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Turnover at the Top: Executive Team Departures and Firm Performance

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In a departure from the historical focus on individual-level turnover, scholars have recently examined turnover at the collective level. Building on this work, we invoke human and social capital arguments and analyze the implications of varying rates of top management team (TMT) turnover for firm performance. Our principal finding is that TMT departures have deleterious effects on subsequent firm performance, though we find evidence to suggest that this effect is nonlinear. Results also suggest that higher levels of average organizational tenure of the TMT will modestly attenuate this negative effect. Contrary to arguments grounded in the managerial discretion literature, environmental munificence weakened the negative effects of TMT turnover rates on subsequent firm performance, whereas the hypothesized moderating effects for both industry complexity and instability were not supported.

Keywords: top management teams; turnover; firm performance; industry instability; complexity; munificence

Introduction

An organization’s top management team (TMT) represents a key group of organizational decision makers that help craft strategic initiatives, establish company culture, promulgate goals and objectives throughout the firm, and, in general, has both the responsibility and potential to alter organizational performance (Gupta and Govindarajan 1984, Hambrick and Mason 1984, Helmich and Brown 1972, Pfeffer and Davis-Blake 1986). Moreover, the TMT serves as the interface between the organization and its task environment, therefore increasing the power and salience of its role in the organization (Carpenter et al. 2004).

Because of its importance, a stream of studies have examined the antecedents and consequences associated with TMT composition (e.g., Boeker 1997, Carpenter 2002, Guthrie et al. 1991, Hambrick et al. 1996). These studies have empirically confirmed the important role played by the TMT in organizational functioning and strategic decision making. However, despite growing interest outside of the TMT literature regarding the implications of group- or collective-level employee turnover for firm performance (see Hausknecht and Holwerda 2013, Hausknecht and Trevor 2011, Nyberg and Ployhart 2013), there has been less work examining the firm performance consequences associated with TMT turnover, particularly when measured at the collective or team level (exceptions include Hambrick and D’Aveni 1992, Keck 1997, Virany et al. 1992, Wiersema and Bantel 1993). Given the robust state of the TMT literature, including a large number of studies focusing on chief executive officer (CEO) succession, executive tenure, and individual-level measures of executive turnover, this deficiency is somewhat surprising. The primary purpose of this paper is to help address the important issue of TMT-level turnover as it relates to organizational performance. A secondary goal is to examine whether or not contextual factors affect the relationship between TMT turnover and firm performance. Specifically, we examine the moderating effects of industry characteristics and average TMT organizational tenure levels on this relationship. The three research questions we investigate are as follows: (1) What are the effects of turnover rates within the TMT on subsequent firm performance? (2) What is the form of this relationship? (3) Are there moderators of this relationship?

In addressing these research questions, we build on an existing base of knowledge related to group and organizational-level employee turnover. Although the critical nature of employee turnover has led this phenomenon to be the focus of hundreds of studies in the organizational sciences, the vast majority of these studies have
(1) focused on the individual level and (2) sought to understand the antecedents or predictors of these turnover decisions, as opposed to the organizational consequences of these events (Shaw et al. 1998, Ton and Huckman 2008; for a comprehensive review of this individual-level literature, see Griffeth et al. 2000). Thus, although voluminous, up until the year 2000 this literature—especially research within the fields of human resources (HR) and organizational behavior (OB)—has only occasionally (e.g., Arthur 1994) deviated from a focus on issues associated with individual-level turnover: “While thousands of studies have investigated why employees choose to leave jobs (Mowday et al. 1982), very little research has directly examined the organizational consequences associated with voluntary employee turnover” (Williams 1999, p. 550). However, during the last dozen or so years, the volume of research on the consequences of collective-level turnover has been sufficient enough to warrant recent qualitative (Hausknecht and Trevor 2011) and quantitative (Hancock et al. 2013, Nyberg and Ployhart 2013, Park and Shaw 2013) reviews. In contrast, although strategic management scholars have a longstanding interest in the organizational consequences associated with the composition and dynamics of the TMT, research within this literature examining the effects of varying levels of TMT-level turnover rates is relatively sparse. As such, in this paper we draw on recent developments on collective-level turnover research and extend this body of knowledge to an examination of the relationship between rates of top management team turnover and firm performance.

This is a particularly interesting question because unlike the dominant “received wisdom” within the OB and HR literatures (that turnover—especially voluntary turnover—hurts firm performance), the strategy literature offers a more mixed perspective. With respect to the question of executive turnover and retention, extant arguments and research are somewhat contradictory. On the one hand, key arguments are made about the invaluable contribution of firm-specific human and social capital of the TMT to the ongoing success of the firm (Bergh 2001, Schwenk 1993). On the other hand, scholars suggest that long-tenured executives may harm firm performance as a result of strategic persistence and pathologic conformance to industry norms and the status quo (Finkelstein and Hambrick 1990, Hambrick et al. 1993, Miller 1991, Wiersema and Bantel 1992). With a primary focus on TMT-level turnover, we contribute to this discussion by building and testing theoretical arguments regarding the value of relative (in)stability within the executive team. Specifically, we provide evidence regarding the effects of lower versus higher rates of TMT turnover on subsequent performance. Furthermore, our focus on top management team turnover—not specific individuals—sets this study apart from the majority of previous work on executive turnover.

### Human and Social Capital in the TMT

The upper-echelons perspective, prevalent in strategic management research, suggests that firm functioning and performance is affected not only by the CEO but also by the capabilities of the entire top management team (Cannella et al. 2008, Carpenter et al. 2004, Hambrick and Mason 1984, Hambrick et al. 1996). In particular, this literature discusses the importance of the top management team in setting the strategic goals for the firm, establishing organizational culture, and serving as the key interface between the organization and its external environment (Castanias and Helfat 1991, Kor 2003, Kor and Mahoney 2005). Research has demonstrated the important role that the TMT plays in determining firm strategy and, ultimately, the performance of the firm (see Finkelstein and Hambrick 1996).

As part of a firm’s broader collection of human resources, executives not only contribute their individual skills and knowledge, they also collaborate and integrate these individual and specialized skills toward creating firm capabilities. As such, both human and social capital play important roles in dictating a TMT’s capacity to create competitive advantage. Human capital refers to the knowledge, skills, and abilities resulting from education, experience, and training (Becker 1964). Human capital represents a key organizational resource that contributes to a firm’s productive capabilities through both explicit and tacit organizational knowledge (Becker 1964, Bergh 2001, Nyberg and Ployhart 2013, Schwenk 1993). As Grant (1996) notes, explicit knowledge allows firms to know about the various functional domains within the firm, product markets, and company strategies. This form of organizational capital includes the team’s ability to negotiate contracts, to build consensus within the firm, and to communicate with external stakeholders. In addition to individual stocks of human capital, the team also shares mutual knowledge (Cannella et al. 2008, Crampton 2001, Krauss and Fussell 1990). This shared knowledge helps team members to be aware of each other’s strengths and weaknesses and to share a common language with respect to firm strategies, policies, and previous experiences.

