Performance effects of top management team gender diversity during the merger and acquisition process

Heather R. Parola, Kimberly M. Ellis and Peggy Golden
Management Department Programs, Florida Atlantic University, Boca Raton, Florida, USA

Abstract

Purpose – The purpose of this paper is to uncover the performance effects of top management team (TMT) gender diversity in the merger and acquisition (M&A) process. To do so, an integration of the upper echelons perspective and the M&A process literature is offered to consider the "double-edge sword" of gender diversity on both pre- and post-integration performance. Additionally, the boundary effects of acquirer experience on the TMT gender diversity-performance relationship is examined.

Design/methodology/approach – The hypotheses are tested in a sample of 310 acquisitions by Fortune 1,000 companies. Multiple regression analysis is utilized to test the effects on the two different performance variables.

Findings – The findings reveal that TMT gender diversity is beneficial to pre-integration performance, but hinders post-integration performance. Additionally, the findings provide evidence that acquirer experience can overcome the negative effects of gender diversity in post-integration performance.

Originality/value – This study contributes to a better understanding of the double-edge sword of TMT gender diversity by providing evidence that performance implications depend on the performance variable of interest. Specifically in the M&A context, gender diversity has differing effects on pre- and post-integration performance.

Keywords Diversity, Top management, Mergers and acquisitions

Paper type Research paper

As organizations become more complex, the role of the firm's top management team (TMT) is receiving heightened attention (Carpenter *et al.*, 2004; Menz, 2012). In particular, the effects of TMT diversity on a range of organizational decisions and outcomes have generated much interest (e.g. Dezsö and Ross, 2012; Kauer *et al.*, 2007; Yang and Wang, 2014). Beginning with Hambrick and Mason's (1984) seminal piece, the upper echelon perspective provides a useful framework to understand the implications of TMT diversity on strategic decision-making processes and ultimately performance outcomes. Overall, diversity among the TMT, reflected in characteristics such as age, tenure, functional background, and educational experience that capture values, cognitions, and perceptions of top managers, is expected to increase decision quality yielding positive performance implications (Hambrick and Mason, 1984).

Although not specifically identified in the original upper echelon framework, there is growing consensus that gender is another characteristic of top managers influencing their values, cognitions, perceptions, and thus decision processes (e.g. Dezsö and Ross, 2012; Dixon-Fowler *et al.*, 2013; Klenke, 2003; Yang and Wang, 2014). While the occurrence of female executives holding TMT positions is a relatively recent phenomenon given well-documented glass-ceiling effects (Dezsö and Ross, 2012; Krishnan and Park, 2005), there is growing interest in uncovering their influence on

strategic decisions and organizational performance. However, results of prior research are equivocal regarding the gender diversity-performance relationship. For example, gender diversity of the TMT and board of directors has been found to result in positive performance effects (e.g. Dezsö and Ross, 2012; Krishnan and Park, 2005; Welbourne *et al.*, 2007), no performance effects (e.g. Mohan and Chen, 2004), and negative performance effects (Adams and Ferreira, 2009; Dixon-Fowler *et al.*, 2013).

Both positive and negative outcomes can be hypothesized to arise when considering the implications of diversity, measured in terms of gender and other attributes of TMTs. The benefits of diversity can be gained through increased information resources (Kauer *et al.*, 2007), greater ability to scan the environment (Keck, 1997), enhanced evaluation of strategic decisions (Hambrick and Mason, 1984), and diminished groupthink (Bantel and Jackson, 1989). Such benefits in turn improve the quality of decisions made by the TMT as it leverages the resources and experience of its members. Conversely, negative effects of diversity may surface through decreased communications (Smith *et al.*, 1994), reduced consensus (Knight *et al.*, 1999), increased interpersonal conflicts (Pelled *et al.*, 1999), and slower decision making (Hambrick *et al.*, 1996). Such consequences can have detrimental effects on the process by which decisions are made and implemented (Triana *et al.*, 2014). Collectively these effects, both positive and negative, occur at different stages of the decision-making process as the diversity type can vary over time (Harrison and Klein, 2007). This observation along with mixed theoretical reasoning and findings of existing studies suggest the need to consider the time period and context in which performance is evaluated as well as potential moderators of the TMT diversity-performance relationship (Carpenter *et al.*, 2004; Dezsö and Ross, 2012).

A context in which gender diversity appears to be particularly relevant is in times of major strategic change (Dixon-Fowler *et al.*, 2013; Triana *et al.*, 2014). Mergers and acquisitions (M&As) represent a common growth strategy that requires a myriad of decisions and substantial changes in at least one, and frequently both firms (Haspeslagh and Jemison, 1991). The decision-making process related to M&As begins prior to the official deal announcement date with tasks such as selecting a target and negotiating deal terms and extends up to three years beyond deal completion as the two firms' operations are integrated into a single entity (Buono and Bowditch, 1989). Also, since M&As are complex, uncertain, and often considered rare strategic events (Zollo, 2009), they provide an excellent context to analyze performance effects of TMT gender diversity. Gender diversity among the TMT members is posited to have varied effects as the M&A decision-making process evolves, given that the stages of a deal require different leadership capabilities and knowledge resources. Yet, despite the recognition that TMT characteristics in general (Bergh, 2001; Haleblian *et al.*, 2009) and gender of TMT members in particular (Huang and Kisgen, 2013) influence M&A decisions and outcomes at various stages, few studies examine this critical issue.

