**INDUSTRY EXPERIENCE OF BOARD, CEO, AND ACQUISITION PERFORMANCE**

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**Abstract**

Empirical research has typically highlighted the individual importance of boards’ and CEOs’ target industry experience in diversifying acquisitions. This study examines the collective impact of expert boards and CEOs on acquisition performance, providing new insight into the CEO-board relationship. Our evidence supports the vigilant-advisor, resource provisioning, and “shared experience” theories that take three distinct views of the CEO-board relationship. Acquirers with expert boards earn an additional 1.7 (7.4) percentage points when the CEOs are new to the target industry (also experts) compared to those generated by “non-experienced” boards (expert boards alone). Our findings are robust against a variety of concerns. Generalist CEOs and public targets exacerbate the effect of shared experience, whereas less powerful CEOs and private targets heighten the resource provisioning effect.

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1. **Introduction**

A corporate board of directors is arguably at the epicenter of corporate governance. Investors and advocates of shareholder rights have called for corporate board reform and regulators have responded by making various recommendations, some of which have eventually become laws. Agency theory (Fama and Jensen, 1983; Hambrick and Jackson, 2000; Boone *et al.*, 2007) focuses on the “decision control” role of boards and argues that changes in board structure, composition, and incentive can help achieve independence from management, which in turn influences firms’ performance outcomes. Resource provisioning theory (Kor and Misangyi, 2008; McDonald *et al.*, 2008; Hillman *et al.*, 2009) emphasizes board members’ relevant expertise in influencing corporate strategy. Research has found that board of directors, particularly outside directors with pertinent experience, contribute substantively to firm performance through their roles as advisors and counselors to a chief executive officer (CEO).

One such strand of director attribute literature studies the impact of outside directors’ industry experience on the quality of firms’ strategic decisions, specifically acquisition outcomes. Kroll *et al.* (2008) study the interactions between boards’ vigilance and directors’ knowledge and conclude that target industry experience of outside board members makes them more effective both as monitors and advisors to the senior executives of the bidding firms. Wang *et al.* (2015) also examine whether independent board members with target industry experience are more effective in monitoring the CEO and find that such directors improve bidder performance in diversifying acquisitions. Contemporaneously, Custodio and Mertzger (2013) (CM hereafter) investigate the value of relevant industry experience from the perspective of industry-expert CEOs. They show that CEOs with previous work experience in the target industry achieve superior acquisition performance in diversifying deals. Given that diversifying acquisitions are complex strategic investments that typically require participation of both executive teams and boards of directors, the first question arises: Does target industry experience of outsiders add to acquisition performance, controlling for CEOs’ prior work experience in the target industry? The follow-up question is: How does outside directors’ target industry experience impact acquisition performance conjointly with CEOs’ industry expertise? This study extends the directors’ industry experience literature by analyzing acquisition outcomes of outside directors’ target industry expertise in conjunction with CEOs’ industry expertise.

Mergers and acquisitions (M&As) routinely represent the largest investment of firms. From 1988-2008, Malmendier and Tate (2008) report that firms in the United States have spent more than $3.4 trillion on over 12,000 transactions. Andrade *et al.* (2001) observe that even though M&As on average increase firm value, it is the target firm’s shareholders who capture most of the acquisition benefits. Although it is common for CEOs to lead the charge for strategic decisions, a number of board scholars (Hillman and Dalziel, 2003) show that directors’ involvement in strategic decision making typically goes well beyond ratification of initiatives proposed by managers. Furthermore, outside directors generally have greater influence on acquisition performance than overall firm performance (Hermalin and Weisbach, 2003), and their prior experience in the target industry makes outside directors better monitors as well as advisors to top executives (Kroll *et al.*, 2008; Wang *et al.*, 2015). Outside directors’ acquisition experience in related and unrelated industry experience also has a positive impact on focal firms’ related and unrelated acquisition performance, respectively (McDonald *et al.*, 2008). Therefore, expert outside directors not only effectively engage in “decision control” but also provide valuable “advice and counsel” in inevitably high-level strategic choices, such as diversifying acquisitions that are inevitably complex. Given that CEOs and outside board members both participate and play unique roles in the acquisition process, industry experience of boards should have additive effects on acquisition outcomes, controlling for CEOs’ expertise in the target industry.

Furthermore, since strategic decisions are often developed and executed through dynamic processes where top management teams and boards interact, consult, and debate with each other, the effectiveness of experienced boards in performing their advisory functions might be driven by the CEO-board relationship. The nature and complexity of this relationship have been studied extensively, and the literature offers three fundamental perspectives: agency problem (Jensen and Meckling, 1976; Dalton *et al.*, 2007; Boivie *et al.*, 2011), behavioral (Westphal and Stern, 2007; Westphal and Zajac, 2013), and resource provisioning (Kroll *et al.*, 2008; Hillman *et al.*, 2009). Together, these perspectives leave open the question of how directors who are target industry experts engage and influence CEOs with or without target industry expertise, particularly in the context of diversifying acquisitions. We address that in this study.

Analysis of 6,178 completed deals made during 1999-2011 show that 3-day cumulative abnormal announcement returns to the bidders in diversifying acquisitions, controlling for firm and deal characteristics, CEOs’ experience, and year-industry fixed effects, are 1.91 percentage points higher for companies with outside board members who have executive experience in the target industry.[[5]](#footnote-5) This effect is economically meaningful, representing a gain of approximately $192 million of market value. However, CEOs’ experience shows no additive relationship with acquisition performance.[[6]](#footnote-6) This is consistent with outside directors playing the role of vigilant-advisors (Kroll *et al.*, 2008; Wang *et al.*, 2015) and “dark side” of CEOs’ abilities outweighing the value of their experience.[[7]](#footnote-7) Upon investigation, the joint effect of CEO-board experience shows that acquirers’ 3-day announcement returns in diversifying acquisitions, controlling for firm and deal characteristics, CEOs’ experience, and year-industry fixed effects, are 1.16 percentage points higher for companies that have expert outside directors on their boards but their CEOs are new to the target industries. This finding is consistent with the resource provisioning by boards theory. However, if CEOs and boards are both experts, then bidders earn 3.91 percentage points higher returns compared to bidders with only expert board members. As will be discussed in more detail in the next section, this evidence shows that the “shared experience” of boards and CEOs in the target industry is paramount to acquisition performance.

Interpretations of these findings on the additive and joint effects of expert outsiders are complicated by the possibility that both the measure of board experience and announcement returns may be correlated with omitted variables, which would bias the results. The endogenous nature of firms’ appointment process may also impact board-firm matching. To check the sensitivity of our findings we first tackle the concerns of firm and deal heterogeneity. We include firm fixed effects to control for time-invariant unobserved firm heterogeneity; add quality of corporate governance that might be simultaneously associated with boards’ industry experience and announcement returns. We further re-estimate the baseline regressions for a subsample of acquirers for which information asymmetry is less of a concern so as to eliminate the possibility that merger announcements reveal new information about the stand-alone fundamental value of acquirers that might explain announcement returns. In addition to including deal level controls in all our analyses, we address concerns arising out of deal heterogeneity by using a broad Fama French 49-Industries (FF49) classification, which ensures that industries of bidders and targets are indeed unrelated in diversifying acquisitions. Our baseline results are robust to all of the above checks.