A second important dimension of human capital is implicit or tacit knowledge, embodied both within individual team members and within the team as a whole. This is the subjective and personal knowledge that allows the team to know how to lead and to manage the firm (Grant 1996). This resource reflects the shared understanding, at both the firm and TMT levels, of culture, informal processes and procedures, norms, and history, including knowledge of the various conflicts and challenges not readily observable to team or firm outsiders. This is the type of knowledge that is highly idiosyncratic, time and context bound, and, as such, difficult to transfer or imitate (Grant 1996, Hayek 1945, March 1991). As a result, it may play an especially
firm social capital, and intraindustry social capital. These have been labeled variously as networks of each of the TMT members as well as the relationships. This reflects the internal and external processes through which organizational social capital is created, utilized, and sustained (Cao et al. 2006, p. 594) cite Leana and Van Buren (1999) in defining social capital simply as “assets embedded in the work network of each of the TMT members as well as the team as a whole. These have been labeled variously as intrateam social capital, intrafirm social capital, interfirm social capital, and intraindustry social capital. These resources reflect the social networks within the top management team itself; with other organizational members outside of the team; with leaders of other firms within the industry; and with policy makers, lobbyists, and industry trade associations. The various members of the TMT are likely to have different social networks both within and outside of the firm, and when combined at the team level, this connectivity is likely to affect firm capabilities and performance.

Along with human capital, losses of social capital may also have adverse effects on firm performance. Social capital is “a resource reflecting the character of social relations within the organization, realized through members’ levels of collective goal orientation and shared trust” (Leana and Van Buren 1999, p. 540). Social capital can emanate from internal networks, in the form of bonding or communal relationships, or from external networks, in the form of bridging or linking relationships with external stakeholders (Fischer and Pollock 2004). Although scholars have argued that executive team social capital is an important organizational resource (Bergh 2001, Carpenter 2002), they have also proposed that the networked nature of social capital subjects firms to risk associated with network disruption. In a conceptual review of the relationship between employee turnover and social networks, Dess and Shaw (2001, p. 450) note that “[s]ocial capital…is created through combining and leveraging resources. As such, it may yield exponential performance benefits for organizations, but it also increases the potential downside risk exposure should something go wrong (e.g., voluntary turnover of key network members).” Long-standing groups tend to develop transactive memory, or shared information storage, that relies on the social system in which they are embedded. From this perspective, the loss of a “node” in this networked system can have damaging ripple effects (Dess and Shaw 2001), depending on the value and competence of that particular team member. Cao et al. (2006) adopt a similar perspective in conceptualizing the performance effects associated with CEO turnover or succession, noting that organizational capabilities for exploration and exploitation will be affected to the extent that social capital is diminished by these events.

Turnover within the TMT has the potential to alter the social networks within the firm, which may produce dysfunctional holes in the social structure of the organization (Cao et al. 2006, Dess and Shaw 2001, Shaw et al. 2005b). This depletion of organizational social capital may impede firm-level communication competencies and strategic alliances. In particular, when firms experience high rates of TMT turnover or “churn,” important social capital resources can be disrupted, thereby diminishing an organization’s ability to integrate human capital or share knowledge with others within and outside the firm, and impeding the shared trust that can facilitate organizational change and adaptation. If we conceive
of the organization as a system of embedded knowledge (Grant 1996), then losing members of that system may create structural inefficiencies in the knowledge sharing of the firm: “The implication is that turnover not only erodes performance by depleting organizational skill banks but, perhaps more dramatically, by altering the social structure and fabric of an organization” (Shaw et al. 2005b, p. 594).

As noted by Kor (2003, p. 708), “[F]irm specific, shared team-specific, and industry-specific experiences of managers have independent and additive effects on the collective competence of the top management team.” Thus, the acquisition and development of TMT human and social capital, in the form of shared team- and firm-specific experiences, represents an important and valuable organizational undertaking. Excessive TMT turnover has the potential to impede this process in two ways. First, higher rates of TMT turnover may constrain the development of this valuable organizational capital. Second, TMT turnover may erode and disrupt organizational reservoirs of developed human and social capital. In the first instance, high rates of TMT turnover have the potential to disrupt the development of organizational capital, whereas in the second, TMT turnover may lead to a depletion of resources. Although it is certainly true that the replacement of individual executives may benefit both a TMT and their firms, from a human and social capital perspective, we argue that increased rates of TMT-level turnover will typically harm effective organizational functioning and performance.

The above expectation regarding the main effects of TMT-team level turnover is consistent with the results found in the burgeoning literature on the effect of varying rates of group and/or organizational-level turnover on firm performance. The evidence to date from this research is clear: as rates of collective-level (i.e., group, organization) turnover increase, organizational effectiveness tends to decrease. Hausknecht and Trevor’s (2011) qualitative review of this literature includes a large number (dozens) of empirical studies providing evidence that increases in collective-level turnover are associated with downturns in a wide range of performance metrics, including profits, sales, revenue growth, safety, customer service, counterproductivity, and manufacturing efficiency. The meta-analysis by Hancock et al. (2013) cumulates the results of 48 independent studies reporting 134 effect sizes (\( n = 24,943 \)) on the relationship of collective-level turnover with firm performance. Their results indicate a significant, negative association between higher rates of collective-level turnover and firm performance. Hancock et al. also test a number of moderators of this relationship and, of relevance to our study, found that when study samples included higher level (i.e., managerial) jobs, the negative effect of turnover rates on firm performance was enhanced.

Finally, and most recently, Park and Shaw (2013) conduct a large-sample meta-analysis (110 separate studies, 300 correlations, and a sample of \( n = 309,245 \)) and again report a fairly robust negative association between collective-level turnover and firm performance. Although the studies included in these reviews are not specific to the effects of TMT-level turnover, they do suggest an a priori expectation that, as with this other collective-level research, higher rates of TMT-level turnover may reduce organizational performance.

**Hypothesis 1.** Higher rates of top management team-level turnover will be negatively associated with subsequent firm performance.

Above we present arguments from a human and social capital perspective suggesting a linear relationship: as TMT-level turnover increases, we expect that firm performance will decline. However, the question of the value of turnover in general, and turnover within the TMT in particular, is provocative and multifaceted. Organizational scholars have long argued that there may be a curvilinear relationship between collective turnover rates and organizational performance (Abelson and Baysinger 1984, Dalton and Todor 1979, Price 1977). This curvilinear relationship may take on one of two forms, an inverted-U or an attenuated negative relationship (Hausknecht and Trevor 2011). Although not specific to TMT-level turnover, a number of studies have examined whether the relationship between collective-level turnover and firm performance is curvilinear. We review the arguments and evidence for both forms below. Based on the strength of these arguments, along with existing supporting evidence for both perspectives, we present and test competing hypotheses with respect to TMT-level turnover.

Arguments supporting an inverted-U curvilinear relationship are premised on the idea that some level of employee turnover is advantageous because it can improve firm performance by promoting innovation, flexibility, and adaptability (Abelson and Baysinger 1984, Dalton and Todor 1979). This perspective holds that collective turnover rates that are too low can harm firm performance because they may lead to skill stagnation and “trained incapacity.” Failing to replace current employees may result in opportunity costs associated with failing to upgrade human capital (i.e., more talented individuals replacing less talented employees) or social capital (e.g., bringing in individuals with established relationships with key external constituents), or both. In a similar vein, arguments found in the CEO succession and upper-echelons literatures suggest that executives can become “stale in the saddle” and that occasional changes at the top help root out poor performers and bring in new perspectives to ensure an optimal fit with changing markets (Miller 1991, Walsh and Ellwood 1991). These arguments stipulate that a TMT
group may become too entrenched in the status quo and may exhibit strategic conformity and lack the necessary vision to move firms into new or expanding markets through innovation and change (Cohen and Bailey 1997, Finkelstein and Hambrick 1990). A degree of TMT turnover can help avoid these costs of entrenchment and stagnation. Some extant research supports these arguments. At the TMT level, Virany et al. (1992) and Keck (1997) provide results suggesting that TMT turnover may be especially beneficial in industries where knowledge has a short half-life (e.g., computing). Although not a study of turnover per se, Miller (1991) provides evidence that longer-tenured CEOs tend to promote strategies that are a poor fit with the industry environment and that this lack of fit leads to poor performance. When rates of turnover become too high, however, the inverted-U argument suggests that excessive turnover within a collective (e.g., a TMT) may prove costly as a result of excessive losses of human and social capital (Hausknecht and Trevor 2011). Thus, this perspective posits that an optimal level of turnover may exist where both low and high levels of turnover are associated with lower performance. Hausknecht and Trevor’s (2011) review of the collective-level literature identifies four studies reporting an inverted-U curvilinear relationship. Based on these arguments and evidence, we propose that the relationship between TMT-level turnover rates and firm performance may take the following form.

