Female Board Representation and Corporate Acquisition Intensity

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ABSTRACT

This study examines the impact of female board representation on firm-level strategic behavior within the domain of mergers and acquisitions (M&A). We build on social identity theory to predict that greater female representation on a firm's board will be negatively associated with both the number of acquisitions the firm engages in and, conditional on doing a deal, acquisition size. Using a comprehensive, multi-year sample of U.S. public firms, we find strong support for our hypotheses. We demonstrate the robustness of our findings through the use of a difference-in-differences analysis on a sub-sample of firms that experienced exogenous changes in board gender composition as a result of director deaths.

Female representation on public corporate boards around the world has traditionally been low. For example, only 17% of current U.S. Fortune 500 directors are women (Catalyst, 2014). Recently, though, legislators and firms have come under increasing pressure to redress this imbalance. Since 2008, all Norwegian public firms have been required to have at least 40% of directorships filled by women (Ahern and Dittmar, 2012). And, in 2012, the European Commission debated legislation that would have required all EU public firms to achieve a minimum of 40% female board representation by 2020 (Ibarra, 2012), or face heavy fines. Thus, understanding the impact of board gender characteristics is a vitally important practical matter.

Public policy discussion of this issue has mostly focused on the eventual firm performance implications, with supporters and opponents having contrasting views on whether mandatory quotas would be beneficial for firms (e.g., Ibarra, 2012; Merchant, 2011). Academic research on the topic is mixed, with studies showing both positive (e.g., Carter, Simkins, and Simpson, 2003) and negative (e.g., Adams and Ferreira, 2009) overall impacts of female board representation.

However, although many of the contributors to this discussion have offered arguments based on fundamental human capital differences (i.e., women in general will be more, less, or equally capable as men in fulfilling director roles), few studies have carefully examined a more proximal issue – how might a change in female board representation differentially affect a firm's strategic behavior? We address this issue in our paper. Building on social identity theory, we

theorize that higher levels of female board representation will affect intra-board social psychological dynamics such that deliberations become more thorough and comprehensive, resulting in more exhaustive evaluations and active oversight of proposed strategic actions. We examine these ideas within the context of the acquisition intensity of S&P 1500 firms.

Our study provides several important contributions to strategic management. First, we contribute to strategic leadership (Finkelstein, Hambrick, and Cannella, 2009) by providing a theoretically-grounded explanation, based on social psychological processes, of why boards with greater female representation will be associated with different firm-level strategic actions. Methodologically, we also account for the impact of several alternative forms of intra-board diversity, increasing the likelihood that our results are being uniquely driven by board gender characteristics. Second, we contribute to mergers and acquisition research (Haleblian *et al*., 2009) by providing insights into the influence of board characteristics (i.e., gender) on acquisition behavior. Finally, our study offers a novel, econometrically-rigorous response to a fundamental challenge that bedevils most attempts to assess the firm-level impact of board characteristics. Specifically, it is often unclear to what extent board composition is itself endogenous to the strategic behavior and performance outcomes of a firm (Ahern and Dittmar, 2012). We address this challenge, and thereby demonstrate the robustness and validity of our original results, via a difference-in-differences analysis of a sub-sample of firms experiencing exogenous board changes as a result of director deaths.

THEORY AND HYPOTHESES

Women on corporate boards and board decision-making processes

Since the 1970s, a broad array of research has explored the issue of gender differences in leadership and governance roles (e.g., Daily, Certo, and Dalton, 1999; Kanter, 1977; Nielsen and Huse, 2010). Because the number of female CEOs in U.S. public firms continues to be extremely

low (Lee and James, 2007), many authors have focused on female representation on corporate boards, which is both more common and more heterogeneous across firms (Daily *et al*., 1999). A large amount of work in this area has examined the causes – such as status, social roles, homosocial reproduction, and interpersonal networks – of the underrepresentation of women on boards compared with their representation in management roles or the workforce generally (e.g., Hillman, Shropshire, and Cannella, 2007; Ibarra, 1993; Smith, 2002). In addition, a growing body of work has begun to explore the different implications of female vs. male leadership, and how gender-diverse boards might differ from all-male boards (e.g., Hillman, Cannella, and Harris, 2002; Sealy, Singh, and Vinnicombe, 2007; Singh, Terjesen, and Vinnicombe, 2008).