Our study makes three primary contributions. First, we add to the growing research on TMT gender diversity by considering a strategic change context that is both complex and uncertain – M&As. Taking a process approach to M&As (Jemison and Sitkin, 1986), we consider the M&A process as a series of decisions that have a cascading influence throughout the stages of the deal (i.e. selection, negotiation, and integration) thus requiring substantial TMT involvement (Bergh, 2001; Gomes *et al.*, 2013; Nadolska and Barkema, 2014; Vasilaki and O'Regan, 2008). Second, we hypothesize and provide evidence that the deal stages require varied leadership capabilities, knowledge resources, and TMT member interactions, creating differential

effects of gender diversity. As the tasks and nature of TMT involvement change over the course of the M&A process, gender diversity among TMT members is found to bring about positive effects during the selection stage, but negative effects in the integration process. Building upon the upper echelon perspective (Hambrick and Mason, 1984), we integrate the double-edged sword viewpoint to show that TMT gender diversity is beneficial during early stages of the deal because it increases selection resources and capabilities, but becomes detrimental as the integration stage unfolds due to deteriorated communication and indecisive action. Third, we identify a critical boundary condition of the gender diversity – M&A performance relationship. In particular, we combine arguments from both the M&A process and upper echelon perspectives to examine the moderating effects of acquirer experience.

Theoretical background and hypotheses development
Upper echelon perspective and gender diversity
Several studies building on the upper echelon perspective demonstrate that TMT demographic characteristics influence firm-level decisions and outcomes such as entrepreneurial strategic orientation (e.g. Yang and Wang, 2014), speed in strategic responses (Hambrick *et al.*, 1996), and acquisition success (Bergh, 2001; Nadolska and Barkema, 2014). An important argument presented is that increased diversity of the TMT will result in better strategic decisions and ultimately greater outcomes. Heterogeneous TMTs are considered to possess a larger resource base, including knowledge resources and cognitive resources, which increase problem-defining skills and problem-solving skills (Hambrick *et al.*, 1996). Heterogeneous teams also possess greater information processing capabilities than homogeneous teams, creating a team environment where group think is minimized (Bantel and Jackson, 1989) and higher quality decisions are made (Hambrick and Mason, 1984).

Although diversity is often found to promote information processing, creativity, and innovative ideas, diversity also can have adverse effects on the decision-making process and related outcomes. More specifically, high levels of diversity can decrease behavioral integration of the team such as communication (Smith *et al.*, 1994), strategic consensus (Knight *et al.*, 1999), and decision speed (Hambrick *et al.*, 1996), which hinders the implementation of strategies (Ancona and Caldwell, 1992) thereby lowering team performance (Hambrick *et al.*, 1996; Smith *et al.*, 1994). Collectively, arguments based on the upper echelon perspective suggest a "double edge sword" of diversity.

Gender diversity in particular demonstrates these contrasting effects as well. The characteristics of female leaders provide insight as to how the decision-making process may differ in their presence. Female strategic leaders are found to be more innovative (Tullett, 1995), proactive (Bass and Avolio, 1994), and transformational (Eagly *et al.*, 2003) while also more cautious and risk adverse (Huang and Kisgen, 2013; Thiruvadi and Huang, 2011) than males in equal positions. This leads to potential differences in the opinions, values, goals, and attitudes between male and female executives. Thus, consistent with the upper echelon perspective, TMTs that include females will experience decision-making and group processes influenced by these qualities.

Additionally, gender diversity gives rise to interpersonal conflict (Pelled *et al.*, 1999). Gender, like age and race, is an impermeable attribute and difficult to change. Differences in impermeable attributes generally lead to stronger in-group/out-group biases promoting feelings of resentment, anger, and frustration and ultimately interpersonal conflict (Pelled *et al.*, 1999). Thus, the TMT gender diversity affects TMT

decision processes in both positive and negative ways. These differential effects are present throughout the M&A process.

The M&A process

The complexity and uncertainty that describes M&As also highlights the increasing role of TMT members' involvement in their success (Buono and Bowditch, 1989; Haspeslagh and Jemison, 1991; Nadolska and Barkema, 2014; Vasilaki and O'Regan, 2008). The M&A process entails a series of firm-level decisions that must be formulated and then implemented in various stages of a deal (Gomes *et al.*, 2013; Jemison and Sitkin, 1986). These stages include the selection stage where target firms are identified, the negotiation stage where information is shared and deal terms are determined, and the integration stage where the two firms transfer resources and capabilities and are combined into a functioning whole (Pablo *et al.*, 1996). Decisions made within each stage not only contribute to performance implications, but also influence future decisions that must be made (Gomes *et al.*, 2013) as the implementation unfolds.