HYPOTHESIS 2A. The relationship between TMT-level rates of turnover and performance is curvilinear such that low levels of turnover enhance performance, but this effect becomes negative as turnover rates increase.

The attenuated negative relationship is also curvilinear, but the underlying premise and form of the relationship differs from above. First proposed by Price (1977), this perspective suggests that firm performance will become increasingly impeded as rates of turnover move from low to moderate levels. Described as “diminishing damage” (Meier and Hicklin 2008), the argument is that as turnover rates continue to rise, at some point the loss of additional employees will transform from increasingly harmful to increasingly inconsequential (Hausknecht and Trevor 2011). Shaw and colleagues have developed these arguments over several papers, including Dess and Shaw (2001) and Shaw et al. (2005a, b; 2013). They have framed these arguments in terms of both human capital and social capital losses. Shaw et al. (2005a, p. 52) discuss the fact that whereas increases in collective turnover and concomitant human capital losses will decrease organizational performance at low to moderate levels, “when turnover rates are high, an organization typically replaces a short-tenured employee (with few firm-specific skills) with a new employee who soon represents the same level of human capital accumulation and shows equivalent performance” (italics in original). The implication of this argument is that at high levels of turnover, the negative effects of increased turnover on performance will be attenuated, and Shaw et al. (2005a) find this result. In Shaw et al. (2005b, p. 603), the focus turns to social capital losses, and they report a similar effect: as collective turnover increases, the initial effects on firm performance are “sharply negative” because of the impact social capital losses have on structural hole bridges and communication networks, “yet the incremental negative effect of social capital losses grows less pronounced as these losses increase.” Hausknecht and Trevor’s (2011) review identifies a total of eight studies supporting an attenuated negative relationship between collective-level turnover and firm performance. Shaw et al. (2005b) suggest “upper-echelon top management teams” as being a collective that would provide a good test of their arguments. Although we do not measure social capital, we do test for the existence of a negative attenuated relationship between TMT-level turnover and firm performance.

HYPOTHESIS 2B. The relationship between TMT-level rates of turnover and performance is curvilinear such that initial increases in turnover rates negatively affect performance, but this relationship attenuates as turnover rates increase.

TMT Turnover and Firm Performance: Contextual Moderators

As argued above, we expect that higher levels of turnover within the TMT will be associated with losses of firm-specific human and social capital that will ultimately lower overall levels of firm performance. We also suggest that this relationship may be curvilinear. Beyond this main effect, we expect two factors to moderate this relationship. First, we expect that industries that provide managers with greater latitude will enhance the importance of firm-specific human and social capital and, hence, the negative effects of TMT-level turnover. We expect this because as the degree of strategic choice awarded to managers increases, the importance of TMT decision making also increases (Hambrick and Finkelstein 1987). If firm-specific knowledge and social connectedness are generally important resources for a TMT, then such contexts should magnify the performance effects of these forms of organizational capital. Second, because we expect that average firm tenure of the TMT will positively affect human and social capital, we also expect that this construct will both positively influence firm performance and serve to moderate (i.e., buffer) the negative association between TMT-level turnover and performance. These moderating influences are discussed more completely below.

Industry Characteristics. Whereas the strategic management literature has long recognized the role that environmental factors play in the relationship between
internal firm characteristics and firm performance, the strategic human resource management literature has only recently begun to investigate these relationships. Recent work has provided support for the general argument that industry characteristics, such as research and development and labor intensity, increase the importance of human and social capital to firm performance (e.g., Datta et al. 2005, Guthrie and Datta 2008). More specific to the TMT, researchers have established the general principle that industry and firm conditions play an important role in affecting the relationship between TMT characteristics and firm performance (Carpenter and Fredrickson 2001, Carpenter et al. 2004, Hambrick and Finkelstein 1987, Ton and Huckman 2008). Here, we focus on whether industry conditions alter the relationship between TMT turnover and firm performance. Specifically, we consider whether specific industry-level factors—munificence, complexity, and instability—may moderate this relationship.

Each of these factors has been considered an important element that affects the degree of discretion that managers have in making strategic choices (Hambrick and Finkelstein 1987, Shen and Cho 2005). Depending on the context, firm leaders may be constrained by their industry or other environmental characteristics, which limits the number of strategic paths available. On the other hand, some industry contexts enhance the degree of discretion available to executives by providing multiple courses of action and fewer hindrances.

If our first hypothesis is correct and TMT-level turnover tends to generally erode firm performance, then this may be magnified in industry environments that provide managers with greater latitude in their decision making, where organizational functioning is particularly affected by the quality of a TMT’s human and social capital. This is consistent with Argote (1999), who notes that the more an organization’s performance depends on the knowledge of employees, the higher the rate of depreciation associated with employee turnover. Similarly, Ton and Huckman (2008) demonstrate that losses associated with employee turnover are more deleterious to performance when the task environment is more uncertain and ambiguous. In retail stores that had low levels of conformance to corporate-specified processes, the loss of employees was more damaging than when process conformance was strictly adhered to by retail managers. When process conformance was emphasized, employees were more easily replaced when turnover occurred. However, when the task environment was less clearly defined, employees’ competencies and decision making had a stronger effect on performance, resulting in employee departures being particularly harmful to performance.

In a similar vein, we expect that losses of human capital will be more strongly felt in industry contexts providing executives with more latitude in their strategic choices. In addition, although TMT human capital is important, building and preserving social capital may be particularly important in these sectors. These environments may magnify the effect of TMT-level turnover and social capital losses in the form of knowledge gained from brokered relationships and stored in transitive (social system) memory (Burt 1997, Dess and Shaw 2001). In sum, TMT turnover is likely to be particularly disruptive and harmful when it occurs within firms situated in high-discretion environments. We test these ideas by examining the moderating influence of three different elements of industry-based discretion: instability, munificence, and complexity. This focus is consistent with the views of Hambrick and Abrahamson (1995, p. 1428), who describe industry characteristics as having the “broadest and perhaps most fundamental of the loci of discretion,” and is consistent with work in the strategic human resource management (Datta et al. 2005) and strategic management (e.g., Hambrick and Abrahamson 1995, Keats and Hitt 1988) literatures.

Industry instability refers to the predictability of relationships among customers, suppliers, regulatory agencies, and competitors in the environment as well as the general trends within the industry (Dess and Beard 1984, Guthrie and Olian 1991, Keats and Hitt 1988). Unstable markets create uncertainty in means–end linkages, thereby increasing discretion (Hambrick and Abrahamson 1995). TMTs making decisions in unstable environments are likely to have more variables to consider, more contingencies to examine, and greater latitude in terms of potential strategic responses.

Industry munificence, or market growth, is a construct that refers to the level of resource abundance that exists within a firm’s external environment (Dess and Beard 1984). Munificent environments tend to be characterized by abundant growth opportunities and fewer external threats (Bloom and Michel 2002). In turn, this increases the “degrees of freedom” available to organizational leaders (Finkelstein and Hambrick 1996), allowing for greater strategic choice and magnifying the “executive effect.” Munificent environments are expected to increase the salience of the TMT’s role in making strategic decisions, magnifying both their positive and negative influences on firm performance.

