stronger at higher levels.

The second set of hypotheses predicted that the above interactions would be affected by TMT tenure. In testing this prediction I split the sample at the median value of TMT average tenure, reran Model 3 on both of these subsamples, and then compared the size and significance of the coefficients for the heterogeneity/internationalization interactions. In the short-tenured subsample, all the interactions remained significant and decomposition revealed their functional forms to be identical to those reported in the decomposition of results for Hypotheses 1a and 1b. For the long-tenured subsample, however, only the interaction between educational heterogeneity and internationalization remained significant, and again achieved the same functional form as reported above. Since the median split yielded models with unequal sample sizes, a Chow test was used to confirm that the difference between the subsample model coefficients were statistically significant. These results for Hypotheses 2a and 2b were further confirmed when they were tested using three-way interactions (i.e., average tenure × heterogeneity × internationalization, while controlling for all lower-order interactions, and then graphically plotting the results over the range of average tenure. Fixed effect regressions also produced similar results. Therefore, Hypothesis 2a was supported.

DISCUSSION

This paper had three objectives: (1) integrate seemingly paradoxical and conflicting perspectives on the performance effects of TMT heterogeneity and, (2) remind researchers about the fundamental

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differences between demographics and other underlying individual differences, by (3) demonstrating, both theoretically and empirically, two important boundary conditions on TMT demographic effects. The results in support of the hypotheses indicate that each of these objectives was substantially achieved.

For instance, I proposed a partial reconciliation of the sociocognitive and relational demography views by suggesting that, at least among top management teams, each perspective holds true depending on the level of complexity facing members of the top team. I was able to show some support for such an integrated theoretical framework when using firm internationalization as a proxy for managerial complexity—heterogeneity had a positive relationship with performance at low levels of complexity, but exhibited a negative one at high levels of complexity. Moreover, in supplementary analyses using diversification as a proxy for complexity (Henderson and Fredrickson, 1996), I was largely able to replicate the moderated relationships reported in the table. These results stand in stark contrast to normative (nonempirical), sociocognitive views of heterogeneity (Priem, 1990) which argue that TMT diversity will serve firms best when they face great complexity. Given the mounting evidence that effective top management teams engage in cognitive conflict but limit affective conflict (Amason and Sapienza, 1997), with the exception of educational heterogeneity, it appears that complexity accelerated the latter to the detriment of the former.

I also found support for the prediction that demographic effects would be strongest among short-tenured teams. This latter finding is of equal importance since it confirms the untested notion that top managers are somehow affected by their differences, but that the impact of those differences may change over time. And while this study can not answer questions as to whether such effects decreased due to socialization processes or attrition (Schneider, 1987), it has partially validated theories which suggest that a team's sociocultural context should have implications for demographic effects (Amason and Sapienza, 1997; Carpenter and Fredrickson, 2001; Finkelstein and Hambrick, 1996; Harrison *et al*., 1998).

Beyond the objectives stated above, the overarching purpose of this paper was to create new opportunities for future research on upper echelons that includes demographics along with other executive, firm, and environmental characteristics. I hope this study will persuade strategy and organizations scientists to examine the upper echelons in a new light, and be more critical in designing future studies to take into account the conditions under which executives are most likely to incorporate prominent demographic characteristics in their choices and actions. Moreover, it is my contention that before hammering in the final nails on the coffin of upper echelons research, much more fruitful work can be done to show how and when top executives' decisions, behaviors, and organizational outcomes will be affected by their backgrounds and the backgrounds of others. For instance, I focused on internationalization as a source of complexity—additional research can determine the relative roles of environmental complexity and other, firm-level sources of complexity in moderating demographic effects. And while this work confirms that there are important and substantive limits to the impact and interpretation of executive demographic effects, it also suggests that such demographics can continue to play an important role in research on top management teams in the context of complex organizations.

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REFERENCES

Allison P. 1978. Measures of inequality. *American Sociological Review* **43**: 865–880.

Amason AC, Sapienza HJ. 1997. The effects of top management team size and interaction norms on cognitive and affective conflict. *Journal of Management* **23**(4): 495–516.

Amburgey T, Miner A. 1992. Strategic momentum: the effects of repetitive, positional, and contextual momentum on merger activity. *Strategic Management Journal* **13**(5): 338–355.