One area of ongoing debate in the literature is whether female and male directors differ systematically in terms of underlying personality characteristics, preferences, and cognitions. For instance, in the general population, meta-analytic reviews (Byrnes, Miller, and Schafer, 1999) and cumulative evidence from economic experiments (Croson and Gneezy, 2009) suggest that men are significantly more likely than women to engage in risk-taking behavior. However, extrapolating this finding – or findings related to other possible gender differences in personality (Barber and Odean, 2001) – to a senior leadership population is problematic for several reasons. First, researchers have argued that the effect of gender on risk taking remains heavily contingent on the nature of the task being examined and the context within which risk taking is evaluated (e.g., Holt and Laury, 2002; Schubert *et al*., 1999). Second, and more importantly, although there is some evidence that male and female leaders may be associated with different behavioral patterns (e.g., Huang and Kisgen, 2013), the small number of survey-based studies in this area provide little support for the claim that female directors are significantly more risk-averse than male directors (Adams and Funk, 2012; Graham, Harvey, and Puri, 2013).

Because of this lack of clarity, we instead consider the theoretical impact of female board

representation from the perspective of how it might impact board decision-making processes. To do so, we draw on social identity theory (Tajfel and Turner, 1979), one of the most established and widely-studied perspectives in the realm of social psychology. Social identity theory is an umbrella term describing a series of socio-cognitive sub-theories that address how individuals' interactions and behavior are influenced by the different categories to which they belong (Hogg, 2006; Hogg and Terry, 2000). Social identity theory addresses both the processes whereby individuals are categorized into groups (by themselves and others), and how categorization and identity influences interactions among individuals from different groups. Crucially, social identity theory is underpinned by the notion that collective phenomena cannot adequately be explained by recourse to individual differences or personality traits alone (Turner, 1996).

Individuals can self-categorize, and be categorized by others, along any number of dimensions, but identification with a particular category is strongest when it is highly psychologically salient, i.e., it reflects aspects of an individual that are central, valued, and frequently employed (Ashforth and Mael, 1989; Yzerbyt and Demoulin, 2010). Highly salient categories – such as gender – are represented cognitively as prototypes, which maximize perceptions of intra-category similarities and inter-category differences (Hogg and Terry, 2000). Categories thus have a depersonalizing influence. A superordinate group where multiple categories are represented – such as a board of directors – can act as a 'crucible in which inter-subgroup differences are sharpened' (Hogg, 2006: 123).

Research suggests that such inter-subgroup differences are sharpened in two distinct ways (Yzerbyt and Demoulin, 2010). First, the process of categorization is associated with an "interindividual-intergroup discontinuity effect" (Wildschut and Insko, 2007), whereby intergroup responses are more hostile than interindividual responses. When members of one category (an ingroup) see others as being representatives of another salient category (an outgroup), they are

more likely to see their interactions with these others as being with the depersonalized category itself than with specific individuals. In turn, this can cause ingroup members to experience a subconscious fear response – because their heightened levels of distrust lead them to expect zero-sum competition from outgroup members – and a greed response – because they may think that outgroup members are vulnerable (Wildschut *et al*., 2003). Additionally, individuals are more likely to consciously frame intergroup contexts as being characterized by mixed motives, and therefore prone to competitive behavior. Thus, people tend to be more competitive and less cooperative in intergroup than in interindividual contexts.

Second, and relatedly, individuals respond differently to ingroup members than to outgroup members, via ingroup favoritism and outgroup derogation (Hewstone, Rubin, and Willis, 2002). Individuals tend to allocate more resources toward ingroup members, support the opinions of ingroup members, and feel uncomfortable around, or simply avoid, outgroup members (Yzerbyt and Demoulin, 2010). In response, outgroup members – especially when they represent marginalized or minority categories (such as women on corporate boards) – tend to perceive such biases as identity threats and be anxious to avoid confirming negative stereotypes (Branscombe, Schmitt, and Harvey, 1999), thus making them more active in demonstrating their distinctiveness and more competitive in interactions with the ingroup (Hogg, 2006).

We therefore argue that boards with one or more female directors will interact differently than comparable all-male boards. Because the presence of multiple salient categories within a board will be associated with more competitive interactions (Hogg, 2006), decision-making processes are likely to be more contentious, thorough, and comprehensive, and less likely to be characterized by acquiescence, rapid consensus, or groupthink (Hogg and Terry, 2000). In line with this premise, prior work has linked group heterogeneity with the use of more diverse information sources, the consideration of broader perspectives, and the willingness to challenge

taken-for-granted norms (e.g., Jackson, 1992; Wiersema and Bantel, 1992). Furthermore, female and male directors are likely to have had different experiences (Huse, 2008) and thus differing opinions on the most appropriate strategic options, enhancing the comprehensiveness of discussions. Finally, there is evidence that male directors engage in their duties more diligently and miss fewer meetings when there are also female directors on the same board (Adams and Ferreira, 2009), which is likely to amplify the comprehensiveness of discussions even further.