Industry complexity refers to the various dimensions a firm faces in its industry with regard to the number and size of its competitors. Organizations in concentrated industries, or more monopolistic environments, are generally thought to face less complexity (Keats and Hitt 1988, Khandwalla 1973, Porter 1980, Starbuck 1976, Williamson 1965). Consolidation reduces the number of players in a given industry and tends to result in competitors of relatively similar size. This serves to reduce the number of variables strategic leaders must contemplate in their decision making, thereby decreasing...
the amount of managerial discretion. More fragmented industries are thought to be more complex and lead to an enhanced role for the TMT in competitive positioning.

In sum, instability, munificence, and complexity all increase the amount of discretion awarded to a firm’s TMT, and therefore they may serve to place a premium on the human and social capital within that team. As a result, erosions of these organizational resources through higher rates of TMT turnover are likely to be more damaging in such contexts. Therefore, we test the following set of related hypotheses.

**Hypothesis 3A.** *Industry instability will moderate the relationship between TMT turnover and firm performance. Higher levels of instability will increase the negative effect of TMT turnover on subsequent firm performance.*

**Hypothesis 3B.** *Industry munificence will moderate the relationship between TMT turnover and firm performance. Higher levels of munificence will increase the negative effect of TMT turnover on subsequent firm performance.*

**Hypothesis 3C.** *Industry complexity will moderate the relationship between TMT turnover and firm performance. Higher levels of complexity will increase the negative effect of TMT turnover on subsequent firm performance.*

**Average TMT Organizational Tenure.** An additional element that may alter the relationship between TMT turnover and firm performance is the average tenure levels of executives remaining with the firm. We speculate as to whether the tenure of the executives still in place within the TMT will help to mitigate human and social capital losses associated with the departure of fellow team members. Buttressed by the fact that the organizational tenure of executives and the TMT has received a great deal of attention in the strategic leadership literature, we consider this team-level characteristic to be an important factor. In fact, tenure is considered by some scholars to be the most important differentiating characteristic of top managers (Finkelstein and Hambrick 1990), and a number of studies have examined the implications of tenure levels of TMT members for organizational functioning (e.g., Bergh 2001, Boeker 1997, Carpenter 2002, Carpenter and Fredrickson 2001, Fischer and Pollock 2004, Keck 1997, Michel and Hambrick 1992).

Although long-term tenure is sometimes viewed as a liability in the strategic management literature (e.g., Finkelstein and Hambrick 1990, Hambrick et al. 1993, Wiersema and Bantel 1992), a contrasting view is that executive and TMT tenure is an intangible asset endowing firms with an increased capability to achieve competitive advantage and success (Bergh 2001). This is consistent with human capital theory, which stipulates that organizational effectiveness is positively affected by the accumulation of firm-specific, valuable human capital (Crook et al. 2011, Stroher 1990). Organizational tenure increases firm-specific human capital in the form of greater depth and breadth of explicit and tacit knowledge. Long-term organizational familiarity leads to a rich source of knowledge about a company’s buyers, vendors, markets, politics, historical successes and failures, processes, technologies, people, products or services, and a host of other factors (Bergh 2001, Collins and Clark 2003, Gupta 1984). Assets embedded in relationships (i.e., social capital as defined by Leana and Van Buren 1999) also take time to develop and should increase as a function of time spent in an organization.

Consistent with this previous conceptual and empirical work on firm experience and human capital (e.g., Crook et al. 2011), we expect TMTs with greater average organizational tenure to have a comparative advantage over those with less firm-specific experience from which to draw. As it pertains to our assessment of TMT turnover, however, we also are interested in examining the possibility that average team-level firm tenure levels may interact with TMT turnover rates to further affect firm performance.

Whereas TMTs with greater levels of firm-specific experience should have more extensive communication networks, individual team members will also be more likely to develop similar levels of knowledge and overlapping social networks. As such, the team is likely to generate absorptive capacity, or the ability to recognize and harvest new knowledge from within and outside of the organization that may help improve firm performance (Cohen and Levinthal 1990, Khoja and Maranville 2010, Lane and Lubatkin 1998). This absorptive capacity is likely manifest in the creation and codification of knowledge within the team, as well as deeply rooted processes for acquiring and assimilating knowledge (Khoja and Maranville 2010). In long-established teams, each team member is likely to have an understanding of how strategic choices have been made in the past and will develop similar patterns for acquiring the knowledge to make such decisions in the future. Therefore, although we expect greater turnover rates to be associated with reduced performance, we also anticipate this effect to be softened by the absorptive capacity generated by the remaining team members’ organizational experience and the associated redundancies in the team’s knowledge and social networks. This team-level resource will make the loss of a single team member less deleterious to the firm’s human and social capital.

More specifically, we expect that TMTs having higher levels of organizational capital (i.e., human and social capital) accrued through longer firm experience will be able to leverage this capital to mitigate the negative effects of turnover among their ranks. Although executive departures represent losses in the form of TMT-specific human capital and dissolved relationships, both
the amount and pattern (redundancies) of these assets among the remaining team members may help the team to weather disruptions associated with team turnover.

**Hypothesis 4.** The average organizational tenure of the TMT will moderate the relationship between TMT turnover and firm performance. Higher levels of average TMT-level organizational tenure will mitigate the negative effect of TMT turnover on subsequent firm performance.

**Data and Methods**

**Data and Sample**

We address our research questions using data from 367 firms representing 134 four-digit Standard Industrial Classification codes over the years 1993–2004. The firms selected are single industry firms—they earn a minimum of 70% of their revenue from a single industry classification. The reported results are based on firms who had complete information for the selected time periods. Data for each firm were drawn from Compustat and ExecuComp. Data were collected in rolling three-year increments to capture the data longitudinally and avoid bias that may arise from large yearly fluctuations. For instance, data corresponding to base year 1995 include information from 1993, 1994, and 1995, whereas base year 1996 contains these same data from the years 1994, 1995, and 1996. This approach is similar to other research on TMT turnover (see Wiersema and Bantel 1993).

We follow previous research on TMTs by defining TMTs as “dominant coalitions” that “provide an interface between the firm and its environment, and are relatively powerful, and therefore their choices and actions are likely to have an impact on the organization” (Carpenter et al. 2004, p. 753). We utilize ExecuComp to supply our TMT data because it has a number of advantages. First, it is a large database containing TMT data on the S&P 1500 firms across a number of years. Second, it lists the names of individual executives, allowing us to track departures across the years. Third, firms are required to provide pay data on their five highest-paid executives (at a minimum), and ExecuComp tracks and reports information on these executives. As the highest-paid employees, these executives are, almost by definition, the key set of individuals in their respective firms. This has led many to use the highest-paid group as reported by the organization as the operationalization of the TMT (i.e., Bloom and Michel 2002, Carpenter and Sanders 2002, Fredrickson et al. 2010, Henderson and Fredrickson 2001, Main et al. 1993). ExecuComp provides the titles for these individuals, and the modal positions are (in order of frequency): CEO/chair, executive vice president (VP), senior VP, VP, and president. Finally, although firms are only required to provide information on their top five executives, many provide data on more than five, and ExecuComp provides all of this information. In fact, the average number of executives in the TMT group in our sample is 6.39. This compares favorably with the size of TMTs utilized in other studies. Carpenter et al. (2004) report TMT size data on 21 separate operationalizations in their review of the upper-echelons literature. The average size across those 21 TMTs is 6.54, a number that parallels our TMT size (6.39). More information pertaining to the operationalization of each variable is provided below.