Additionally, the conditions by which and capabilities needed by strategic managers to make decisions in each stage of the M&A process can be different. For example, the selection stage calls for greater environmental scanning to identify potential targets while the integration stage calls for decisive action and execution of deal terms to position the combined firm to create value. Given that selection capabilities and integration capabilities are considered important sources of M&A value creation (Saxton and Dollinger, 2004), we consider the impact of gender diversity in both the selection stage and integration stage.

Gender diversity and selection capabilities

TMT members are charged with the responsibility of identifying potential targets and eventually choosing one (Huang and Kisgen, 2013; Nadolska and Barkema, 2014). Decisions made in the selection stage are influenced by the TMTs' ability to scan various environments, their network resources of the TMT members, and their risk propensities. Particularly in uncertain environments, the available scanning capabilities and information pool shared between diverse TMT members extends the reach of search efforts to include private firms, geographically distant firms, and seemingly unrelated firms (Capron and Shen, 2007). Diverse TMTs in general are able to scan their environments better than homogenous TMTs (Keck, 1997), but gender diversity is particularly positioned to benefit the potential for identifying targets in various environments. Complex environments require a greater degree of managerial interaction (Dess and Beard, 1984) and scanning multiple environments for potential target firms poses increased information processing demands. Given that gender diversity increases information processing (Van Knippenberg *et al.*, 2004), as the team members individually filter environmental cues and interpret these cues differently (Hambrick and Mason, 1984), the ability of the TMT to scan multiple complex environments increases.

Target firms are also often selected through interfirm networks. In particular, past interactions through firm network ties, prior alliance experience, and interpersonal network ties (Schildt and Laamanen, 2006; Zaheer *et al.*, 2010) increase the potential of an acquisition. Also, TMT members play a role by increasing the exposure to various target firms through their past experiences and personal network connections. Diversity in general among TMT members suggests a greater network pool in which to

reach and assess potential targets (Geletkanycz and Hambrick, 1997), and gender diversity offers an additional unique female network in which to access. Due to various constraints (e.g. the glass ceiling effect), female networks vary from male networks in both composition and relationship characteristics (Ibarra, 1993). Female networking characteristics include engaging in not only in the largest segment of mixed gender networks (Hawarden and Marsland, 2011), but also gaining resources through utilizing female-specific networks (Friedman, 1996; Ibarra, 1992), and their personal networks (Cromie and Birley, 1992; Ibarra, 1992). Thus, gender diversity of the TMT provides the firm with increasingly diverse network connections in which to identify target firms.

Target firms are also assessed for their risk potential in selection decisions (Pablo *et al.*, 1996). Among the factors evaluated are strategic fit, organizational fit, prior performance, and level of resource requirements (Gomes *et al.*, 2013; Jemison and Sitkin, 1986). Given that individuals vary in their level of risk propensity (Sitkin and Pablo, 1992), the valuation of the target firm's risk potential by diverse TMTs will include countering opinions on the level of risk that is acceptable. Moreover, gender diverse teams may find these countering opinions to be particularly present, as female executives are found to be more risk adverse and cautious than their male counterparts (Huang and Kisgen, 2013; Thiruvadi and Huang, 2011). These countering opinions promote the positive effects of diversity, by fostering increased task conflict as well as providing increased decision quality, decision understanding, and decision commitment (Olson *et al.*, 2007).

Short-term market reactions capture investors' responses to the deal announcement based on their expectations of future cash flows resulting from combining the two firms (Cording *et al.*, 2010). Moreover, short-term market performance is a reflection of the information currently available to investors about aspects of the pre-integration stage, including characteristics of the acquirer, target, and TMT. Investors often respond favorably to less risky deals (e.g. Oler *et al.*, 2008) in the short term, and have been found to respond positively to gender diverse TMTs engaging in strategic events such as IPOs (e.g. Welbourne *et al.*, 2007) suggesting positive short-term market reactions in M&As involving gender diverse TMTs.

Overall, the above evidence suggests that gender diverse TMTs have an extended reach in identifying potential firms for target selection and tend to select less risky targets. Given that target selection is a primary driver of performance expectations (e.g. Capron and Shen, 2007; Zaheer *et al.*, 2010), and that gender diverse TMTs possess qualities that should lead to the selection of better targets, we expect that gender diversity of the TMT will increase short-term performance expectations formed prior to integration efforts. Therefore:

> *H1.* Gender diversity on the TMT is positively related to pre-integration market performance of the acquisition.