These processes should intensify as the proportion of female directors increases. However, the addition of even a single female director to an all-male board is likely to be impactful. Membership of an underrepresented category does not preclude one from influencing group decision-making processes (Westphal and Milton, 2000), and work on the topic of minority influence suggests that merely being exposed to a differing (minority) viewpoint impacts majority viewpoint-holders by making them more likely to engage in divergent thinking and expend cognitive effort (e.g., Peterson and Nemeth, 1996).

In summary, we argue that increased female board representation will influence the social psychological processes driving board decision making, thereby increasing decision-making thoroughness and comprehensiveness. In turn, when considering major strategic proposals suggested by management – especially in light of the relatively high levels of overconfidence displayed by senior executives generally (Graham *et al*., 2013) – boards will be more exhaustive in their evaluations, more active in exercising oversight, and more ready to block proposals that seem overly speculative or unconsidered. We examine the manifestations of this process within the domain of mergers and acquisitions.

Female board representation and corporate acquisition intensity

Mergers and acquisitions (M&A, or simply acquisitions) is a topic of great interest in managerial, media, and academic circles (Haleblian *et al*., 2009). Although acquisitions can offer many

benefits to firms, such as enhanced economies of scale and scope, actual returns vary substantially from deal to deal. In fact, research suggests that acquisitions are more likely to destroy than enhance the value of the acquiring firm (Chatterjee, 1992; Haleblian *et al*., 2009; King *et al*., 2004). Possible explanations for this finding are that acquisitions are undertaken without sufficient due diligence (Puranam, Powell, and Singh, 2006), that managers are irrationally overconfident concerning potential synergies (Hayward and Hambrick, 1997), and that acquiring managers benefit disproportionately from acquisitions in the short-term – via status and compensation – but that evaluating the success of an acquisition can be difficult until years afterward (Haleblian *et al*., 2009). Thus, M&A provides a context where directors know that a given action may be of great benefit to a firm, but the simultaneous knowledge that these types of actions in general are both highly uncertain and likely to be harmful in the long-term.

Acquisitiveness. A firm's acquisition intensity concerns the number of deals it engages in and the typical size of each deal (Hitt *et al*., 1996). Building on our arguments above, we argue that, compared to all-male boards, boards with one or more female directors will be associated with more thorough intra-board discussions and more active oversight in evaluating executives' recommendations. More comprehensive decision-making and oversight will increase the time taken to reach a decision, especially a supportive decision. During the decision process, boards will be cognizant of the complex nature of acquisitions (Haspeslagh and Jemison, 1991), the uncertainty of acquisition payoffs (Haunschild, 1994), and the knowledge that most acquisitions fail (Chatterjee, 1992), resulting in a greater likelihood of any given deal being shelved. These outcomes are increasingly likely as the level of female board representation increases. In contrast, boards with zero female directors will be much more likely to sign off on any given acquisition and will do so more rapidly. The board as a whole is likely to engage in less debate, intra-board opinions will be more homogeneous, discussions will be more streamlined, and executives'

recommendations will be scrutinized less rigorously. We therefore hypothesize:

H1: Greater female board representation will be associated with fewer acquisitions.

Acquisition size. Adopting a similar logic, we argue that, among those firms that do engage in acquisitions, female board representation will be associated with smaller deals (i.e., the target size will be a smaller percentage of the acquiring firm size). Larger deals have more material consequences for a firm's long-term health. In addition, evidence suggests that larger deals pose qualitatively different integration challenges (Ellis *et al*., 2011), and that smaller acquisitions may be more successful than larger ones (Moeller, Schlingemann, and Stulz, 2004). Finally, larger deals may be viewed as signs of executive self-dealing or hubris (Hayward and Hambrick, 1997). Therefore, more active boards are likely to be especially wary of large acquisitions, and a comprehensive evaluation process is more likely to unearth compelling reasons to block such proposals. In contrast, smaller deals are less likely to be quashed. Although all acquisitions have uncertain outcomes, smaller deals are less likely to raise questions concerning strategic synergies, integration challenges, or managerial motives. Thus, we hypothesize:

H2: Greater female board representation will be associated with smaller acquisitions.