We next address the endogeneity concern that board experience could be picking non-linear effects of firm and deal characteristics if the linear control variables used in our baseline regression are inadequate in differentiating between bidders with experienced boards and those without. Such a potential endogenous selection on observable characteristics is corrected by using a propensity score weighted estimation method (Dehejia and Wahba, 2002).

We further explore specific situations or environments that might raise the importance of the advisory role of expert board members alone or in conjunction with expert CEOs. One such specific situation is based on information asymmetry; industry information may help boards estimate the target value more accurately, in particular where the equity market cannot price the target. For non-public targets, we find that experienced boards are able to generate 1.54 percentage points higher abnormal announcement returns where CEOs are not target industry experts compared to non-experienced boards; whereas in diversifying acquisitions involving public targets, the effect of experience is positive and significant only when CEOs’ and board members’ industry experience overlaps, suggesting that CEOs utilize information and feedback from the capital market effectively in selecting and valuing targets and are willing to heed target-industry-expert boards’ counsel if they are also experienced in the same industry. Other situations and environments might be tied to CEOs’ background characteristics and power that make them effective and willing integrators; collaborative ability may help CEOs make the best use of the resources of experienced boards, and power may magnify CEOs’ general disdain for board members. We find that generalist CEOs improve acquisition performance by 11.64 percentage points when the boards and they themselves have target industry experience, whereas specialist CEOs are unable to derive any benefit from experienced outsiders. We also find that CEOs who are also the chairmen of boards generate 17.91 percentage points higher returns when they share target industry experience with their outside board members, whereas experienced boards are able to generate 2.37 percentage points higher returns when CEOs are new to the target industry, but are not chairmen of the boards.

This paper contributes to the expanding literature on the importance of industry experience for CEOs and directors. Until recently, the majority of studies in this area have highlighted the individual importance of industry experience for either one of these two parties, rather than their collective impact. [[8]](#footnote-8) Ellis *et al.* (2018) document that CEOs’ skillsets interact with directors’ industry experience to mitigate their biases that lead to inefficient segment investment for conglomerates. In the context of diversifying mergers and acquisitions, our paper is the first to bring the interaction of CEO and board target industry experience into this conversation. We uncover significant valuation effects of outside directors’ expertise on merger performance that is exacerbated by CEOs’ target industry experience, indicating that CEOs’ industry experience plays a pivotal role in determining the effectiveness of experienced outside directors.[[9]](#footnote-9)

Our findings provide new insights into the CEO-board relationship, which is arguably at the core of this interaction effect of CEO and board experience. Kor and Misangyi (2008) find that outside directors with substantial managerial industry experience offset the lack of industry experience among top managers, especially for young entrepreneurial firms. Our results indicate that target industry experience of outside directors supplements the dearth of target industry expertise of CEOs and improves announcement returns for diversifying acquisitions, particularly those involving private targets. The upper echelon and strategic leadership research in recent years has underscored the CEO-TMT interface. Buyl *et al.* (2011) find CEOs who have high shared experience with other executives develop more interpersonal trust, leading to enhanced information exchange and integration, which help firms realize the benefits of functional diversity. We make a parallel argument regarding the benefits of “shared past industry experience” between CEOs and their board members, not CEOs’ shared experience with other TMT members that is proxied by team tenure overlap. Our findings show that the valuation effects of the CEOs’ and outside board members’ collective experience far exceed the valuation effects of experienced board members alone. In addition, given that the industry experience of either of the two parties individually does not seem to have any negative impact, it is more likely that the substantial positive interaction effect that we observe is by virtue of the healthy dialogue between two parties built on trust and experience, and less by reigning in each other’s negative biases.

The recent literature on the value of networks in the corporate finance policy literature shows mixed evidence favoring both the “dark side” (Ishii and Xuan, 2014; El-Khatib *et al.*, 2015) and “bright side” (Cai and Sevilir, 2012; Larcker *et al.*, 2013) of connections and networks of boards and CEOs. Our evidence, as it relates to the positive effect of board and CEO industry-specific experience provides further support to the bright-side argument.

Finally, this study contributes to the literature on the impact of CEO characteristics on firm performance. First, our study speaks to the debate over the value of generalist and specialist CEOs. There is considerable demand for generalist CEOs (Murphy and Zabojnik, 2004; Frydman and Saks, 2010), and they command higher compensation (Custodio *et al.*, 2013). The market perceives such CEOs as prized resources for managing complex organizations in the globalized economy (Eisfeldt and Papanikolaou, 2013), and these CEOs promote innovation (Custodio *et al.*, 2017). Most studies in this area indicate that general managerial skills have become increasingly valuable over time, with a few exceptions - for example Mishra (2014) shows that generalist CEOs exacerbate agency problems and take higher risks. Buyl *et al.* (2011) find that generalist CEOs are particularly effective in collaborative efforts with diverse teams, which substantially improve the quality of corporate decisions. Our study presents that general managerial skills enhance the effect of shared industry experience, indicating that generalist CEOs are also able to collaborate with and extract the value from experienced outsiders, even more so when they are also experts in the same industry. Second, our study also adds to the CEO duality literature that is fraught with ambiguity; on one hand, CEO duality has been associated with managerial entrenchment, and on the other hand it has been linked to managerial discretion that promotes cooperation among leadership and facilitates organizational effectiveness (Quigley and Hambrick, 2012; Krause and Semadini, 2013). Our results show that while expert outsiders have more influence on less powerful CEOs who are also new to the target industry, more powerful CEOs are able to realize significant benefits from outsiders’ experience when they have shared industry experience, suggesting that CEO duality is more complex than the “double-edged sword” analogy ascribed by Finkelstein and D’Aveni (1994) suggests.

Aside from the contributions to research, the results of this paper have certain managerial implications for firms that wish to pursue corporate strategies, which require unrelated acquisitions. Withers *et al.* (2012) note that firms select directors based on the candidates’ experience and expertise. Since the release of the final rule for proxy disclosure enhancement by the U.S. Securities Exchange Commission (SEC) in 2009, regulators have emphasized the importance of related industry expertise of boards. Our findings reinforce the appropriateness of such regulatory recommendations. Related industry knowledge remains among the top desirable qualities (Parrino, 1997; Zhang and Rajagopalan, 2003) for hiring CEOs as well, but our results suggest when firms are considering unrelated diversification for cost efficiency or diversifying business risk, it is important to note the interaction effect between target industry experienced boards and CEOs and to make adjustments in the composition of top management in order to promote a robust collaborative environment. In our sample, 3.23 percentage points of diversifying acquisitions are done by expert boards, 2.51 percentage points by expert CEOs, and 0.82 percentage points jointly by expert boards and CEOs.