Gender diversity and integration capabilities
Anticipated future earnings reflected in market performance measures at deal announcement are not always realized, as integrating the firms such that expected synergies are achieved is wrought with issues. The M&A integration stage calls for a very different skill set of the TMT which includes purposeful action, decisiveness, communication, effective change management, and strategic consensus (Gomes *et al.*, 2013). Decisions of integration depth, integration speed, and market focus (Cording *et al.*, 2008) must all be made in congruence with taking action in order to manage

employee perceptions of stress, anxiety, and uncertainty (Buono and Bowditch, 1989; Haspeslagh and Jemison, 1991). Issues resulting from this "human element" of M&A integration have been found to decrease integration success, hinder synergy realization, and destroy value in a deal (e.g. Buono and Bowditch, 1989; Haspeslagh and Jemison, 1991).

Integration represents a time where purposeful action and decisiveness is needed from the TMT members. Such behaviors suggest integration efforts are being guided by a greater sense of direction and more defined plans. Clear decisions, shared understanding of goals, and apt action can reduce employee uncertainty and anxiety, lessen negative consumer perceptions, and overcome competitive concerns (Ranft and Lord, 2002; Vasilaki and O'Regan, 2008). It is in this complex environment where TMT members need to make and implement multiple, interrelated decisions, often within a narrow timeframe. Gender diversity among the members though, may hinder required purposeful and decisive action. First, it takes a diverse team longer to process all the information in a task or decision (Hambrick *et al.*, 1996). The very benefit of increased information processing capabilities that enhances decision quality also detracts from making time-sensitive decisions. Second, prompt decisions often require power centralization (Staw *et al.*, 1981), and because women often share their power, gender diverse teams are more likely to have power decentralization, thus increasing decision time. Third, conflict and debate cause interruptions in the decision process (Mintzberg *et al.*, 1976), thus increasing the likelihood that gender diverse teams will make slower decisions thereby delaying integration efforts.

Integration also represents a time where strategic consensus is needed among the TMT members in order to implement decisions. Strategic consensus provides positive performance implications and promotes effective implementation of strategies (Knight *et al.*, 1999). In order to manage the surviving employees' perceptions in ways that minimize dysfunctional behaviors, the TMT is charged with presenting a unified vision (Haspeslagh and Jemison, 1991) which enables strategic consensus to spread throughout the entire organization (Rapert *et al.*, 2002). This increases understanding of and commitment to M&A goals (Floyd and Wooldridge, 1992), and reduces employees' anxiety and stress (Buono and Bowditch, 1989). Diversity though, decreases informal communications between members (Smith *et al.*, 1994), eroding consensus (Rapert *et al.*, 2002; Roberto, 2004). Moreover, gender diversity increases interpersonal conflict (Pelled *et al.*, 1999), further limiting strategic consensus within the TMT (Knight *et al.*, 1999) and contributing to integration issues.

Through integration, the value creation of the deal, or lack of, is reflected in post-integration performance (Cording *et al.*, 2010). During integration, more information becomes available to the public regarding whether anticipated outcomes are being achieved and initial expectations of the earnings potential of the deal are revised. Often, the initial market expectations are decreased as integration challenges are revealed and value creation targets are not met (Oler *et al.*, 2008). We expect this same relationship as gender diverse TMTs make slower decisions and reach limited strategic consensus, both of which likely create integration issues that hamper value creation. Thus, we hypothesize that though investors initially anticipate positive performance implications in deals with gender diverse TMTs, this outlook diminishes and becomes negative as integration issues are revealed. Therefore:

H2. Gender diversity on the TMT is negatively related to post-integration market performance of the acquisition.

Acquirer experience
Although negative post-integration performance is expected with gender diverse
TMTs, acquirer experience may mitigate these negative effects. Prior acquisition
experience leads to the establishment of organizational routines and guidelines that
should help current and future TMT members better manage the integration process
related to subsequent deals (Winter and Szulanski, 2001; Zollo and Singh, 2004). Such
experience accumulation plays a key role in developing firm-level integration
capabilities as the knowledge and experience gained from previous M&As becomes
embedded in the organization's members, tools, tasks, and networks (Argote and
Miron-Spektor, 2011). These lessons and related know-how are not gained instantly
though. Through the first few deals, a firm may not have gained sufficient experience
to determine when or how to apply the previous decisions made successfully. Instead,
existing M&A studies provide evidence it is only through increased experience that
acquirers gain the sufficient knowledge base to determine which lessons are
appropriate to apply in future deals (Haleblian and Finkelstein, 1999).

As acquirers develop organizational routines and capabilities over time, the negative
effects of gender diversity during integration may be mitigated. Lessons from the
acquiring firm's prior acquisitions are captured and codified in postmortem reports,
manuals, and decision-support or project-management software (Zollo, 2009), all of which
provide TMT members with additional tools when making decisions pertaining to new
deals. These formal organizational resources provide guidelines and direction which can
improve the speed and quality of decisions when diverse TMT members are faced with
changing tasks and varying situations during the integration process, ultimately
increasing performance (Papadakis, 2005). Also, formalized plans enhance strategic
consensus, as guidelines may further provide the team with hard information and
promote understanding (Roberto, 2004). Thus, prior acquisition experience facilitates the
development of firm-level integration capabilities that serve to offset the potentially
damaging effects of gender diverse TMTs by enabling the formation of a unified vision,
increasing the speed of decisions, and facilitating greater strategic consensus all of which
diminish challenges that hinder post-integration performance. Therefore:

H3. The negative relationship between gender diversity on the TMT and post
integration market performance is positively moderated by acquirer experience.