Bantel KA, Jackson SE. 1989. Top management and innovations in banking: does the composition of the top team make a difference? *Strategic Management Journal*, Summer Special Issue **10**: 107–124.

Barnard C. 1938. *The Functions of the Executive*. Harvard University Press: Cambridge, MA.

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Blau P. 1977. *Inequality and Heterogeneity*. Free Press: New York.
Carpenter MA, Fredrickson JW. 2001. Top management teams, global strategic posture, and the moderating role of uncertainty. *Academy of Management Journal* **44**(3): 533–546.
Finkelstein S, Hambrick DC. 1996. *Strategic Leadership: Top Executives and Their Effects on Organizations*. West Publishing: St Paul, MN.
Haleblian J, Finkelstein S. 1993. Top management team size, CEO dominance, and firm performance. *Academy of Management Journal* **36**: 844–863.
Hambrick DC. 1989. Guest editor's introduction: putting top managers back in the strategy picture. *Strategic Management Journal*, Summer Special Issue **10**: 5–15.
Hambrick DC, Cho T, Chen M. 1996. The influence of top management team heterogeneity on firms' competitive moves. *Administrative Science Quarterly* **41**: 659–684.
Hambrick DC, Mason PA. 1984. Upper echelons: the organization as a reflection of its top managers. *Academy of Management Review* **9**(2): 193–206.
Harrison DA, Price KH, Bell MP. 1998. Beyond relational demography. *Academy of Management Journal* **41**(1): 96–107.
Henderson A, Fredrickson J. 1996. Information processing demands as determinants of CEO compensation. *Academy of Management Journal* **39**: 575–606.
Jaccard J, Turrisi R, Wan C. 1990. *Interaction Effects in Multiple Regression*. Sage: London.
Jehn KA, Chadwick C, Thatcher SMB. 1997. To agree or not to agree: the effects of value congruence, individual demographic dissimilarity, and conflict on workgroup outcomes. *International Journal of Conflict Management* **8**: 287–305.
Kim WC, Hwang P, Burgers WP. 1989. Global diversification strategy and corporate profit performance. *Strategic Management Journal* **10**(1): 45–57.
Keck S. 1997. Top management team structure: differential effects by environmental context. *Organization Science* **8**(2): 143–156.
Michel J, Hambrick D. 1992. Diversification posture and top management team characteristics. *Academy of Management Journal* **35**(1): 9–37.
Miller D. 1991. Stale in the saddle: CEO tenure and the match between organization and the environment. *Management Science* **1**: 34–54.
Milliken FJ, Martins LL. 1996. Searching for common threads: understanding the multiple effects of diversity in organizational groups. *Academy of Management Review* **21**: 402–433.
Murray AI. 1989. Top management group heterogeneity and firm performance. *Strategic Management Journal*, Summer Special Issue **10**: 125–141.
Norburn D, Birley S. 1988. The top management team and corporate performance. *Strategic Management Journal* **9**(3): 225–237.
O'Reilly C, Snyder R, Boothe J. 1993. Effects of executive team demography on organizational change. In *Organizational Change and Redesign*, Huber G, Glick W (eds). Oxford University Press: New York; 147–175.
Ocasio W. 1997. Towards an attention-based view of the firm. *Strategic Management Journal*, Summer Special Issue **18**: 187–206.
Palepu K. 1985. Diversification strategy, profit performance and the entropy measure. *Strategic Management Journal* **6**(3): 239–255.
Pfeffer J. 1983. Organizational demography. In *Research in Organizational Behavior*, Staw B, Cummings LL (eds). JAI Press: Greenwich, CT; 299–357.
Prahalad CK. 1990. Globalization: the intellectual and managerial challenges. *Human Resource Management* **29**(Spring): 27–38.
Priem R. 1990. Top management group factors, consensus, and firm performance. *Strategic Management Journal* **11**(6): 469–479.
Priem R, Lyon D, Dess G. 1999. Inherent limitations of demographic proxies in top management team heterogeneity research. *Journal of Management* **25**(6): 935–953.
Sanders WG, Carpenter MA. 1998. Internationalization and firm governance. *Academy of Management Journal* **41**(2): 158–178.
Schneider B. 1987. The people make the place. *Personnel Psychology* **40**(3): 437–453.
Schwab D. 1999. *Research Methods for Organizational Studies*. Erlbaum: Mahwah, NJ.
Smith K, Smith K, Olian J, Sims H, O'Bannon D, Scully J. 1994. Top management team demography and process. *Administrative Science Quarterly* **39**(3): 412–438.
Sullivan D. 1994. Measuring the degree of internationalization of a firm. *Journal of International Business Studies* **25**(2): 325–342.
West CT Jr, Schwenk CR. 1996. Top management team strategic consensus, demographic homogeneity and firm performance. *Strategic Management Journal* **17**(7): 571–576.
Weick KE. 1979. *The Social Psychology of Organizing*. Addison-Wesley: Reading, MA.
Wiersema M, Bantel K. 1992. Top management team demography and corporate strategic change. *Academy of Management Journal* **35**: 91–121.
Williams KY, O'Reilly CA. 1998. Demography and diversity in organizations. In *Research in Organizational Behavior*, Vol. 20, Cummings LL, Staw BM (eds). JAI Press: Greenwich, CT; 77–140.