1. **Hypotheses Development**

In this section, we develop the hypotheses to explain how directors who are target industry experts engage and influence CEOs with or without target industry expertise, particularly in the context of diversifying acquisitions. We argue that the effect of the interaction of outsiders’ experience with CEOs’ experience on acquisition performance will depend on the dynamic process through which these two parties contemporaneously participate in the acquisition strategy. One possibility is that outside directors supplement the collective industry experience of top management (Kor and Misangyi, 2008) or a lack of knowledge in the target industry increases CEOs’ reliance on expert outside board members’ counsel. This is consistent with the resource provisioning role of boards of directors and resource dependence of CEOs as an exchange perspective. We label this *“resource provisioning” hypothesis*.

The other possibility is that outsiders’ industry experience will be more effective when CEOs have past shared experience in the same industry. In a study of 130 large U.S., Asia-Pacific, and European organizations (Carter and Lorsch, 2004), during interviews the CEOs display lack of faith in the effectiveness of the board. Rosenstein *et al.* (1993) and Gabrielsson and Huse (2002) also show that CEOs’ trust in their boards is not unequivocal. We posit that shared industry experience boosts mutual understanding, trust, and information exchange, and strategic inputs from industry expert outside directors are more credible to CEOs when they can be validated by the CEOs themselves by virtue of their own past work experience in the same industry. We label this conjecture *“shared experience” hypothesis*.

Kor (2006) shows that managers’ team specific experience is associated positively with research and development (R&D) investment intensity. Buyl et al. (2011) argue that CEOs’ shared experience (tenure overlap) with top management team (TMT) members’ boosts mutual understanding, trust, and information exchange, which aid the firms in realizing the benefits of distributed TMT functional expertise. We advance this idea to shared industry experience of CEOs and their board members. Both knowledge and connections come with industry experience.[[10]](#footnote-10) Therefore, the notion of trust built on shared past experience could also be attributed to prior industry connections or social connections formed between CEOs and board members by virtue of working in the same industry. Bainbridge (2002) documents that a board acts as a body and not as individual members, and Cai *et al.* (2017) find that connected boards facilitate cooperation and coordination, which is particularly valuable in complex situations. This makes the shared industry experience complementary to the co-ordination hypothesis and the behavioral perspective, which holds the view that the CEO-board relationship is shaped by social context and past experience. Westphal (1999) presents that CEOs are more likely to seek advice from directors when they have social ties with them. Schmidt (2015) finds that social ties between board members and CEOs are beneficial to acquirers when the value of boards’ advice is high.[[11]](#footnote-11) To the extent industry experience of CEOs and board members represent their biases that might be detrimental to bidders, a positive interaction effect could also indicate that the two parties are effectively countering each other’s biases.

While the theory of resource provisioning presupposes that boards’ experience compensates for CEOs’ lack of expertise, the shared industry experience perspective focuses on the process through which expert outsiders’ influence is augmented when CEOs have similar industry expertise. The two perspectives are not inherently competing, and they work rather well together in explaining acquisition performance. Our findings suggest that resource dependence and shared experience theories work together to explain acquisition outcomes.

1. **Sample Construction and Summary Statistics**
   1. Data

Our initial sample consists of M&A deals completed from 1999-2011. The M&A data are obtained from the Thomson Financial Securities Data Corporations (SDC) Platinum database. We require that acquirers be U.S. public firms, targets be U.S. firms, deal values be available, and acquirers hold less than 50 percent of the targets prior to the announcement and more than 50 percent of the target after deal completion. We exclude the deal if either the acquirer or target is a utility firm (one-digit standard industrial classification (SIC) code of 4) or financial firm (one-digit SIC code of 6). We obtain accounting data from Standard and Poor’s Compustat, stock return data from CRSP, and board attributes from BoardEx. The final sample consists of 6,178 completed M&A deals made by public firms over the period 1999-2011.

* 1. Measuring director experience and CEO experience

We classify M&A deals as diversifying, using a dummy variable equal to 1 if acquirers and targets have different 4-digit SIC codes.[[12]](#footnote-12) To construct the industry experience variable of a board, we use the record of employment history of each outside director, obtained from BoardEx. For a director to be classified as an industry expert of the target firm in year t, the director must have served as a director in a firm with the same 4-digit SIC code as the target firm within 5 years prior to year t. The primary SIC codes of present and past employers of each director are obtained from Compustat.[[13]](#footnote-13) We use 4-digit SIC codes to measure industry experience to ensure that we consider only the most relevant industry experience. Employment history older than five years is excluded, because dated experience may not be relevant (Khorana *et al.*, 2007; Kroll *et al.*, 2008). Executive and non-executive directors are labeled as insider and outside directors in BoardEx, and we use these classifications to construct *OD\_ID\_EXP*, which is a binary variable that takes a value of 1 when at least one outside director of an acquiring firm has past experience serving as an inside or executive director in a firm that has the same 4-digit SIC code as the target firm in the acquisition.[[14]](#footnote-14) Related papers define industry experience of boards also as the total number of directors with relevant industry experience or as the percentage of directors with past experience in the target industry (e.g. Kroll *et al.*, 2008; Wang *et al.*, 2015). We choose to use the binary variable approach, because according to this method a board is flagged as an industry expert even if there is only one director with relevant experience, whereas the other variables focus on measuring the concentration of industry experts on a board, making the binary variable the most conservative indicator of experience.

We follow a similar approach in constructing the *CEO\_ID\_EXP* variable that indicates a CEO’s past experience in the target industry as an inside (executive) director.

Panel A of Table 1 presents the distribution of the full sample by year. The number of deals falls in the years 2001 and 2008, reflecting the aftermath of the dot-com bubble bust and the most recent financial crisis. Approximately 63 percent of all M&A deals are categorized as diversifying during this period, and the percentage remains consistent across all constituent years. Panel B reports the fraction of diversifying deals in which the acquirer’s outside directors and CEOs have industry experience – 126 mergers or 3.2 percent of all diversifying deals are made by acquiring firms that have at least one outside director who has served as an executive director in the industry of the target firm; 98 mergers or 2.51 percent of all diversifying deals are made by acquiring firms that have CEOs who have served as executive directors in the target firm industry; only 32 mergers or 0.82 percent of all diversifying deals are made by acquiring firms that have at least one outside director and CEO who have served as executive directors in the industry of the target firm. We are interested in determining whether these deals show superior acquisition performance.