Method
Sample
We utilized the Securities Data Corporation (SDC) Platinum Database to identify deals
by Fortune 1,000 companies between January 1, 2004 and December 31, 2009. Selection
criteria used in generating our sample included: the transaction value is above
$100 million, both the target firm and acquiring firm are headquartered in the USA,
both the acquiring firm and target firm are publicly traded, and the acquiring firm
purchased 100 percent of the target firm. Establishing these criteria was necessary for
several reasons. First, M&A scholars have noted that aspects of the decision-making
process vary by acquisition size and type (Haspeslagh and Jemison, 1991; Jemison and
Sitkin, 1986). As such, it becomes important to restrict the sample to a specific deal
type. Second, TMT involvement in the M&A decision-making process and the effects of
diversity are expected to be most pronounced in larger acquisitions (Nadolska and
Barkema, 2014) and in those where the acquiring firm gains full control of the target
firm (Ellis *et al.*, 2011). Third, because differences in culture, leadership styles, and TMT

involvement in decision-making processes across national boundaries may influence the hypothesized relationships (Cording *et al.*, 2008; Nadolska and Barkema, 2014), the sample was limited to domestic deals in the USA. Finally, it was necessary to restrict the sample to publicly traded firms because our models required data on measures such as stock market performance, R&D expenses, and assets as well as TMT demographics. Additionally, in order to avoid biases from individual firms, if the acquirer was involved in multiple deals during the sample period, only the most recent deal was included (Ellis *et al.*, 2011; Reus and Lamont, 2009). The final sample consists of 310 unique acquirers and focal deals.

Measures

Dependent variables. We measured two dependent variables: pre-integration market performance and post-integration market performance. Consistent with other M&A studies (Haleblian *et al.*, 2009), we used event-study methodology to estimate cumulative abnormal returns (CARs) around deal announcement. CARs, a measure of pre-integration market performance, were calculated using the market model and the CRSP equally weighted index. We assessed a three-day event window (−1, +1) with the announcement date as day 0 and an estimation period of 255 days, ending 46 days prior to the announcement date. Also, we checked for confounding events such as major executive/TMT changes, restructuring/divestment initiatives, earnings releases, new product introductions and dividend announcements (McWilliams and Siegel, 1997) during this window for each observation in our sample. Searches of company press releases and popular press articles via Lexis-Nexis indicated the absence of any confounding events. The equation used for estimation was:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt}$$

where R_{jt} equals the rate of return on the common stock of the jth firm on day t, R_{mt} represents the rate of return of the market index on day t, and ε_{jt} represents the random error. Additionally, the abnormal return for each firm is calculated as:

$$AR_{jt} = R_{jt} - (\alpha_j + \beta_j R_{mt})$$

where t corresponds with the event window. CARs are then calculated for each firm by summing the abnormal returns of each day in the three-day window.

In line with previous M&A studies, post-integration market performance was measured using Jensen's α three years after deal announcement to allow sufficient time for integration efforts to be completed (e.g. Buono and Bowditch, 1989; Cording *et al.*, 2008; Farjoun, 1998). Used to assess longer-term performance in the equity market, Jensen's α measures the average difference between competing investments (Jensen, 1968). We calculated Jensen's α using a 37-month event window (−1, +36), the CRSP equally weighted index as the benchmark portfolio, and the formula:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt}$$

where R_{jt} equals the rate of return on the common stock of the jth firm in month t, R_{mt} represents the rate of return of the market index for month t, and ε_{jt} represents the random error. Jensen's α is α_j, while β_j is firm j's stock price variance relative to the market benchmark.

Independent variable and moderator. Our primary independent variable, gender diversity, was measured as the percentage of female executives on the acquiring firm's

TMT. Given TMTs are defined in several ways (Carpenter *et al.*, 2004), we utilized S&P's Execucomp database along with proxy statements filed by the individual firms to determine the size and number of females on the TMT at the time of the focal deal (Dezsö and Ross, 2012). The maximum percentage of female executives on a TMT is 40 percent, while the mean is 6.29 percent, both of which are consistent with prior research on gender diversity in Fortune 1,000 companies (e.g. Krishnan and Park, 2005).

Our moderating variable is acquirer experience. Similar to previous M&A studies (e.g. Haleblian and Finkelstein, 1999; Hayward, 2002) we considered as most relevant experience with prior acquisitions that were similar to those in the focal sample. Thus, we included in our count all previous domestic deals made by the acquiring firm that were at least $100 million as listed in SDC. To mitigate kurtosis and better capture the declining marginal returns associated with experiential learning, we used a log-transformed value in subsequent analyses (Ellis *et al.*, 2011).