**Measures**

The individual change phenomena of firm performance in our study can be represented through a two-level hierarchical model. At Level 1, each firm’s performance change is represented by a growth trajectory that depends on a unique set of parameters associated with repeated measures varying over time. These individual growth parameters become the outcome in a Level 2 model, where they depend on firm-level characteristics that are invariant over time. Given the nested data structure where repeated observations are nested within firms, our measures are operated at two levels. Level 1 variables are assumed to vary over time and are thus observed repeatedly. Level 2 variables include time-invariant variables that are assumed to be stable over time. For all of the Level 2 variables, the average values across repeated observations were used. All the variables used in our study were grand mean-centered (Hofmann and Gavin 1998).

**Level 1 Variables.** The variables in Level 1, which are time varying and observed repeatedly, are as follows.

**Firm performance.** Firm performance was assessed using a rolling three-year average of return on assets (ROA). An average was utilized because it allows for the smoothing of yearly fluctuations in performance (Carpenter 2002). The lag structure is such that there is one year of overlap between the averages for the independent/control variables and the dependent variable. In other words, average turnover rates from 1995 to 1997 are used to predict average firm performance from 1997 to 1999. This lag structure was selected because it allows for proximal chronological sequencing to assess the effect of turnover across time, without capitalizing on short-term performance drops as the result of changes in the TMT that may be accompanied by changes in firm-level strategy. This data structure also allows for the fact that collective turnover is likely to have both immediate and longer-term effects on performance (Hausknecht and Trevor 2011).

**Top management team turnover.** Team-level TMT turnover was measured by analyzing the rate of executive departure across a three-year time period. All executives, including the CEO, were included in the turnover
calculations. Because of the unique position of the CEO and the research stream studying the organizational consequences of CEO succession events, we include an additional dummy variable to indicate whether a firm’s CEO departed during a given three-year time period. The number of executives who left the TMT within a three-year period were then summed and divided by the total number of executives employed by the firm during the same three-year time span to yield an average turnover percentage for each firm.

Each executive who left the TMT was coded as a turnover event, regardless of the reason for the departure reported in the ExecuComp database. We selected this approach because ExecuComp only lists four explanatory codes for executive departures: unknown, resignation, retirement, and death. In addition, many of the turnover events do not list a reason for an executive’s departure. As a result of these missing data and the fact that “forced” executive departures events are often not reported as involuntary (Wagner et al. 1984), we include all turnover events in our analysis. Furthermore, all forms of turnover may affect the human and social capital pool in the TMT.²

Level 2 Variables. The variables in Level 2, which are time invariant and stable, are as follows.

Industry characteristics. We followed Keats and Hitt (1988) in our operationalization of industry characteristics. Industry instability was measured by regressing sales across five years of time for each four-digit industry. The antilog of the standard error of each regression was used as the instability measure for each firm. Industry munificence was measured using the same regression equation of sales across time. This reflects the overall growth in an industry, where greater growth is taken to indicate greater munificence. The antilog of the regression slope coefficient from this regression equation was used as the measure of munificence. Industry complexity was measured using the same measure employed by Keats and Hitt (1988). This method looks at firm market share to understand the concentration of a given industry, where greater concentration is said reduce complexity. The measure is described by Keats and Hitt (1988, p. 597) as “essentially a regression of terminal-year market shares of all firms in a given industry (Yi’s) upon their shares in the initial year (Xi’s). The resulting regression coefficient suggests increasing or decreasing monopoly power in the industry.”

Average TMT organizational tenure. This measure was operationalized as the average organizational tenure of executives within the TMT for a given year. Tenure data were extracted from the ExecuComp database when available and supplemented by reviewing company 10-K filings when ExecuComp data were missing. These efforts provided complete tenure information on most of the executives in the sample; however, some executive tenure information was still not reported. As a result, all firms without complete tenure information on at least 60% of the reported executives were removed from the sample. An average was then taken of the executives with tenure information for each firm-year to provide an assessment of the average tenure levels of the TMT. Our median organizational tenure of the TMT of 12.67 years is fairly close to Carpenter’s (2002) reported median TMT tenure (10.37), derived from a similar sample (large and medium-sized firms according to Standard & Poor’s).

Control Variables. At Level 1, prior firm performance was included as a control variable. We also included year to control for the pattern of a firm’s growth trajectory. Consistent with the method recommended by Raudenbush and Bryk (2002), we centered the variable with the middle point (1,999.5) between 1997 and 2002. Additionally, a dummy variable was included to indicate whether or not a CEO departed during the same three-year period that TMT turnover was measured. As an additional control, TMT organizational tenure diversity was measured using the coefficient of variation in tenure within the team. This measure allows us to assess the effects of having disparate tenure levels within the team, an important consideration in the organizational demography literature (Wagner et al. 1984).

At Level 2, firm size was controlled for and operationalized as the natural log of the number of employees as reported in the Compustat database. Additionally, the number of repeated observations was also included to control for any effect of that the frequency of observations in Compustat may have on levels of firm performance.

Methods

Before analyzing the data, nonnormality was assessed, and appropriate transformations were made when necessary. Since our model involves a data structure where repeated measures were nested within individual firms, we used hierarchical linear modeling (HLM) to help explain changes in the performance of individual firms (Raudenbush and Bryk 2002). Typically, in this type of HLM application, repeated observations are specified in the Level 1 model, and firm-level data that are assumed invariant across time are specified in the Level 2 model. Our Level 1 model includes all the time and time-varying covariates in the following manner:

\[
\text{Firm\_performance}_{it} = \beta_0 + \beta_1 \cdot Year_{it} + \beta_2 \cdot TMT\_departure_{it} + \beta_3 \cdot TMT\_diversity_{it} + \beta_4 \cdot TMT\_tenure_{it} + \beta_5 \cdot \text{other covariates}_{it} + \epsilon_{it},
\]

where (1) MA denotes the moving average of the variable for the three-year period specified in the subsequent
parentheses, (2) $\pi$ indicates the growth trajectory parameter for firm $i$, and (3) $e$ indicates an error term.

Alternatively, the above equation is equivalent to the following:

$$
\text{Performance}_{it} + \text{Performance}_{it+1} + \text{Performance}_{it+2} = \pi_{0i} + \pi_{1i} \cdot \text{Year}_{it-1} + \pi_{2i} \cdot \text{Performance}_{it-1} + \pi_{3i} \cdot \text{CEO}_\text{departure}_{it-1} + \pi_{4i} \cdot \text{TMT}_\text{diversity}_{it-1} + \pi_{5i} \cdot \text{Turnover}_{it-2} + \text{Turnover}_{it-1} + \text{Turnover}_{it} + \pi_{6i} \left( \frac{\text{Turnover}_{it-2} + \text{Turnover}_{it-1} + \text{Turnover}_{it}}{3} \right)^2 + e_{it}.
$$

The Level 2 model is specified as follows:

$$
\pi_{0i} = \beta_{00} + \beta_{01} \cdot \text{Firm}_\text{size} + \beta_{02} \cdot \text{Tenure} + \beta_{03} \cdot \text{Industry}_\text{instability} + \beta_{04} \cdot \text{Industry}_\text{munificence} + \beta_{05} \cdot \text{Industry}_\text{complexity} + \beta_{06} \cdot \text{No\_of\_observations} + \eta_0,
$$

$$
\pi_{1i} = \beta_{10} + \beta_{11} \cdot \text{Tenure} + \beta_{12} \cdot \text{Industry}_\text{instability} + \beta_{13} \cdot \text{Industry}_\text{munificence} + \beta_{14} \cdot \text{Industry}_\text{complexity} + \eta_1,
$$

$$
\pi_{2i} = \beta_{20} + \rho_2,
$$

$$
\pi_{3i} = \beta_{30},
$$

$$
\pi_{4i} = \beta_{40},
$$

where $\beta$ indicates the effect of a Level 2 variable on the growth parameter, and (2) $r$ denotes a random effect.