METHODS

Sample and Data

To create our initial sample, we merged board and director information from the Investor Responsibility Research Center (IRRC) database – which covers U.S. S&P 1500 firms from 1998 to 2010 – with financial data from Compustat and CRSP, resulting in a total of 14,220 firm-year observations. We then used the Securities and Data Corporation (SDC) database to gather details on all firms' M&A deals over this sample frame – a total of 2,998 acquisitions undertaken by

1,542 firms.[1] Because of a small amount of missing data for some control variables, our final sample used to test H1 (number of acquisitions) comprised 13,248 observations, while our final sample used to test H2 (size of acquisitions) comprised 2,825 observations.

Measures

Female board representation was operationalized as the number of female directors in a given firm-year divided by total board size. In robustness tests, we dummy-coded this variable (with a value of one if there was at least one female director on the board), generating similar results. *Acquisitiveness* (H1) was operationalized as the number of acquisitions in a given firm-year; in our sample, this ranged from 0 to 9. *Acquisition size* (H2) was operationalized as the total value of all transactions in a given firm-year, scaled by the annual sales of the acquirer.

We included a comprehensive list of control variables. In tests of H1, we controlled for *firm size* (logged total assets), firm performance *(return on assets* and *Tobin's Q*), *free cash flow*, and *leverage ratio*. We also controlled for governance conditions, including *board independence* (outside director ratio), *board size* (number of directors), *director ownership* (a dummy variable indicating at least one director held more than five percent of shares), *busy board* (a dummy variable indicating that 50% or more of the board's outside directors held three or more directorships (Fich and Shivdasani, 2006)), and *CEO duality* (whether the CEO was also the board-chair). In addition, we controlled for *female CEO* (a dummy variable indicating that the CEO was female) and *CEO ownership* (the percentage of firm shares held by the CEO).

We controlled for *interlocking firms' activities*, measured as the number of acquisitions completed in Year t-1 by firms linked to the focal board via director interlocks. We also included a dummy firm-year control for *missing interlock* data. Also, because our arguments are based on the

[1] Following Masulis, Wang, and Xie (2007), we included those acquisitions: 1) that had been completed, 2) where the acquirer controlled less than 50% of the target's shares prior to the announcement and 100% of the target's shares after the transaction; and 3) where the deal value exceeded US$1m.

impact of differences in intra-board processes as a function of directors' identities, we also controlled for two other important forms of board diversity: *age diversity* and *ethnicity diversity* (operationalized using the Blau Index, which is calculated as $1-\sum_{i=1}^{S} P_i^2$, where *s* is the number of categories and *p* is the proportion of directors on a board that belongs to category *i*).[2]

Finally, we accounted for a board's approach to acquisitions by controlling for the *average age of the board*, the proportion of female directors that concurrently occupied executive positions in other S&P firms (*proportion of female executives*), and the *number of acquisitions in the previous year*. We also included *year fixed effects* and *industry fixed effects* in all models.

In our tests of H2, we added several binary controls capturing deal characteristics: *tender offer* (the bid involved a tender offer to target shareholders), *target termination fee* (the takeover agreement included a target termination fee), *poison pill* (a poison pill had affected the bidder's acquisition attempt), *competing bidder* (there were one or more competing bidders), *private target,* and *public target.*[3] We also controlled for the mean *acquisition size in the previous year*.

Analysis

To test H1, we used Poisson regression models because the dependent variable was a count (our results were robust to the use of negative binomial models). For H2, we used linear regression models because the dependent variable was continuous. Because female directors are not appointed to boards randomly (Hillman *et al*., 2007), we used a Heckman two-stage model to correct for potential estimation biases. In the first stage, using the entire IRRC database, we ran a probit regression model with robust standard errors to predict a binary indicator of whether there was at least one female director in a given firm-year. We followed prior research (Hillman *et al*.,

[2] Age group was measured in terms of birth cohorts, and specifically the ten-year periods from 1910, 1920, 1930, 1940, 1950, and 1960. Ethnicity was coded in terms of five categories: Asian, Black/African-American (incl. Other), Caucasian, Hispanic/Latino, and Native American.

[3] An acquisition target can be a public firm, private firm, or a subsidiary of an existing firm.

2007) to include the following lagged variables as the predictors: *firm size*, *firm age*, *firm performance* (ROA), *leverage ratio*, *stock return volatility* (the standard deviation of daily stock returns over the previous year), *board size* (number of directors) and *female director in the interlocking firms* (a dummy variable indicating whether the board's interlocking firms had any female directors). Our exogenous instrument was *female labor force participation rate*, calculated at the U.S. county level (data sourced from the U.S. Census Bureau), and based on the location of a firm's headquarters. This measure represents the participation of women generally in the firm's local labor market. It therefore should be related to our independent variable (female board representation) because firms are more likely to hire local directors (Knyazeva, Knyazeva, and Masulis, 2013), but is theoretically unrelated to acquisition intensity. Results from this model (which we used to construct an *Inverse Mills ratio*) were largely as expected, with female labor force participation rate and all predictors except firm performance and leverage being significant.