[Insert Table 1 here]

* 1. Summary statistics: outcome and control variables

We use acquirer’s 3-day cumulative abnormal announcement returns, CAR, to measure the impact of the industry experience of boards and CEOs on shareholder value. The market model parameters are estimated over the period (-211, -10) with CRSP equally-weighted returns used as the market index. Firms that have less than 100 days of available security returns data for the estimation period are excluded.[[15]](#footnote-15)

We include deal and firm characteristics as control variables that are commonly used in the merger literature (e.g., Fuller *et al.*, 2002 and Moeller *et al.*, 2004). Deal controls include the size of a deal relative to the size of an acquirer (Relative Size), the method of payment (Most Stock), dummy variable indicating whether the target is paid for solely with cash (All Cash), and the public status of the target firm (Public Target or Private Target). Firm controls include the logarithm of the book value of assets (Firm Size), the market-to-book value of assets (MB), the operating cash flow scaled by the lagged book value of assets (OCF), and the debt scaled by total assets (Leverage).

We use several CEO characteristics as additional controls for analyzing heterogeneous CEO-board interactions in later tests. CEO duality has been a major issue in the management literature with no clear conclusions on its impact on firm performance. A CEO, who is also the chairman of a board, is more likely to ignore the board’s advice when they disagree with it (Krause *et al.*, 2014). CEOs’ age has a significant impact on their acquisitiveness and risk-taking (Yim, 2013; Serfling, 2014). CEO tenure is often considered as a proxy for CEO quality or entrenchment (Hermalin and Weisbach, 1998). Finally, Datta *et al.* (2001) document a strong positive relation between acquisition performance and acquiring managers’ equity-based compensation. Therefore, we add duality, CEO age, CEO tenure, Delta (pay-performance sensitivity), and Vega (pay-volatility sensitivity) as controls.[[16]](#footnote-16) The number of deals for which these variables are available drops to 2,716, because they are obtained from Execucomp, which covers only S&P1500 companies. Definitions of all variables are listed in the appendix.

Columns (1) and (2) ((3) and (4)) of Table 2 present the summary statistics of announcement returns and other deal and firm characteristics for all M&A deals (diversifying deals), respectively. Fuller *et al.* (2002) and Moeller *et al.* (2004) document that acquirers on average earn positive CAR when private target deals are included. Given that 50 percent of our sample involves private targets, the mean (median) CAR of 0.99 percent (0.38%) and the relative mean (median) size of 0.18 (0.05) reported in our study are consistent with these papers. Moreover, while only 16 percent of the full sample is mostly paid with the acquirer’s stock, 39 percent of the deals are exclusively paid with cash. This also explains the positive average CAR. The rest of the descriptive statistics for the full sample and diversifying subsample are comparable to those reported by previous studies.

[Insert Table 2 here]

1. **Results**
   1. Baseline regression analysis: which industry expert adds more value?

To estimate the additive effects of outsiders’ and CEOs’ target industry experience on abnormal returns, we estimate the regression model that follows CM (2013):

, (1)

where dependent variable CAR is the 3-day cumulative abnormal return around the deal announcement; is the indicator of outside board members’ experience in the target industry; is the indicator of CEOs’ experience in the target industry defined above; is the matrix of deal and firm control variables; and is the vector of their coefficients. Industry experience is excluded as an independent variable from our regression to avoid collinearity concerns. [[17]](#footnote-17) We include non-diversifying deals to increase the precision of the control variables’ estimates.[[18]](#footnote-18) Here, and are the coefficients of interest. We include industry times year dummies in all specifications to control for merger waves (Harford, 2005). Table 3 reports the results.

First, we estimate regression model (1) including board experience dummy, deal, and firm-level controls defined above. Column (1) shows that experienced outside directors are able to generate 1.98 percentage points higher of 3-day announcement returns compared to board members who do not have experience in the target industry. In column (2) we include CEO experience dummy and estimate the complete model. The effect of outside directors’ industry experience, while controlling for the CEO’s experience, significantly adds to announcement returns. Acquirers that have outside directors with relevant industry experience earn 1.91 percentage points higher 3-day announcement returns than those who do not have expert directors. This effect is economically meaningful representing a gain of approximately $192 million of market value. This finding is consistent with Kroll *et al.* (2008) and Wang *et al.* (2015), supporting the notion of outside directors playing the role of vigilant-advisors. However, CEOs’ industry experience seems to have no significant additive effect on abnormal returns, which does not complement CM’s findings. It is possible that, because CM does not control for outside directors’ experience, its effect may be partially picked up by CEOs’ experience. When industry experiences of both outside directors and CEOs are presented, we find a significantly positive association only between the outsiders’ experience and acquisition performance. It is also possible that even if CEOs’ industry experience is valuable, the other qualities of CEOs representing the “dark side” – overconfidence (Malmendier and Tate, 2008), age (Yim, 2013), narcissism (Aktas *et al.*, 2016), network centrality (El-Khatib *et al.*, 2015) – outweigh the value of their industry-specific insights. Nevertheless, an important point to be noted here is that the insignificant additive effect of CEO experience, which diverges from CM’s conclusions, could well be attributed to differences in sample selection and definition of industry experience. CM use the universe of S&P 1500 for sample selection, whereas we choose our sample from the universe of all publicly traded firms. While they classify CEOs as industry experts if they have held any upper management position including non-executive positions in at least one firm in the target industry, we consider only inside director positions held in the past for such classification. We argue that working as inside directors or executive board members provide not only industry-specific insights that relate to product market competition, supplier network, finance, or accounting, but also offer broad and efficiently organized knowledge, sophisticated long-term strategic thinking capabilities, and the ability to process a large amount of cryptic data within strict time constraints, which are key to effectively managing issues that are inherent to M&A decisions.

In column (3) we estimate a modified model (1), which adds the interaction term between OD\_ID\_EXP and CEO\_ID\_EXP (times the diversifying dummy) to the model (1) specification. Bidding firms that have expert outside directors earn 1.16 percentage points higher of CAR if their CEOs are new to target industries. This finding is consistent with the resource provisioning theory. Nevertheless, when CEOs and boards are both experts, their joint effect has a significantly larger co-efficient. Abnormal returns to bidders with expert boards and expert CEOs are 3.91 percentage points higher than bidders with only expert directors, implying a $394 million increase in shareholders’ wealth of acquiring firms. The evidence supports the shared experience hypothesis, showing that even though CEOs’ experience is not directly related to superior acquisition performance, it is critical for the outsiders’ ability to provide valuable advice and influence the strategy making process, because CEOs identify with directors having a similar past experience and value their opinion more.

In all specifications the effects of the control variables are consistent with the merger literature. In particular, consistent with the neoclassical view of M&As where value is created by redeploying the target’s assets (Jovanovic and Rousseau, 2002), we find that the coefficient of Relative Size is significantly positive, which implies that value creation is positively related to the size of a target’s assets. The coefficient of all cash payment is marginally positive, which implies that cash deals are less likely to happen for overvalued targets (Shleifer and Vishny, 2003). Consistent with Fuller *et al.* (2002), we find that deals involving public targets have lower acquirer announcement returns. The negative effect of bidders’ size is consistent with the size effect documented by Moeller *et al.* (2004). Operating cash flow is negatively related to CAR, which is consistent with the agency cost model, and it predicts that deals driven by excessive free cash flow are likely to be value destroying (Jensen, 1986; Lang *et al.*, 1991).[[19]](#footnote-19)

[Insert Table 3 here]

* 1. Potential biases:

Identification problems and endogenous board-firm matching could potentially bias interpretations of our findings relating to the causal effects of boards’ target industry experience both independently and jointly with CEOs’ experience. We investigate these biases and alternative explanations.