### Results

Descriptive statistics are presented in Table 1. Average TMT turnover ranges from 0% to 56%, with a mean value of 10.79%. Average TMT member organizational tenure in this sample is 12.67 years. Also, particularly germane to this study, TMT turnover is negatively correlated ($r = -0.19, p < 0.001$) with subsequent firm performance.

The results of the hierarchical linear modeling analysis are presented in Table 2. Model 1 includes all the time-varying variables at Level 1 and all of the time-invariant variables that are assumed relatively stable over time at Level 2. This model was used to test Hypotheses 1 and 2, where the main effect of turnover and the turnover squared term were hypothesized. More specifically, Hypothesis 1 stated that turnover would negatively affect subsequent firm performance. Consistent with Hypothesis 1, we find a significant negative relationship between TMT turnover and subsequent firm performance ($p < 0.001$).

In Hypothesis 2, we predicted two different possibilities regarding the potential curvilinear effects of turnover.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel A: Level 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Post performance</td>
<td>0.50</td>
<td>9.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Year</td>
<td>0.15</td>
<td>1.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Prior performance</td>
<td>1.34</td>
<td>3.34</td>
<td>0.51***</td>
<td>-0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. CEO departure</td>
<td>0.02</td>
<td>0.14</td>
<td></td>
<td>-0.07***</td>
<td>-0.05*</td>
<td>-0.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. TMT diversity</td>
<td>0.69</td>
<td>0.33</td>
<td></td>
<td>-0.10***</td>
<td>-0.03</td>
<td>-0.06*</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>6. Turnover</td>
<td>0.11</td>
<td>0.08</td>
<td>-0.19***</td>
<td>-0.07***</td>
<td>-0.17***</td>
<td>0.21***</td>
<td>0.31***</td>
<td></td>
</tr>
<tr>
<td>7. Turnover$^2$</td>
<td>0.02</td>
<td>0.03</td>
<td>-0.17***</td>
<td>-0.07***</td>
<td>-0.19***</td>
<td>0.28***</td>
<td>0.28***</td>
<td>0.91***</td>
</tr>
<tr>
<td>Panel B: Level 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Mean post performance</td>
<td>-0.37</td>
<td>10.98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Firm size</td>
<td>3.86</td>
<td>0.35</td>
<td>0.15**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Number of observations</td>
<td>4.23</td>
<td>1.79</td>
<td>0.19***</td>
<td>0.14**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Tenure</td>
<td>12.67</td>
<td>7.28</td>
<td>0.27***</td>
<td>0.28***</td>
<td>0.31***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Industry munificence</td>
<td>1.06</td>
<td>0.07</td>
<td>0.18***</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Industry instability</td>
<td>1.04</td>
<td>0.03</td>
<td>-0.01</td>
<td>-0.23***</td>
<td>-0.05</td>
<td>0.11*</td>
<td>0.10</td>
<td>0.00</td>
</tr>
<tr>
<td>7. Industry complexity</td>
<td>1.22</td>
<td>0.41</td>
<td>0.07</td>
<td>-0.12*</td>
<td>-0.09</td>
<td>0.11*</td>
<td>0.28***</td>
<td>0.57***</td>
</tr>
</tbody>
</table>

*Note. For panel A, $N = 1,551$; for panel B, $N = 367$. 
*p < 0.05; **p < 0.01; ***p < 0.001 (two-tailed).
on subsequent firm performance: (1) an inverted-U relationship (Hypothesis 2A) and (2) an attenuated negative relationship (Hypothesis 2B). The sign associated with the turnover squared term was positive and significant ($p < 0.05$), suggesting a negative but attenuated relationship; that is, the negative relationship between TMT turnover and performance attenuated as turnover rates increased, supporting Hypothesis 2B rather than Hypothesis 2A.

In addition to the hypothesized effects, we also find a negative year effect on subsequent firm performance ($p < 0.001$) in Model 1. In addition, as TMT diversity increased, there was a negative impact on subsequent firm performance ($p < 0.05$). This suggests higher levels of TMT organizational tenure diversity are associated with lower levels of firm performance. Among the time-invariant variables, average TMT organizational tenure has a significant positive effect on firm performance, implying the relative importance of average TMT tenure with the organization ($p < 0.05$).

In addition to variables in Model 1, Model 2 includes cross-level interaction terms. We used Model 2 to test Hypotheses 3 and 4 because these hypotheses assume cross-level interaction between (1) turnover and various industry characteristics and (2) turnover and average TMT organizational tenure. In addition to these cross-level interaction terms, we included other potential cross-level interactions. The moderating effect of industry characteristics on the relationship between TMT turnover and firm performance was hypothesized in Hypothesis 3. The interaction term $\text{Turnover} \times \text{Industry munificence}$ was statistically significant ($p < 0.001$), but in the opposite direction, suggesting no support for Hypothesis 3B. Hypotheses 3A and 3C were also not supported because the interaction terms between TMT turnover and these industry characteristics (instability and complexity) were not statistically significant. The moderating effect of average TMT organizational tenure on the relationship between TMT turnover and firm performance was also tested in Model 2. The cross-level interaction term $\text{Turnover} \times \text{Tenure}$ was significant and in the expected direction ($p < 0.01$). Therefore, Hypothesis 4 was supported.

### Table 2: Results from the Hierarchical Regression Modeling

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 (time varying)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>$-0.95$ ($164.79/0.76$)</td>
<td>$-1.00$ ($160.29***/0.74$)</td>
</tr>
<tr>
<td>Year</td>
<td>$-0.58***$ ($2.90/0.13$)</td>
<td>$-0.57***$ ($2.72/0.13$)</td>
</tr>
<tr>
<td>Prior performance</td>
<td>$-0.09$ ($0.29/0.05$)</td>
<td>$-0.07$ ($0.30/0.05$)</td>
</tr>
<tr>
<td>CEO departure</td>
<td>$-2.66$ 1.58</td>
<td>$-2.73$ 1.58</td>
</tr>
<tr>
<td>TMT diversity</td>
<td>$-1.61^*$ 0.70</td>
<td>$-1.50^*$ 0.70</td>
</tr>
<tr>
<td>Turnover</td>
<td>$-22.86^{**}$ ($8,571.32/6.41$)</td>
<td>$-26.12^{**}$ ($8,175.01/6.83$)</td>
</tr>
<tr>
<td>Turnover$^2$</td>
<td>$38.73^*$ ($33,952.28/16.52$)</td>
<td>$47.15^*$ ($31,361.75/16.43$)</td>
</tr>
<tr>
<td>Level 2 (time invariant)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm size</td>
<td>0.61 1.09</td>
<td>0.69 ($1.12$)</td>
</tr>
<tr>
<td>Number of observations</td>
<td>0.30 0.31</td>
<td>0.26 ($0.31$)</td>
</tr>
<tr>
<td>Tenure</td>
<td>0.16* 0.08</td>
<td>0.39** ($0.11$)</td>
</tr>
<tr>
<td>Industry munificence</td>
<td>12.89* 6.34</td>
<td>38.55*** ($8.90$)</td>
</tr>
<tr>
<td>Industry instability</td>
<td>$-24.91$ 19.46</td>
<td>$-5.10$ ($25.60$)</td>
</tr>
<tr>
<td>Industry complexity</td>
<td>1.66 1.12</td>
<td>$-0.37$ ($1.64$)</td>
</tr>
<tr>
<td>Cross-level interaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year $\times$ Tenure</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Year $\times$ Industry munificence</td>
<td>5.70***</td>
<td>1.47</td>
</tr>
<tr>
<td>Year $\times$ Industry instability</td>
<td>2.34</td>
<td>4.28</td>
</tr>
<tr>
<td>Year $\times$ Industry complexity</td>
<td>$-0.40$</td>
<td>0.32</td>
</tr>
<tr>
<td>Turnover $\times$ Tenure</td>
<td>3.10** 1.06</td>
<td></td>
</tr>
<tr>
<td>Turnover $\times$ Industry munificence</td>
<td>311.28***</td>
<td>73.14</td>
</tr>
<tr>
<td>Turnover $\times$ Industry instability</td>
<td>283.30</td>
<td>280.01</td>
</tr>
<tr>
<td>Turnover $\times$ Industry complexity</td>
<td>$-27.84$</td>
<td>16.74</td>
</tr>
<tr>
<td>Turnover$^2$ $\times$ Tenure</td>
<td>$-4.99^*$ 2.45</td>
<td></td>
</tr>
<tr>
<td>Turnover$^2$ $\times$ Industry munificence</td>
<td>$-824.38***$</td>
<td>196.85</td>
</tr>
<tr>
<td>Turnover$^2$ $\times$ Industry instability</td>
<td>$-446.94$</td>
<td>766.97</td>
</tr>
<tr>
<td>Turnover$^2$ $\times$ Industry complexity</td>
<td>84.93</td>
<td>45.13</td>
</tr>
</tbody>
</table>