RESULTS

Table 1 reports descriptive statistics and bivariate correlations for all variables. In our sample, mean female director representation was close to 10%, and there was at least one female director associated with 63% of board-years. Model 2 in Table 2 reports our test of Hypothesis 1. Female board representation was negatively significantly related to acquisitiveness ($\beta = -0.897$, $p < 0.01$), supporting H1. Model 4 in Table 2 reports our test of Hypothesis 2. Again as predicted, female board representation was negatively associated with acquisition size ($\beta = -0.223$, $p < 0.05$), supporting H2. We also note that one of our control variables, ethnicity diversity, was consistently a significant predictor of our two dependent variables across each of the four models in Table 2 (while age diversity was a significant predictor of acquisitiveness in Model 2). This is consistent with our core theoretical premise that female board representation influences M&A activity via its impact on intra-board processes. Finally, our results provide evidence of economic significance. A

change in female board representation from low (1 s.d. below the mean) to high (1 s.d. above the mean) levels was associated with an 18% decrease in acquisitiveness, a 12% decrease in acquisition size, and a reduction of US$97.2m in M&A spending in a given year.

------ Tables 1 and 2 about here ------

Supplementary Analysis: Difference-in-Differences

A firm's decision to hire a particular director may be endogenous to the firm's strategic behavior and performance. We addressed this issue in part through the use of two-stage analytical models. To further address this possibility, we conducted a difference-in-differences analysis (Donald and Lang, 2007) on a sub-sample of firms, using director deaths as a natural experiment. We assumed that the death of a director would exogenously change the composition of the board. Specifically, we expected that the death of a male director would *relatively* increase the influence of female directors on the same board. Thus, in the post-death period, these 'treatment' firms (death is considered a treatment event) should engage in fewer, smaller acquisitions compared to the pre-death period. In other words, we expected to see patterns consistent with our earlier results.

To compile the sub-sample of firms experiencing director deaths, we manually searched Factiva, Edgar 8-K filings, and Google using keywords related to 'director' and 'death' over the period 1998 to 2010. This search produced an initial sample of 321 possible death events for all firms in the IRRC database. However, our highly restrictive inclusion criteria – (1) the firm had to already be in our sample, along with full firm-level and board-level data, (2) there had to be at least one female director on the board at the time of death; and (3) the firm had to have engaged in at least one acquisition event within a four-year window both before and after the death of the director – reduced our sample to only 24 director deaths, all of which were males.

To test our assumption that female director influence increased after the death of a male director (and to ensure that firms did not simply replace a deceased male director with another

male director), we calculated the difference in female board representation between the pre-death and post-death periods for the treatment firms. Pre-death, the mean proportion of female directors was 10.5 percent, while that percentage rose to 12.3 percent post-death ($p < 0.05$).

Next, we created a matched sample of 24 firms (i.e., a control group) to account for the possibility that changes in firm behavior from pre-death to post-death periods may have simply been a temporal trend. For each treatment firm in the event year (the year that the director died), we selected a matching firm that had: (1) similar size (80-120% of total assets), (2) similar performance (ROA), and (3) had engaged in at least one acquisition within a four-year window both pre- and post-event year. T-tests confirmed no significant differences between the treatment group and the control group in terms of firm size ($p = 0.221$) and ROS ($p = 0.993$).

The first difference, *post-death*, captured the change in acquisition behavior from before to after the death event year. The second difference, *death group*, captured the variation between treatment group and control group. Thus, the interaction between *post-death* and *death group* captured the difference of these two differences. This coefficient represents a rigorous test of whether an increase in female director influence due to the death of a male director impacted a firm's acquisition intensity. Our firm-level analysis used a sample of 96 observations, as we treated all pre-death observations as one period and all post-death observations as another period. Results showed that increased female director influence had a negative and significant impact on acquisitiveness ($\beta = -0.790$, $p < 0.01$). Our deal-level analysis used a sample of 295 observations (in this analysis, we also controlled for several important deal characteristics: target termination fee, poison pill, and public target. Results showed that increased female director influence had a negative and marginally significant impact on acquisition size ($\beta = -0.789$, $p < 0.1$). Thus, we found additional support for both H1 and H2 (full analyses available upon request).