* + 1. Firm heterogeneity

One potential concern for interpretations of our main results is that board experience may be correlated with omitted firm characteristics that are also correlated with acquisition performance. For example, it is possible that better governed or better quality firms are more likely to hire board members from a wide variety of industries or engage in deals when they have experienced board members, or both. These firms generally may make better acquisitions, and the superior acquisition performance may be driven by these missing firm characteristics and not the target industry experience.

We address this concern as follows. First, we absorb the time-invariant unobserved firm heterogeneity by including firm-fixed effects. Relying on within-firm variation, columns (1) and (2) of Table 4 show that experienced board members add 2.41 percentage points to bidder abnormal returns and 1.73 percentage points to bidder abnormal returns when CEOs are new to the target industry. As in Table 3, the interaction between CEO and board experience has a large and statistically significant coefficient. The results support the notion of vigilant-advisors and the resource provisioning role of boards.

In columns (3) and (4) we include the state governance index, an arguably less endogenous control for governance quality of bidders than the G-index of Gompers *et al.* (2003) or the entrenchment index proposed by Bebchuk *et al.* (2009).[[20]](#footnote-20) Following John *et al.* (2015), we construct the state-level governance index by adding one for each antitakeover law (business combination, fair price, control share acquisition, poison pill, and director’s duties) the year after they passed in the state of incorporation of a firm. Firms lobbying against any of these laws are excluded. The state law passage and lobbying data are from Karpoff and Wittry (2017). Inclusion of governance proxies does not confound the additive and joint effects of boards’ experience with or without CEOs’ experience, supporting the vigilant-advisor, resource provisioning, and shared experience hypotheses. However, we find no evidence that governance controls contribute to announcement returns.

A similar concern is that announcement returns can be affected by a stand-alone revaluation of acquiring firms if the market perceives the bidders’ engagement in deals when board members are experts in the target industry as a signal of superior quality. Jovanovic and Braguinsky (2004) argue that the market reaction to a bid announcement largely reflects revisions in the acquiring firm’s expected internal growth opportunities. The method of payment is also known to capture information effects of M&A announcements. In addition to using the mode of payment in our announcement return model as a control, we re-estimate our baseline regressions for the subsample of acquiring firms for which information asymmetry is less of a concern. In columns (5) and (6) of Table 4, we use the probability of informed trading (PIN) as our information asymmetry proxy. The information asymmetry between an acquiring firm and its shareholders is positively related to its PIN (Krishnaswami and Subramaniam, 1999; Brown and Hillegeist, 2007).[[21]](#footnote-21) The experienced board members add 2.05 percentage points to bidder abnormal returns compared to non-experienced boards, confirming our main findings relating to the additive effect of board experience. However, experienced board members and experienced CEOs are able to generate 6.21 percentage points additional 3-day cumulative abnormal return compared to expert board members by themselves, supporting the shared experience hypothesis.

[Insert Table 4 here]

* + 1. Deal heterogeneity

There could still be deal characteristics that are associated with both board experience and announcement returns that bias our interpretations. We use several deal-specific characteristics as controls in our baseline specification, but a concern remains that the 4-digit SIC used for classifying mergers as diversifying may not be broad enough. We would argue that this classification approach might pick bidders and targets that are weakly related, but the complexity of deals would also decline by following this approach as would the need of advice from an experienced board. Nevertheless, we address the concern directly by re-classifying mergers as diversifying if bidders and targets do not share their Fama-French 49 industry categories and re-estimating the baseline regressions. The number of diversifying deals reduces from 3,906 to 2,561 with this broader classification, but as shown in columns (7) and (8) of Table 4, even though the evidence of the resource provisioning role of boards is weakened, the results support the benefits of having vigilant-advisors and shared experience between boards and CEOs.[[22]](#footnote-22)

In addition to the results reported above, we perform a number of robustness checks but do not tabulate the results. We use 2-digit and 3-digit SIC codes for selecting diversifying mergers and find similar results. To address the concern that bidders and targets may be from upstream and downstream industries, and board experience has no real impact, but merely reflects the better acquisition performance of bidders buying firms in vertically-integrated industries (Ahern, 2012), we control for product market links by including bidder-target industry pair effects interacted with year dummies. Again, we find a statistically significant and economically meaningful independent effect of board experience that is exacerbated by the presence of experienced CEOs.

* + 1. Endogeneity of board experience

Another endogeneity concern is that the linear controls used in our announcement return model are inadequate to separate firms with experienced board members from those without, and our measure of board experience is picking up the non-linear effects of these characteristics on acquisition performance. We use a propensity score-based weighting and regression analysis (Rosenbaum and Rubin, 1983; Dehejia and Wahba, 2002; Hirano *et al.*, 2003) to address the functional form misspecification concern. This method re-weights observations in the experienced vs. non-experienced board samples to replicate “appropriate” comparison samples that have comparable distributions of covariates, but differ only in outside directors’ industry experience, addressing the concern that the independent and joint effects of board experience on acquisition performance are driven by differences in observable characteristics of bidding firms and deals that have experienced vs. non-experienced boards.

The mean values of control variables used in our baseline regression reported in Panel A1 of Table 5 show that firms that have experienced board members differ substantially from those that do not. Bidders that have experienced (non-experienced) board members belong to the treated (control) group. The propensity score, p(X), used to weight the observations in the full sample is the probability of being treated conditional on the control variables X, estimated as the logit of the treatment indictor (OD\_ID\_EXP =1) on X as specified in Panel B column (3). We weight the treated and control observations by 1/p(X) and 1/(1-p(X), respectively. Observations with a high (low) likelihood of being treated within the treatment (control) group are down-weighted, evening out the differences between the treated and the control groups. Panel A2 shows the adequacy of this covariate balancing process.

Columns (1) and (2) in Panel B show the effect of the experienced board treatment indicator in the diversifying deal subsample. Consistent with our findings in the full sample, experienced outside directors have a positive impact on announcement returns both independently and jointly with experienced CEOs. Columns (4) and (5) show the propensity score-weighted regression results that support the role of vigilant-advisors, the resource provisioning role of boards, and the shared experience hypothesis.[[23]](#footnote-23)

[Insert Table 5 here]

1. **Heterogeneous CEO-Board Interactions**

In addition to the vigilant-advisor argument, our evidence also supports the resource provisioning and shared experience theories based on monitoring and advisory roles of boards as well as the dynamics of CEO-board relationships, which shape the nature and extent of expert boards’ influence in the strategy making process. Mergers are not homogeneous when it comes to the relative importance of boards’ role as advisors and monitors, and neither is the strategic decision-making process of bidding firms that involves all their top executives and board members. We use these ideas to identify specific situations or environments where boards’ industry experience is solely or jointly (with CEOs’ experience) expected to be more effective in improving acquisition performance. Our arguments are based on heterogeneity of target information asymmetry and certain CEO characteristics.