Deviance: 9,341.31, 9,246.74

*For Level 1 variables, the first number in the parentheses is the variance component, and the second number is the standard error.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed).
The pattern of the significant moderating effect of average TMT organizational tenure on the relationship between TMT turnover and firm performance is illustrated in Figure 1. Since HLM produces an asymptotic variance and covariance matrix of the coefficients based on robust standard errors, we utilize this matrix to run simple slope tests following the procedure recommended by Preacher et al. (2006). This procedure demonstrates that when a firm has low levels of average TMT organizational tenure (one standard deviation below the mean), the effect of turnover on subsequent performance is negative and statistically significant ($\gamma = -44.90$, $z = -3.44$, $p < 0.001$). However, when a firm has high levels of average TMT organizational tenure, turnover does not affect subsequent firm performance ($\gamma = -6.75$, $z = -1.04$, n.s.). These relationships are graphically displayed in Figure 1, which shows that the effect of TMT turnover is negative when a firm has low average TMT organizational tenure levels, but not for a firm that has high average TMT organizational tenure levels.

In an effort to determine the practical significance of the results from the study, we also calculated effect size estimates. In HLM, effect size is calculated at two different levels. At Level 1, it is calculated by comparing the within-firm residual variance of the restricted model with that of the unrestricted model, which allows for $R^2$ change values within firms to be calculated. At Level 2, effect sizes are estimated by comparing between-firm residual variances of the restricted model and the unrestricted model, allowing for an $R^2$ change value between firms to be calculated. These are not the same as $R^2$ changes in an ordinary least squares regression, where statistical significance can be tested using an $F$-test (please see additional details in Kreft and De Leeuw 1998, Singer 1998). To calculate the effect size associated with turnover and the turnover squared term, we dropped turnover and the turnover squared term from Model 1 in Table 2 (unrestricted model) and compared the within-firm residual variance with that of Model 1 (restricted model). By adding two additional terms, compared with the unrestricted model, the restricted model yielded an additional $R^2$ change of 0.118 within firms. This means that approximately 12% of the within-firm variance was explained by turnover and the turnover squared term; $R^2$ between firms did not change.

We also calculated the $R^2$ change associated with the significant cross-level interaction term $\text{Turnover} \times \text{Tenure}$ by comparing a model that lacks this term from Model 2 of Table 2 (unrestricted model) and Model 2 (restricted model). We followed the same procedure as described in the above paragraph. The $R^2$ change within firms was 0.025, and the $R^2$ change between firms was 0.037, indicating that approximately 3% of the variance within firms and an additional 4% of the variance between firms were explained by incorporating the cross-level interaction term.

**Discussion and Conclusions**

Our findings generally agree with the sentiments of scholars emphasizing the importance of employees as important resources for achieving competitive advantage and organizational success (Snell et al. 1996, Wright et al. 2001). Consistent with previous work, we find TMT dynamics and characteristics to have significant implications for firm performance. More specifically, we find that as rates of TMT turnover increase, firm performance tends to suffer. These results agree with a growing body of previous work showing a negative association between collective-level turnover rates and organizational effectiveness (Hancock et al. 2013, Hausknecht and Trevor 2011, Nyberg and Ployhart 2013, Park and Shaw 2013). Per Shaw et al. (2005a, b), Dess and Shaw (2001), and Shaw et al. (2013), TMT losses may harm firm performance through degradations in organizational resources in the form of human and social capital.

Although difficult to directly measure and quantify, the firm- and team-specific tacit knowledge within TMTs along with the key social connections of the team both within and outside of the organization may represent important sources of organizational capital and value. Although our findings further support the upper-echelons perspective in revealing the importance of the top management team, it does signal the need for a closer examination of the role of managerial retention. Conceptual arguments and empirical findings both suggest that excessive tenure levels in the executive suite may be associated with
risk aversion, industry conformity, and strategic persistence (Cohen and Bailey 1997, Finkelstein and Hambrick 1990, Miller 1991). As Finkelstein and Hambrick (1990, p. 498) note, “[O]rganizations with long-tenure teams exhibit organizational performance that closely adheres to industry averages, while short-tenure teams are associated with performance levels that deviate—being either much higher or lower—from industry tendencies.” Although this argument has withstood empirical examination (i.e., Finkelstein and Hambrick 1990, Wiersema and Bantel 1992), our results caution against the presumption that change in the executive suite will typically benefit organizations.

Firms with a stable group of executives may be better able to develop both an appropriate firm-level strategy and the necessary organizational capabilities and culture to support and effectively implement this strategy. In other words, a more stable TMT may allow team members to marshal and tailor their collective human and social capital to the competencies of the individuals within the firm and the demands of the environment. The findings of this study point to a need for additional research on the nature of the relationships linking TMT turnover and executive tenure with firm performance, as well as the mediating and moderating effects of industry membership and strategic choice. In particular, firms pursuing “exploitation” rather than “exploration” strategies (March 1991) may yield greater benefits from executive retention.

These results also add to the recent turnover literature extending individual-level research to examine the effects of collective-level measures of turnover on firm performance (Hancock et al. 2013, Hausknecht and Trevor 2011, Nyberg and Ployhart 2013). By analyzing turnover at the TMT level for a large-scale, multi-industry sample, we are able to add a unique set of results to this growing literature. Our findings parallel this previous work. In addition, our results revealing a (modest) attenuated negative curvilinear pattern are consistent with a number of results reported previously (see Hausknecht and Trevor 2011).