APPENDIX

Benefits of TMT heterogeneity	Benefits of TMT homogeneity
• Distinct information and skills • More information and skills • Beneficial task conflict	• Shared values • Common communication routines • Speedy coordination

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Descriptive statistics and correlations[a]

	Means	S.D.	1	2	3	4	5	6	7	8	9	10
1. ROA	9.98	10.03										
2. Firm Size	2.39	1.45	−0.21									
3. Diversification	0.22	0.23	−0.34	0.14								
4. Total Officers	6.09	1.88	−0.09	−0.09	0.14							
5. TMT Intl. Exp.	0.17	0.21	−0.11	0.06	0.05	0.27						
6. TMT Nat.	0.06	0.11	−0.02	−0.03	0.02	−0.02	0.57					
7. TMT Ed. Het.	0.47	0.21	0.01	−0.09	−0.03	0.21	0.05	−0.06				
8. TMT Back. Het.	0.61	0.15	0.07	−0.16	−0.03	0.39	0.19	−0.13	0.20			
9. TMT Tenure Het.	0.58	0.31	0.16	−0.02	−0.03	0.01	−0.08	0.01	−0.02	−0.05		
10. Internationalization	0.81	0.44	−0.03	0.13	−0.05	0.08	0.33	−0.22	0.01	0.09	0.06	
11. TMT Median Tenure	10.37	4.95	0.23	0.02	−0.07	−0.08	−0.13	0.03	−0.07	−0.13	0.53	−0.01

[a] $n = 472$ company years, $p < 0.05$ for correlations > 0.13

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OLS Regression predicting subsequent two-year average ROA[b]

Variables	Model 1: Controls		Model 2: H1a and b		Model 3: H2a and b Low average tenure		Model 4: H2a and b High average tenure	
Firm Size	−0.018	*	−0.017	*	−0.016	*	−0.017	*
Diversification	−0.217	**	−0.217	**	−0.274	**	−0.154	**
Internationalization	0.005		−0.019		0.104		−0.121	
TMT International Experience	0.001	*	0.003	*	0.001		0.002	*
TMT Nationality	0.130	†	0.115		0.006		0.188	*
TMT Median Tenure	0.020		0.020		0.010		0.010	
Total Officers	−0.004		−0.003		−0.018	*	0.004	
Main effects								
TMT Education Heterogeneity	0.089	†	0.093	†	0.055		0.156	†
TMT Background Heterogeneity TMT	−0.000		0.222	*	0.346	*	0.050	
Tenure Heterogeneity	−0.018		−0.069		0.048		−0.060	
Interactions								
Ed. Het X Internationalization			0.124	†	0.124	†	0.125	†
Back. Het. X Internationalization			−0.162	*	−0.295	**	0.056	
Ten. Het. X Internationalization			−0.004	*	−0.004	*	0.001	
Intercept	0.693	**	0.650	**	0.465	**	0.789	**
Adjusted R^2	0.18	**	0.21	**	0.32	**	0.19	**
Change in adjusted R^2			0.03	**				

[a] $n = 472$ Company Years for Models 1 and 2, and $n = 166$ for Model 3 and 241 for Model 4; † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$, two-tailed tests

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