Control variables. We included multiple control variables shown to influence M&A performance in our analysis. To capture deal characteristics, we controlled for transaction value and relative size measured as the ratio of the acquiring firm's assets one year prior to the deal to those of the target firm for the same time period along with relatedness using an ordinal scale where matches among the firms' four, three, two, or one digit primary SIC codes were coded as 4, 3, 2, and 1, respectively (Ellis *et al.*, 2011). Further, deals where a match existed among any of both firms' top six four-digit SIC codes were coded 1 and where no codes matched 0. Also, we captured acquiring firm characteristics by measuring R&D intensity as the ratio of R&D expenditures to total assets (Dezsö and Ross, 2012) and target firm characteristics by denoting whether the target operated in a high-tech industry coded 1 when the primary SIC code was 2833-2836, 3571-3579, 3612-3652, 3661-3699, 3721, 3724, 3728, 3761, 3764, 3769, 3821-3899, 737X, 8711, or 873X) or 0 otherwise (Zaheer *et al.*, 2010).

Also we controlled for effects at the industry, year, and TMT levels. Specifically, we captured industry effects as industry-level ROA one year prior to the focal deal calculated at the two-digit SIC code level excluding the focal firm (Ellis *et al.*, 2011). Also, because economic conditions varied during our sample period, we created a year dummy variable coded as1 for deals occurring in 2008-2009 and 0 for deals in 2004-2007. Moreover, because age diversity has been found to affect M&A decisions and firm performance (Olson *et al.*, 2006), we controlled for it using the coefficient of variation among the TMT members' ages (Knight *et al.*, 1999). Lastly, we controlled for change in gender diversity in Models 3-5 coded as 1 when there was a change in gender diversity during the three-year, post-deal period and 0 otherwise.

To correct for high kurtosis, we used a log transformation for three control variables (i.e. transaction value, relative size, and R&D intensity). Data for transaction value, SIC codes, and year were gathered from SDC; assets, R&D expenditures, and net income from Compustat or 10-Ks; and both diversity measures from Execucomp or proxy statements.

Results
Descriptive statistics and correlation coefficients are reported in Table I. All moderation variables were computed using mean-centered terms to reduce multicollinearity concerns (Aiken and West, 1991). Variance inflation factors (VIF) were well under the threshold of 10, suggesting multicollinearity is not an issue in our models.

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. CAR	−0.014	0.060												
2. Jensen's α	0.005	0.016	0.051											
3. Transaction value	2.772	0.780	−0.169***	0.093*****										
4. Relative size	1.056	0.776	0.175**	−0.089	−0.454***									
5. Relatedness	2.658	1.414	−0.073	0.044	−0.045	−0.231***								
6. Industry ROA	0.038	0.035	0.133***	0.143**	0.113*	−0.123*	0.060							
7. R&D intensity	0.013	0.025	−0.012	−0.084	−0.087	0.055	0.071	0.221***						
8. TMT age diversity	0.107	0.050	−0.008	−0.014	−0.088	−0.113*	0.005	−0.048	−0.014					
9. Target high tech	0.380	0.486	−0.056	−0.116*	−0.047	0.092*****	−0.074	−0.163**	0.504***	0.004				
10. Year (pre 2008)	0.303	0.460	−0.128*	0.004	−0.056	0.076	0.036	−0.114*	0.241**	0.032	0.148**			
11. Change in diversity	0.213	0.410	0.061	0.044	−0.006	0.089	−0.008	0.015	0.109*	−0.028	0.047	−0.017		
12. Experience	0.610	0.440	−0.009	−0.118*	0.377**	0.253**	−0.173**	0.040	0.046	−0.100****	0.129**	0.057	0.031	
13. TMT gender diversity	0.064	0.099	0.112*	−0.082	0.073	0.107*****	−0.098*****	0.029	−0.075	−0.101****	−0.018	−0.068	0.316**	0.111*

Notes: *****$p < 0.10$; ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$

Table I.
Descriptive statistics
and correlations

We utilized multiple linear regression analysis to test our research hypotheses. Table II reports results using one-tail testing for hypothesized effects and two-tail testing for all controls. Models 1-2 shown in Table II pertain to pre-integration market performance (CARs), while Models 3-5 pertain to post-integration market performance (Jensen's α).

Model 1, our baseline model for pre-integration performance includes only control variables and Model 2 adds TMT gender diversity. The positive and significant coefficient ($b = 0.093$; $p < 0.05$) indicates TMT gender diversity increases pre-integration performance as measured by market reaction around deal announcement thereby supporting *H1*.