* 1. Difficult to value targets – private target firm

Private firms disclose little information and are arguably more difficult to value by acquirers. Private targets are not priced by the equity market, and bidders cannot benefit from using investors’ collective wisdom. It is also harder for the market to show its displeasure if managers make mistakes in private target selection and overpay for them. Therefore, information asymmetry associated with private targets and the absence of a mechanism through which bidders’ assessment of the target value can be complemented by the overall market’s asset valuation are expected to raise the value of board members who are insiders in the target industry, and even more so when CEOs are new to the target industry, thus supporting the resource provisioning argument. For experienced boards to have any influence in acquisitions of public companies that are already priced by the market and subject to its feedback, CEOs must have faith in boards’ advice, which is more likely to happen if CEOs also have expertise in the target industry, exacerbating the shared experience effect.

Columns (1) to (4) of Table 6 presents our findings. Column (1) shows that, on average, experienced outside directors can generate 1.64 percentage points higher in abnormal returns than non-experienced outside directors where targets are either private firms or subsidiaries. In addition, column (2) shows that outsiders’ experience is particularly valuable where CEOs are new to the target industry, suggesting that when information is scarce, the board members who are industry insiders can better estimate the fair value of targets. The findings support both ideas of vigilant-advisor and resource provisioning by boards. Column (3), however, shows that the effect of outside directors’ experience is positive but insignificant for public targets that are already priced by the market and when CEOs are able to use the market feedback to correctly value them. It could also be an indication of high reputational risk attached to public M&As (Golubov *et al.*, 2012). As reported in column (3) when market participants can provide an informed assessment of the value of target assets the additive effects of both CEO and board experience are not significant, but column (4) shows that the CEO-board experience interaction has a significantly large effect on announcement returns, generating 19.60 percentage points higher abnormal returns than bidders with experienced boards alone. This indicates that expert boards and expert CEOs together are able to supplement market information for target selection and value assessment substantially, particularly when targets are difficult to value.[[24]](#footnote-24)

* 1. CEO characteristics – general managerial ability and power

Exploiting heterogeneity across bidding firm CEOs’ ability and willingness to collaborate with their boards, we analyze whether boards’ industry experience is more valuable singularly or in conjunction with CEOs’ experience in the same target industry.

Generalist CEOs with diversified professional careers arguably possess superior general managerial skills or human capital (Custodio *et al.*, 2013). They command higher compensation (Brockman *et al.*, 2016), spur innovation (Custodio *et al.*, 2017) – “bright side”, and may also increase agency problems for firms with complex operations and from M&A-intensive industries (Mishra, 2014) – “dark side”. Generalist CEOs are also able to spur collaborative behavior and information exchange and effectively engage all expert TMTs for a high-quality decision-making process (Bunderson and Sutcliffe, 2002; Arendt *et al.*, 2005; Balkundi and Harrison, 2006). Particularly, CEOs who share area-specific knowledge and tenure with their diverse teams are able to blend complex information and enhance the decision-making quality of firms. We draw from these studies to advance our understanding of CEO-board relationship. We expect generalist CEOs who share industry experience with outside board members to engage them, collaborate with them, and realize the benefits of their industry expertise. Therefore, acquisitions that are led by generalist CEOs who share target industry experience with their board members are expected to perform better than those led by generalist CEOs who do not. This is supported by our findings in columns (5) to (8) of Table 6.

We use GAI developed by Custodio *et al.* (2013) to group CEOs into two categories: generalist and specialist. CEO tenure, as a proxy of CEO quality, is positively related to acquisition propensity (Hermalin and Weisbach, 1998). Equity-based compensation and pay-performance sensitivity are positively related to acquisition performance (Datta *et al.*, 2001). We include several other variables measuring CEO skills and characteristics that might be correlated with CEOs’ industry experience and with superior acquisition performance.[[25]](#footnote-25) Table 6’s columns (5) and (7) show that the independent effect of expert boards is positive for acquisitions led by generalist CEOs.[[26]](#footnote-26) When the interaction between CEOs and boards’ experience is added, column (6) shows that generalist CEOs are able to generate 11.64 percentage points of abnormal announcement return when they have shared experience with their boards compared to generalist CEOs who are new to the target industry even when their boards are target industry experts. Specialist CEOs are unable to derive any benefit from expert board members regardless of their own target industry expertise. The shared experience effect is therefore exaggerated by the presence of generalist CEOs.

Krause *et al.* (2014) argue that a CEO who is also the chairman of a board is more likely to ignore the board’s advice. Duality has been used extensively as an indicator of CEOs’ power. Distribution of decision making power may affect the extent of boards’ ability to influence merger strategies as well. Given that managers value advice from the directors, but prefer not to be monitored (Adams *et al.*, 2005), we explore whether CEOs’ power has any impact on their willingness to work with the boards, and whether that in turn affects the way CEOs and boards with target industry expertise influence merger performance in diversifying acquisitions.

We argue that it is more likely that powerful CEOs make major decisions by themselves rather than through a collaborative process with board members and executive teams, with the exception of merger deals involving target industries in which CEOs share knowledge and past experience with their board members. On the contrary, less powerful CEOs are more likely to be persuaded by the experienced counsel of boards, particularly when they are new to the target industry. Columns (9) to (12) of Table 6 reports the results.

Columns (9) and (10) of Table 6 show in the no duality subsample that board experience has an additive effect on acquisition performance, and for bidders that have CEOs who are new to the target industry, the expert board members are able to generate an additional 2.37 percentage points returns compared to board members with no target industry experience. This finding supports the resource provisioning role of boards. Additional CEO characteristics are included as controls. However, in the duality subsample, columns (11) and (12) show that it is only when CEOs and board members have common experience in the target industry that they are able to pool and integrate their knowledge to generate 17.91 percentage points higher returns than experienced board members alone.

[Insert Table 6 here]

1. **Conclusion**

Pursuant to investigating the advising and monitoring role of board of directors, in recent years, scholars have studied the industry experience of boards in related and unrelated industries. CEOs’ industry experience has also garnered much attention as part of a bigger conversation about CEOs’ characteristics and their impact on performance of firms. In this paper we examine whether the past experience of boards and CEOs in the target industry are independently and jointly valuable in diversifying acquisitions. We find that outside directors’ experience has a significant additive effect on acquisition performance, but controlling for outsiders’ experience CEOs’ experience does not add any value. However, CEOs’ experience does impact the nature and extent of outside board members’ influence in the acquisition process. Specifically, bidders that have expert directors earn 1.16 percentage points higher than those with non-experienced board members when their CEOs are new to the target industry, but when both boards and CEOs are industry experts the additional abnormal return is 3.91 percentage points higher compared to that of bidders with only expert board members. Our evidence supports the agency, resource provisioning, and shared experience perspectives, but there are specific information-based and CEO-characteristic-based situations that change the dynamics of CEO-board relationships, which affects the need for having expert board monitors vs. advisors. For example, boards’ industry experience is singularly valuable for acquisitions involving private targets, but CEOs’ and boards’ shared experience is more relevant in acquisitions of public firms or for example, Generalist CEOs are able to realize the value of industry experts, and as a consequence they intensify the shared experience effect.