In addition to testing the main effect of TMT turnover on firm performance, we also explore moderating factors that may alter this relationship. Consistent with previous theoretical and empirical work, we argue that industry factors that increase managerial discretion will magnify the importance of the TMT (e.g., Haleblian and Finkelstein 1993, Hambrick and Finkelstein 1987) and the effect of any losses of organizational capital associated with TMT turnover. Using three industry dimensions (instability, munificence, complexity) that theory suggests should increase levels of managerial discretion, we expected to find that TMT turnover would have a more pronounced negative effect on firm performance in high-discretion environments. Our results did not support this contention. In fact, our only significant finding was that higher levels of munificence tended to dampen the negative association between TMT turnover rates and firm performance (see Figure 2). This may indicate that the target-rich environment found in growing markets may serve to decouple or soften the link between TMT turnover and firm performance. Although our results may be valid, future work should explore these relationships in more detail, including a consideration of other sources of managerial discretion. Whereas our study focused on industry factors affecting TMTs’ latitude of action, future research might examine the moderating effects of individual and organizational determinants of TMT discretion (Hambrick and Finkelstein 1987). Our analysis also explored the moderating effect of average TMT organizational tenure. Viewed as an indicator of accrued firm-specific human capital and social capital, we presented an argument that extensive organizational experience on the part of the TMT will help to soften the losses associated with turnover. Higher rates of TMT turnover in the context of a longer-tenured team will likely see less performance degradation, because they have greater stocks of human capital to rely on, along with dense, redundant social networks both inside and outside of the organization. As reported above, we find support for the prediction that increased average TMT organizational tenure tempers the negative effect of losses from the executive team. Whereas this is an interesting finding, it also opens the door for further discussion on the role of tenure as a source of human and social capital in the TMT. For example, average firm tenure may have positive buffering effects only to the extent that it generates redundant social networks. Future work on TMT turnover might calculate the density and characteristics of TMT members’ intrafirm and interfirm social networks to gauge the potential for organizational disruption associated with executive departures.
Whereas we begin to assess the contextual factors in our sample of single-business firms, future research should also investigate other potential moderators. One factor that may affect the TMT turnover–firm performance relationship is the extent of corporate diversification. Gupta (1984, 1988) proposes that a firm’s diversification posture influences the importance and value of firm-specific experience. He argues that at the single-business end of the diversification continuum, organizational familiarity is more important than in unrelated, diversified firms. According to Gupta, managing a single-business firm requires intimate knowledge of the firm’s input, throughput, and output strengths and weaknesses, along with an understanding of the product market or industry in which it competes. As the degree of diversification increases, the importance of knowledge of the core business gives way to skills associated more with portfolio management (Gupta 1984), and firm-specific experience may be less important. Michel and Hambrick (1992) make similar arguments but fail to find empirical support. An extension of these arguments is that TMT turnover may become progressively less harmful as diversification increases.

Limitations

Study findings should be interpreted in light of several noteworthy limitations. First, the theoretical contribution of this study is limited by our inability to delineate and measure the effect that TMT turnover has on organizational capabilities, most notably human capital and social capital. Although we argue that TMT turnover erodes these important organizational assets, we do not test these arguments explicitly. This limitation is particularly salient when one considers the “teamness” concept and the fact that different CEOs manage the organization and the TMT in distinct ways (Hambrick 1994). CEOs with a more autocratic managerial style may render the members of the TMT less valuable on an individual level, as decisions tend to flow from the very top of the firm, whereas those with more democratic approaches may be more adversely affected by losses within the TMT. The level of geographic dispersion within the team may also have an effect on how strongly TMT turnover affects performance (Cannella et al. 2008). Teams that are more geographically dispersed may be less interconnected and therefore less likely to see performance degradations as team members exit the organization.3

In addition, it is important to note that the turnover literature makes a distinction between involuntary and voluntary turnover. This is an important distinction because involuntary turnover, if managed properly, may have positive consequences for organizational functioning. In contrast, the general argument made regarding voluntary turnover is that it tends to be “dysfunctional” and harmful to organizational effectiveness. Unfortunately, given our current data set, we are unable to differentiate between voluntary and involuntary turnover events. Although this is a noteworthy limitation, it is a common limitation in such studies because there is great difficulty in determining whether or not an executive’s departure is voluntary or involuntary (Wagner et al. 1984). In addition, there are at least two reasons that lessen concern here. First, because poor performance promulgates executive departures (both in previous studies and in our results), the inclusion of this measure in our models helps to control for involuntary turnover effects. Second, testing the effect of “total turnover” provides a conservative test of our arguments.

Although effects of voluntary and involuntary turnover may differ, our results suggest that the total effect of turnover within the TMT is negative. These results are consistent with recent work suggesting that increased rates of voluntary and involuntary turnover both have negative implications for firm performance (e.g., Batt and Colvin 2011, Hancock et al. 2013, McElroy et al. 2001). For example, McElroy et al. find a similar result in a study of the effects of various forms of turnover in different branches of a financial services firm. These authors report that voluntary, involuntary, and reduction in force turnover rates were all associated with lower levels of subsequent unit-level performance. The meta-analytic results of Hancock et al. (2013) also support the idea the voluntary and involuntary turnover rates both display negative associations with firm performance. Certainly, these results do not obviate the need for involuntary turnover (i.e., terminations) at the individual level, since this may be necessary to stimulate reconfigured strategies, new innovations, or the penetration of new markets; however, the total effect of turnover at the collective level in the near term appears to be negative. Future work is necessary to refine our knowledge in this area and expand the understanding of disparate turnover effects at differing time intervals.

Another limitation is that our tests of relationships involving TMT organizational tenure do so with less than complete data. Although we suggest that these missing data should not bias results, this remains a limitation. An additional concern is that we are unable to infer causality because we are leveraging cross-sectional data. Cautious causal claims can be made because we measured turnover and subsequent firm performance in adjacent three-year time periods while controlling for firm- and industry-level effects using hierarchical linear modeling; however, it is still plausible that exogenous forces beyond our control explain found relationships. This possibility is especially salient since our models only explain relatively modest amounts of variance in subsequent firm performance.

Conclusion

Dilbert is a very popular comic strip in part because many of its author’s wry observations of organizational
life ring true with its readership. Scott Adams’ insight (see Figure 3) that TMT turnover can erode organizational effectiveness is borne out in our study: as rates of TMT turnover increase, firm performance decreases. The negative implication of TMT turnover for firm performance supports the argument that the loss of TMT members represents a diminution of valuable organizational resources in the form of human and social capital. Further analysis suggests that this relationship may be nonlinear, with the strength of this negative association tapering at higher levels of TMT turnover. Additionally, our research provides some support for the moderating role of average TMT organizational tenure levels. This implies that the context within which TMT turnover occurs has implications for its effects, and that this and other moderators should be incorporated in future work.

Although we find negative consequences associated with TMT turnover, future work should continue to explicate conditions under which TMT departures can lead to organizational change and improvement. Indeed, research has identified situations where executive firm tenure does not add value (e.g., Henderson et al. 2006) and where a changing of the guard at the top appears beneficial (e.g., Keck 1997, Virany et al. 1992). At the same time, however, we believe there may be an overemphasis in the literature on the downside associated with TMT stability. We caution against conclusions that the costs (in the form of rigidity, commitment to the status quo, etc.) associated with executive team continuity will typically outweigh the benefits of TMT stability. Even under conditions of profound organizational change, such as when a firm is acquired, the retention of executives with significant firm-specific experience has been shown to be beneficial (e.g., Bergh 2001). Thus, although having a stable group of executives may not be the sine qua non for organizational effectiveness, the benefits of having such a group may generally outweigh the costs.

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Endnotes

1 Although relatively rare, we did not include any individuals having a title below vice president as members of the TMT.

2 As pointed out by a reviewer, our operationalization of TMT turnover events will occasionally include an individual who has left the TMT but still remains in the organization. The antecedents and consequences of this type of turnover may differ from the more typical event of an individual leaving both the TMT and the organization. Our inability to control for these differences is a limitation.

3 We thank an anonymous reviewer for these helpful suggestions regarding the limitations of the study.

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