Model 3 is the baseline model for post-integration market performance. In Model 4 the coefficient for TMT gender diversity is negative and significant ($b = -0.126$; $p < 0.01$) indicating its detrimental effects on post-integration thus supporting *H2*. Moreover, the interaction effect of acquirer experience and gender diversity in Model 5 is both positive and significant ($b = 0.151$; $p < 0.001$) suggesting that acquirer experience balances and helps overcome the negative effects of gender diversity on post-integration performance consistent with *H3*.

We also performed several robustness checks. First, we ran models measuring acquirer experience as the total count of all M&As made by the acquiring firms prior to the focal deal. Second, we ran models measuring gender diversity based on diversity type (variety or separation) as suggested by Harrison and Klein (2007). Specifically, in models testing gender effects represented as variety in the selection stage, we measured gender diversity as a dichotomous variable ($1 =$ female was present on the TMT and 0 otherwise). Moreover, to test the effects of diversity as separation during the integration stage, we measured gender diversity using the standard deviation. Results, available upon request from the authors, were robust to these changes and consistent with those reported in Table II, although the overall explanatory power of the models and level of statistical significance of hypothesized effects varied slightly.

Discussion and conclusion
The primary thrust of this study is to uncover the role of gender diversity of the TMT within the M&A process context. The double-edged sword of gender diversity is shown as the positive benefits of having female TMT members surface in the selection process, while the negative aspects take hold in the integration stage. Also, we extend the work of Harrison and Klein (2007) to show the interdependent effects of diversity types as the M&A process evolves. In particular, we provide evidence of TMT gender diversity as variety in the selection stage of the M&A process which in turn begets gender diversity as separation in the integration stage. Because the tasks and goals of the TMT change throughout the various stages of the M&A process (Haspeslagh and Jemison, 1991), the benefits of diversity as variety in the selection stage disappear and diversity as separation stimulates conflict in the integration state. These types of diversity highlight the differential effects of gender diversity of the TMT that occur through time. Furthermore, acquirer experience can mitigate longer-term negative effects of diversity as separation experienced following the integration process, by providing diverse TMT members with organizational routines and know-how which enable them to make quicker decisions and gain consensus. Our findings offer support of the upper echelon perspective and provide evidence of the importance of TMT diversity in the M&A process, an area that has received limited attention in the literature (Nadolska and Barkema, 2014).

	Model 1 Pre-integration performance	Model 2 Pre-integration performance	
Control variables			
Transaction value	−0.138*	−0.149*	
	(0.005)	(0.005)	
Relative size	0.137*	0.123****	
	(0.005)	(0.005)	
Relatedness	−0.062	−0.057	
	(0.002)	(0.002)	
Industry ROA	0.170**	0.166**	
	(0.100)	(0.100)	
R&D intensity	0.012	−0.019	
	(0.156)	(0.156)	
Age diversity	0.008	0.014	
	(0.066)	(0.066)	
Target high tech	−0.096	−0.097	
	(0.008)	(0.008)	
Year (pre 2008)	−0.114*	−0.110****	
	(0.007)	(0.007)	
Hypothesized variables			
Gender diversity (*H1*)	–	0.093*	
		(0.034)	
F-statistic	3.914***	3.804***	
R^2	0.094	0.102	
Change in R^2		0.008*	
	Model 3 Post-integration performance	Model 4 Post-integration performance	Model 5 Post-integration performance
Control variables			
Transaction value	0.048	0.061	0.180**
	(0.001)	(0.001)	(0.002)
Relative size	−0.037	−0.022	0.078
	(0.001)	(0.001)	(0.002)
Relatedness	0.024	0.017	0.017
	(0.001)	(0.001)	(0.001)
Industry ROA	0.174**	0.180**	0.187**
	(0.027)	(0.027)	(0.026)
R&D intensity	−0.087	−0.102	−0.097
	(0.042)	(0.042)	(0.041)
Age diversity	−0.007	−0.015	−0.011
	(0.018)	(0.018)	(0.017)
Target high tech	−0.105	−0.104	−0.099
	(0.002)	(0.002)	(0.002)
Year (pre 2008)	0.066	0.062	0.055
	(0.002)	(0.002)	(0.002)
Change in diversity	0.060	0.100****	0.104****
	(0.002)	(0.002)	(0.002)

Table II.
Results of multiple
regression analysis

(*continued*)

Hypothesized variables			
Gender diversity (*H2*)	–	−0.126**	−0.145***
		(0.009)	(0.005)
Experience	–	–	−0.267**
			(0.002)
Gender diversity	–	–	0.151***
× experience (*H3*)			(0.010)
F-statistic	1.987*	2.247*	2.949***
R^2	0.056	0.070	0.106
Change in R^2		0.014**	0.037**

Notes: $n = 310$. Standardized βs shown, SE in parentheses. ****$p < 0.10$; ***$p < 0.001$; **$p < 0.01$, *$p < 0.05$

Table II.