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**Table 1  
Distribution of Merger and Acquisition Deals**

Panel A presents the distribution of all acquisitions and diversifying acquisitions over time. The sample consists of 6,178 completed M&A deals with public acquirers from 1999 to 2011 where the acquirer sought after at least 50% ownership of the target firm. The combined sample requires data be available from Securities Data Corporation (SDC) mergers and acquisitions database, BoardEx employment history database, CRSP, and Standard and Poor’s COMPUSTAT. Observations where either the acquirer or the target firm belongs to the utility or financial industry are excluded. Panel B presents the fraction of diversifying deals where either the acquirer’s outside directors or CEO or both have target industry experience. The dummy OD\_ID\_EXP (CEO\_ID\_EXP) equals one if any outside director (the CEO) of the acquiring firm has past experience working as an inside director in a firm that has the same 4-digit SIC code as the target firm.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Panel A: Number of deals by year | | | | | |
| Year | Number of All Deals | | Number of Diversifying Deals | | As a % of All Deals |
| 1999 | 493 | | 310 | | 62.88 |
| 2000 | 494 | | 317 | | 64.17 |
| 2001 | 377 | | 254 | | 67.37 |
| 2002 | 428 | | 264 | | 61.68 |
| 2003 | 450 | | 274 | | 60.89 |
| 2004 | 538 | | 337 | | 62.64 |
| 2005 | 571 | | 374 | | 65.50 |
| 2006 | 614 | | 386 | | 62.87 |
| 2007 | 632 | | 400 | | 63.29 |
| 2008 | 446 | | 255 | | 57.17 |
| 2009 | 337 | | 208 | | 61.72 |
| 2010 | 385 | | 255 | | 66.23 |
| 2011 | 413 | | 272 | | 65.86 |
| Total | 6,178 | | 3,906 | | 63.22 |
| Panel B: Diversifying deals and industry experience | | | | | |
| Industry experience of the board | | Number of Deals | | As a % of All Diversifying Deals | |
| OD\_ID\_EXP | | 126 | | 3.23 | |
| CEO\_ID\_EXP | | 98 | | 2.51 | |
| OD\_ID\_EXP&CEO\_ID\_EXP | | 32 | | 0.82 | |

**Table 2  
Summary Statistics**

Panel A of this table presents the summary statistics of selective variables used in the study. Each summary statistic is reported for two separate samples. The first sample consists of 6,178 completed M&A deals, and the second sample consists of 3,906 completed diversifying M&A deals with public acquirers from 1999 to 2011 where the acquirer sought after at least 50% ownership of the target firm. Variable definitions are in appendix.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Panel A: Summary Statistics | | | | |
| Deals | All deals (N = 6,178) | | Diversifying deals (N = 3,906) | |
| Variables | Mean | Median | Mean | Median |
| CAR(-1, +1) (%) | 0.99 | 0.38 | 0.94 | 0.42 |
| Relative Size | 0.18 | 0.05 | 0.17 | 0.05 |
| Most Stock | 0.16 | 0 | 0.15 | 0 |
| All Cash | 0.39 | 0 | 0.39 | 0 |
| Public Target | 0.15 | 0 | 0.14 | 0 |
| Private Target | 0.55 | 1 | 0.56 | 1 |
| Other Target | 0.30 | 0 | 0.30 | 0 |
| Firm Size | 6.52 | 6.43 | 6.55 | 6.43 |
| Asset (book), mm$ | 4,769.36 | 618.96 | 5,473.63 | 621.88 |
| Equity (market), mm$ | 10,086.30 | 882.46 | 11,457.92 | 895.28 |
| MB | 2.79 | 1.83 | 2.70 | 1.83 |
| Leverage | 0.18 | 0.15 | 0.18 | 0.15 |
| OCF | 0.01 | 0.32 | -0.17 | 0.33 |

Table 3

Industry Experience of Board, CEO, and Acquisition Performance – Regression Analyses

This table reports the results from ordinary lest square (OLS) regressions of bidder 3-day cumulative abnormal returns (CAR) on board experience, CEO experience, and firm and deal controls. Year-Fama-French 12 (FF12) industry dummies are included. The sample consists of 6,178 completed M&A deals. Significance is based on White-adjusted standard errors with t-stats reported below each coefficient. \*\*\*, \*\*, and \* denote statistical significance at 1%, 5%, and 10% levels, respectively. Variable definitions are in appendix.

| Dependent Variable:  CAR (-1, +1) (%) | (1) | (2) | (3) |
| --- | --- | --- | --- |
| OD\_ID\_EXP\* Diversifying | 1.975\*\*\* | 1.911\*\*\* | 1.157\* |
|  | (2.92) | (2.71) | (1.85) |
| CEO\_ID\_EXP\* Diversifying |  | 0.273 | -0.776 |
|  |  | (0.25) | (-0.60) |
| OD\_ID\_EXP\* CEO\_ID\_EXP\* Diversifying |  |  | 3.911\* |
|  |  |  | (1.70) |
| Diversifying | -0.197 | -0.203 | -0.186 |
|  | (-0.81) | (-0.83) | (-0.76) |
| Relative size | 1.320\*\* | 1.320\*\* | 1.313\*\* |
|  | (2.14) | (2.14) | (2.13) |
| Most stock | -0.259 | -0.260 | -0.253 |
|  | (-0.50) | (-0.50) | (-0.49) |
| All cash | 0.376\* | 0.377\* | 0.369\* |
|  | (1.69) | (1.69) | (1.66) |
| Public target | -2.606\*\*\* | -2.608\*\*\* | -2.610\*\*\* |
|  | (-6.18) | (-6.19) | (-6.20) |
| Private target | -0.328 | -0.326 | -0.326 |
|  | (-1.20) | (-1.19) | (-1.19) |
| Firm size | -0.376\*\*\* | -0.375\*\*\* | -0.371\*\*\* |
|  | (-5.68) | (-5.67) | (-5.60) |
| MB | -0.058 | -0.058 | -0.058 |
|  | (-1.44) | (-1.44) | (-1.44) |
| OCF | -0.001\* | -0.001\* | -0.001\* |
|  | (-1.77) | (-1.77) | (-1.79) |
| Leverage | -0.081 | -0.078 | -0.087 |
|  | (-0.13) | (-0.13) | (-0.14) |
|  |  |  |  |
| Year\*Industry dummies | Yes | Yes | Yes |
| N | 6,178 | 6,178 | 6,178 |
| R2 | 0.0448 | 0.0448 | 0.0454 |