DISCUSSION

The issue of female representation on public company boards has become an increasingly contentious topic in the business and general media (Ibarra, 2012; Merchant, 2011). As evidenced by the recent moves of some jurisdictions to implement mandatory board gender quotas (Ahern and Dittmar, 2012), this issue is not simply one of mere scholarly curiosity, but also has substantial practical implications for firms. Most of the contributors to this discussion have focused on eventual firm performance implications, but have not really examined the more proximal issue of firm-level strategic behavior. In this study, we built on social identity theory to argue that greater female board representation will be associated with more comprehensive board-level decision making, which will, in turn, be associated with more exhaustive evaluation of major strategic proposals. In an analysis of acquisition intensity in a 13-year sample of U.S. public firms, we found robust evidence that greater female board representation was negatively associated with both overall firm acquisitiveness and target acquisition size.

Our results have several important implications for strategy research. First, our results suggest a partial explanation for the unclear impact of board gender composition on firm performance. Board-level comprehensiveness in decision-making and oversight is undoubtedly vital in many situations, especially when managers' proposals are underdeveloped or self-serving. However, the social psychological processes ensuing from the existence of multi-category boards may also result in outcomes such as reduced group cohesiveness and increased coordination costs, which may be harmful in certain contexts (cf. Michel and Hambrick, 1992). This reinforces prior work (e.g., Dalton *et al*., 1998) showing that the impact of board composition on firm performance is necessarily a contingent one.

Second, an interesting extension of our results relates to the situation where the percentage of female directors continues to increase over time. Although the typical Fortune 500 board

currently has only 1-2 women sitting on it, if our theory is correct, and the impact of female board representation is largely a result of its impact on intra-board social psychological processes, a continued rise in the proportion of female directors substantially beyond 50% of board seats may in fact result in an incremental reduction in decision comprehensiveness and activeness of board oversight. Although such boards continue to be rare in the current U.S. business environment, we think this offers an interesting possibility for future consideration.

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Table 1: Descriptive statistics and correlations