Our findings highlight the importance of considering context, time, and moderating factors to enhance our understanding of the complex diversity-performance relationship (Carpenter *et al.*, 2004). First, type of diversity and the context under consideration are incredibly important to specify. Gender, age, and race are less task-related forms of diversity and lead to interpersonal conflict rather than the beneficial task-conflict. Such effects of gender diversity of interpersonal conflict appear to have significant implications during the integration stage of a M&A when significant change and transformation is occurring. Second, it is important to consider timing issues and how the effects of diversity evolve during the course of the M&A process. In our study, we find that gender diversity is beneficial in the selection stage where an increased resource pool and more through information processing is likely to result in a more insightful, effective identification of potential targets (Dezsö and Ross, 2012). Thus, short-term, market-based performance increases when females are represented on the TMT (Huang and Kisgen, 2013). Conversely, in the integration stage, the diverse opinions and attitudes resulting from gender diversity likely slows down integration and hinders decision making (Triana *et al.*, 2014), both of which fuel uncertainty and anxiety among surviving employees, and ultimately lead to negative longer-term performance outcomes.

This study is of practical importance given the increasing number of females serving on TMTs (Huang and Kisgen, 2013; Klenke, 2003). In particular, our findings shed light on the role TMT gender diversity plays in the M&A context which represents a major corporate decision and subsequent transformation. We find that having female representation on the TMT created both benefits and costs for firms engaging in M&As. Firms should consider how to leverage the resources, networks, and information processing advantages associated with gender diverse TMTs while minimizing interpersonal conflicts and reduced cohesiveness that can may surface as the M&A process unfolds. If left unattended, differences in attitudes and beliefs commonly linked to gender diversity may hamper performance. But, proactive acquirers with organizational routines and guidelines in place are likely able to establish boundary conditions in which gender diverse TMTs operate thus curtailing interactions that would otherwise stall decision making or erode collaboration and trust as tasks change and corporate transformation occurs during the integration process.

Our findings also point to several interesting and exciting areas of future research. First, there is ample opportunity to examine various contingencies of the gender diversity-long-term performance link. We identified one, acquirer experience, but potential exists that other contingencies such as autonomy provided to target

managers or procedural justice perceptions would mitigate the negative long-term effects of gender diversity. Second, future research could build on our study by considering how power differentials among gender diverse members of the TMT (Klenke, 2003) may have intervening effects on M&A outcomes at various stages of the process. Third, future research should consider the role of target TMT members' diversity in the M&A process. Target TMT members provide an incredible resource to the acquiring firm (Bergh, 2001) and their role in the integration stage is important as they are able to increase value creation (Graebner, 2004). Examining the target TMT's composition or specific roles they fulfill (Menz, 2012) may provide additional insights to the gender diversity and performance relationship in this specific context. Fourth, diversity could be broadened beyond gender to include racial, ethnic, and functional diversity as well and perhaps examine their interaction effects. Finally, future research could extend our findings by measuring more precisely the group processes about which we theorize. Few studies are able to tap into the group processes of TMT members (see Smith *et al.*, 1994 and Olson *et al.*, 2007 for exceptions), and the M&A context increases the difficulties of capturing real-time data. This line of work may benefit from a qualitative or case-based examination.

Because the effects of TMT gender diversity are complex, particularly in a multi-stage corporate action such as a M&A where its influence evolves over time, there are clearly many opportunities to contribute to the upper echelon and M&A literatures. We hope others will join us in this worthy pursuit.

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About the authors

Heather R. Parola is currently a Doctoral Candidate in the Department of Management Programs at Florida Atlantic University, Boca Raton, FL. Her research interests include mergers and acquisitions, interorganizational trust, strategic leadership, and top management team diversity and dynamics. Her research has been presented at the Academy of Management, the Strategic Management Society, and the Southern Management Association annual meetings. She is currently an Instructor of Business Strategy at the undergraduate level. Heather R. Parola is the corresponding author and can be contacted at: hparola@fau.edu

Dr Kimberly M. Ellis is an Associate Professor at the Florida Atlantic University. Her primary research, grounded mainly in learning, justice, and RBV theories, tests models that incorporate varying contextual factors as well as process dimensions and their effects on post-acquisition outcomes. A second area of research interest draws primarily on the stakeholder perspective, RBV, and institutional theory to explore linkages between a firm's social performance and its financial performance. She earned her PhD Degree in Strategic Management from Florida State University and has published in referred journals including *Academy of Management Journal*, *Strategic Management Journal*, and *Journal of Business Ethics*.

Dr Peggy Golden is currently a Professor of Management and the Chair of Management Programs at the Florida Atlantic University teaching graduate and doctoral courses in Strategy and the Environment of Business. She has also taught courses on global competition in Spain, Brazil, and to computer industry executives in Asia. Prior to her arrival at FAU, Dr Golden taught at the University of Louisville for five years in a variety of areas including the management of information systems. She is the Author of seven simulation games and more than 50 articles and conference papers. She is currently studying corporate reputation, the interaction of corporate governance on top management team pay disparity, and the role of power in the success of mergers and acquisitions.