Variable	Mean	Std	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1: Acquisitiveness	0.20	0.58	---	-.02	.00	.11	.00	.04	-.07	-.02	-.06	.04	.07	.07	.06	-.06	.15	.29	.20	.17	.13	.08	-.04	-.06	-.11	-.01	-.04	.08	-.04	.01	-.01	.01	.08
2: Female board represent.	0.10	0.09	.00	---	.27	.23	-.02	.12	.07	.22	-.08	.15	-.15	.16	-.05	.05	.35	.06	.34	-.01	.10	-.01	.07	-.38	-.08	.01	.07	.02	.03	-.06	.06	-.04	.03
3: Board independence	0.70	0.16	.03	.25	---	.08	-.18	.12	.08	.04	-.19	.13	-.23	.11	-.15	.22	.07	.03	.19	-.09	.06	-.04	-.03	-.24	-.05	-.02	.04	.12	.01	-.02	.02	-.03	.02
4: Board size	9.27	2.41	.01	.29	.09	---	-.08	.13	.11	-.03	-.12	.08	.05	.06	.06	.21	.10	.09	.63	-.18	-.11	-.33	.18	-.73	-.05	.02	.18	.04	.04	-.26	.26	-.02	.03
5: Director ownership	0.13	0.33	-.03	-.06	-.20	.03	---	-.01	-.13	.13	.03	-.05	.02	.04	.07	-.06	.06	-.02	-.09	.05	.01	.05	.02	.07	.03	-.03	-.07	-.12	-.01	.06	-.06	.02	-.03
6: Busy board	0.08	0.28	.04	.10	.12	.17	-.06	---	.08	.01	-.04	.10	.05	.04	-.16	.14	.04	.00	.26	.08	.07	.04	.08	-.16	-.03	.07	.08	-.05	.06	-.08	.09	-.01	.02
7: CEO duality	0.61	0.49	-.02	.07	.08	.05	-.13	.10	---	-.02	.05	-.01	.08	-.06	-.10	.07	-.01	-.05	.15	-.08	-.07	-.09	.14	-.11	-.01	.00	.08	.00	.02	-.10	.09	.00	-.02
8: Female CEO	0.02	0.14	-.01	.20	.02	-.02	.02	.01	-.03	---	.00	.05	-.02	.04	.02	-.09	.10	-.01	.02	.06	.04	.02	-.05	-.01	.00	.01	.01	-.03	.01	-.01	.01	-.01	.02
9: CEO ownership	2.20	6.15	-.04	-.09	-.24	-.15	.07	-.07	.14	.00	---	-.09	.06	-.06	.07	-.05	-.05	-.05	-.15	.05	.00	.07	-.05	.16	.02	-.05	-.05	-.14	-.03	.06	-.06	.01	-.03
10: Interlock: acquisitiveness	0.43	0.81	.07	.16	.18	.19	-.04	.11	.02	.01	-.10	---	-.36	.13	-.04	.01	.06	.11	.24	.10	.10	.06	-.04	-.19	-.06	.09	.06	.00	.04	-.05	.05	.00	.13
11: Interlock: missing	0.34	0.48	-.06	-.16	-.32	-.07	.03	.01	.06	-.02	.10	-.39	---	-.18	.03	-.10	.01	-.17	-.11	.06	-.11	-.04	.09	.17	.05	.04	.03	.01	-.02	-.10	.10	-.01	-.13
12: Ethnic diversity	0.72	0.18	-.06	-.12	-.10	-.14	.00	-.05	.01	-.02	.07	-.15	.16	---	.00	-.02	.10	.13	.17	.00	.05	-.02	.01	-.18	-.08	.00	-.04	.06	.01	.04	-.04	-.01	.08
13: Age diversity	0.58	0.11	-.02	-.03	-.17	.09	.09	-.11	-.10	.02	.05	-.05	.04	.02	---	-.05	.03	.08	-.02	.02	.01	.04	-.01	-.04	.01	-.04	-.01	-.08	.00	.03	-.03	.00	-.01
14: Average age of board	60.03	4.02	-.02	.00	.18	.16	-.02	.06	.00	-.02	-.01	.07	-.20	-.03	-.03	---	-.15	.00	.21	-.22	-.01	-.11	.10	-.34	.02	.00	.08	.05	.01	-.08	.08	-.02	.01
15: Proportion of female exec	0.02	0.05	.02	.38	.10	.13	-.04	.07	.07	.11	-.06	.05	.03	-.06	.01	-.13	---	.14	.13	.09	.05	.03	.02	-.13	-.05	.00	-.02	.10	-.02	-.01	.00	-.02	.00
16: Number of deals last year	0.18	0.56	.32	.03	.04	.03	-.02	.04	-.02	-.01	-.05	.09	-.10	-.06	-.01	-.02	.03	---	.21	.02	.08	.02	-.02	-.14	-.06	.00	-.02	.03	.01	.01	-.01	.01	.04
17: Firm size	7.59	1.54	.12	.29	.17	.58	-.10	.28	.16	-.03	-.16	.28	-.17	-.16	-.05	.16	.12	.12	---	-.09	-.09	-.28	.22	-.67	-.07	.07	.24	-.06	.06	-.30	.31	.02	.03
18: Tobin's Q	1.81	1.05	.08	-.03	-.07	-.12	.01	.01	-.03	.00	.05	.04	.02	.02	.00	-.11	.01	.04	-.13	---	.38	.52	-.29	.19	.06	.05	.00	-.04	.00	.03	-.03	.03	-.01
19: Free cash flow	0.04	0.08	.06	.09	.05	.03	.02	.03	-.02	.02	.00	.07	-.10	-.04	-.02	.03	.03	.04	-.01	.34	---	.52	-.27	-.01	-.10	.08	-.01	-.02	.01	.03	-.03	-.06	.03
20: ROA	0.04	0.13	.02	.04	.02	.04	.00	.00	.01	.00	.03	.02	-.05	.00	-.02	.07	.03	-.02	.05	.27	.50	---	-.25	.21	-.02	.08	-.06	-.04	.01	.10	-.10	-.01	.01
21: Leverage ratio	0.23	0.17	-.03	.08	.03	.22	-.01	.06	.09	-.03	-.11	.01	.06	-.03	.00	.00	.04	-.02	.31	-.33	-.21	-.15	---	-.19	.03	-.02	.02	.04	.03	-.03	.03	.02	-.01
22: Inverse Mills ratio	0.57	0.57	-.05	-.37	-.26	-.80	.01	-.19	-.06	.01	.18	-.29	.32	.22	-.03	-.28	-.14	-.07	-.65	.14	-.12	-.14	-.21	----	.09	-.05	-.18	-.08	-.05	.21	-.20	.03	-.07
23: Deal size	0.24	0.65	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	.01	.24	.00	.08	-.22	.22	.07	-.02
24: Tender offer	0.07	0.26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	.28	.00	.23	-.41	.42	.05	.00
25: Target termination fee	0.25	0.43	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-.02	.12	-.75	.76	.07	-.01
26: Poison pill	0.51	0.50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	.01	.00	.00	.02	.03
27: Competing bidder	0.02	0.13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-.18	.18	.09	.00
28: Private target	0.69	0.46	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-.79	-.05	.02
29: Public target	0.30	0.46	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	.05	-.02
30: Deal size last year	0.12	1.70	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	.00
31: Interlock: deal size	0.09	0.43	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:

(1) N = 13,248 for Variables 1-22 (firm-year-level characteristics for tests of H1);
(2) N = 2,825 for Variables 23-31 (deal-level characteristics for tests of H2);
(3) Below-diagonal correlations are based on a sample size of 13,248 (H1); |correlations| ≥ 0.03 are significant at the .01 level;
(4) Above-diagonal correlations are based on a sample size of 2,825 (H2); |correlations| ≥ 0.05 are significant at the .01 level;

Table 2: Impact of female board representation on acquisitiveness (H1) and acquisition size (H2)

VARIABLES	(H1) Acquisitiveness Model (1)	(H1) Acquisitiveness Model (2)	(H2) Acquisition size Model (3)	(H2) Acquisition size Model (4)
Constant	-4.793***	-4.679***	-0.138	-0.118
	(0.611)	(0.393)	(0.314)	(0.315)
Board independence	-0.021	0.043	-0.090	-0.075
	(0.147)	(0.138)	(0.102)	(0.099)
Board size	-0.065***	-0.064***	-0.003	-0.003
	(0.015)	(0.015)	(0.005)	(0.005)
Director ownership	-0.105	-0.107	0.063	0.062
	(0.068)	(0.132)	(0.072)	(0.071)
Busy board	-0.066	-0.064	-0.001	-0.000
	(0.066)	(0.076)	(0.035)	(0.035)
CEO duality	-0.025	-0.021	-0.016	-0.015
	(0.043)	(0.039)	(0.028)	(0.028)
Female CEO	-0.265	-0.178	0.021	0.047**
	(0.162)	(0.215)	(0.024)	(0.020)
CEO ownership	-0.014***	-0.014**	0.001	0.001
	(0.005)	(0.005)	(0.004)	(0.004)
Interlocking firms' activities	0.001	0.004	0.008	0.008
	(0.023)	(0.027)	(0.013)	(0.013)
Missing interlock	0.090	0.097	0.011	0.010
	(0.073)	(0.059)	(0.040)	(0.040)
Ethnicity diversity	-0.208*	-0.205***	-0.096*	-0.094*
	(0.115)	(0.048)	(0.050)	(0.048)
Age diversity	-0.241	-0.267*	0.096	0.089
	(0.174)	(0.162)	(0.113)	(0.111)
Average age of board	-0.021***	-0.023***	0.007	0.006
	(0.006)	(0.005)	(0.004)	(0.004)
Proportion of female executive	-1.100**	-0.628	-0.170	-0.057
	(0.444)	(0.695)	(0.190)	(0.171)
Number of deals last year (for H1)/	0.215***	0.213***	0.031*	0.030*
Deal size last year (for H2)	(0.011)	(0.029)	(0.017)	(0.018)
Firm size	0.231***	0.237***	-0.052***	-0.050***
	(0.018)	(0.041)	(0.014)	(0.015)
Tobin's Q	0.038*	0.038	0.067**	0.067**
	(0.020)	(0.030)	(0.028)	(0.027)
Free cash flow	0.969***	1.015**	-1.063**	-1.046**
	(0.343)	(0.507)	(0.484)	(0.482)
ROA	-0.045	-0.062	-0.029	-0.029
	(0.173)	(0.308)	(0.023)	(0.023)
Leverage ratio	0.223	0.225	0.176**	0.177**
	(0.136)	(0.164)	(0.081)	(0.080)
Inverse Mills ratio	-0.243***	-0.276**	0.092**	0.085**
	(0.077)	(0.114)	(0.041)	(0.041)
Tender offer			-0.240***	-0.241***
			(0.060)	(0.061)
Target termination fee			0.230***	0.231***
			(0.071)	(0.071)
Poison pill			0.031	0.031
			(0.028)	(0.027)
Competing bidder			0.298*	0.300**
			(0.152)	(0.152)
Private target			-0.051	-0.050
			(0.066)	(0.062)
Public target			0.212***	0.212***
			(0.061)	(0.058)
Female board representation		-0.897***		-0.223**
		(0.313)		(0.104)
Observations	13,248	13,248	2,825	2,825
R-squared	0.13	0.14	0.14	0.15
Industry fixed effect	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes

Note: *p < .1, **p < .05, ***p<.01; Robust standard errors in parentheses; Industry and year fixed effects included in all models