Table 4

Robustness Tests

This table tests the robustness of the results reported in Table 4. The full sample consists of 6,178 completed M&A deals. Columns (1) and (2) report the results from baseline ordinary least square (OLS) regressions defined in Table 4, after adding firm fixed effects. Year-FF12 industry dummies are included. Columns (3) and (4) report the results with state governance index as additional control. Columns (5) and (6) present the results for low information asymmetry bidders, classified as such by high probability of informed trades (PIN), which is used as a proxy of information asymmetry; a low value implies low information asymmetry. Columns (7) and (8) report the results using an alternative definition of diversifying acquisitions based on Fama-French 49 industry categories. Significance is based on White-adjusted standard errors with t-stats reported below each coefficient. \*\*\*, \*\*, and \* denote statistical significance at 1%, 5%, and 10% levels, respectively. Variable definitions are in appendix.

| Dependent Variable:  CAR(-1,+1) (%) | Firm fixed-effects | | Control for governance | | Low information asymmetry subsample | | Diversifying defined by FF49 | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| OD\_ID\_ EXP\* Diversifying | 2.414\*\*\* | 1.738\* | 1.971\*\*\* | 1.189\* | 2.050\*\*\* | 1.147 | 2.087\*\*\* | 1.077 |
|  | (2.92) | (1.92) | (2.85) | (1.83) | (2.59) | (1.55) | (2.66) | (1.59) |
| CEO\_ID\_ EXP\* Diversifying | 1.381 | 0.406 | 0.198 | -0.832 | 0.332 | -1.247 | -0.071 | -1.916 |
|  | (1.17) | (0.31) | (0.18) | (-0.64) | (0.29) | (-1.15) | (-0.04) | (-0.90) |
| OD\_ID\_EXP\* CEO\_ID\_EXP\* Diversifying |  | 3.864 |  | 3.877\* |  | 6.208\*\* |  | 7.436\*\* |
|  |  | (1.49) |  | (1.67) |  | (2.03) |  | (2.04) |
| Diversifying | -0.355 | -0.354 | -0.153 | -0.136 | 0.005 | 0.031 | -0.269 | -0.246 |
|  | (-1.12) | (-1.12) | (-0.62) | (-0.55) | (0.02) | (0.10) | (-1.09) | (-0.99) |
| Governance index |  |  | -0.035 | -0.023 |  |  |  |  |
|  |  |  | (-0.11) | (-0.07) |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Firm and deal controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year\*Industry dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes |  |  |  |  |  |  |
| N | 6,178 | 6,178 | 6,011 | 6,011 | 3,029 | 3,029 | 6,178 | 6,178 |
| R2 | 0.4636 | 0.4639 | 0.0470 | 0.0476 | 0.0619 | 0.0637 | 0.0446 | 0.0456 |

Table 5

Endogenous Board-Firm Matching – Propensity Score Weighting Method

Panel A of this table compares the means of the control variables used in our announcement return model for the OD\_ID\_EXP = 0 and OD\_ID\_EXP = 1 subsamples. The sample consists of 3,906 completed diversifying M&A deals. Panel A1 compares the unweighted means, and Panel A2 compares the inverse propensity score (obtained from column (3), Panel B) weighted means. Panel B of this table shows unweighted and weighted regression results. Columns (1) and (2) present the unweighted baseline ordinary least square (OLS) regression coefficients of bidder 3-day cumulative announcement returns (CAR) on board experience, CEO experience, and control variables for diversifying deals. Column (3) shows the co-efficient estimates from a logistic regression of dichotomous OD\_ID\_EXP variable on all control variables used in the baseline regression. The fitted values of this model constitute the propensity score for each bidder-year observation that is used in the weighted regressions, coefficients from which are reported in the next two columns, (4) and (5). Year-FF12 industry dummies are included. Significance is based on White-adjusted standard errors with t-stats (Wald Chi-square) reported below each coefficient in columns (1), (2), (4), and (5) ((3)). \*\*\*, \*\*, and \* denote the statistical significance at 1%, 5%, and 10% levels, respectively. Variable definitions are in appendix.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Panel A: Comparison of mean values of covariates between firms with inexperienced and experienced board members (OD\_ID\_EXP = 0 and OD\_ID\_EXP =1) | | | | | | |
|  | 1. Unweighted | | | 2. Propensity score weighted | | |
|  | OD\_ID\_EXP = 0 | OD\_ID\_EXP = 1 | Diff t-stat | OD\_ID\_EXP = 0 | OD\_ID\_EXP = 1 | Diff  t-stat |
| CEO\_ID\_EXP | 0.02 | 0.26 | -6.10\*\*\* | 0.04 | 0.04 | -0.10 |
| Relative size | 0.17 | 0.13 | 1.22 | 0.15 | 0.13 | 0.29 |
| Most stock | 0.15 | 0.11 | 1.67\* | 0.18 | 0.19 | 0.75 |
| All cash | 0.39 | 0.50 | -2.33\*\* | 0.40 | 0.45 | 0.28 |
| Public target | 0.15 | 0.13 | 0.51 | 0.15 | 0.23 | -2.29\*\* |
| Private target | 0.55 | 0.66 | -2.39\*\* | 0.60 | 0.55 | 1.19 |
| Firm size | 6.53 | 7.56 | -5.00\*\*\* | 6.53 | 6.51 | 0.08 |
| MB | 2.69 | 2.70 | -0.06 | 3.04 | 3.39 | -0.78 |
| OCF | -0.20 | 0.36 | -1.01 | 0.35 | 0.39 | -1.34 |
| Leverage | 0.18 | 0.13 | 3.12\*\*\* | 0.15 | 0.16 | -0.37 |
| N | 3,738 | 123 |  | 2,378 | 123 |  |

| Panel B: Regressions before and after weighting by propensity score | | | | | |
| --- | --- | --- | --- | --- | --- |
| Dependent Variable: | CAR unweighted | | OD\_ID\_EXP | CAR weighted | |
| Diversifying deals only | (1) | (2) | (3) | (4) | (5) |
| OD\_ID\_EXP | 1.802\*\* | 1.055 |  | 0.957\*\*\* | 0.715\*\* |
|  | (2.05) | (1.08) |  | (2.74) | (1.99) |
| CEO\_ID\_EXP | -0.001 | -0.999 | 3.017\*\*\* | 1.619\* | -0.709 |
|  | (-0.00) | (-0.88) | (112.83) | (1.81) | (-0.57) |
| OD\_ID\_EXP\* CEO\_ID\_EXP |  | 3.766\* |  |  | 4.822\*\*\* |
|  |  | (1.71) |  |  | (2.72) |
| Relative size | 1.001\*\*\* | 0.989\*\* | 0.333 | 0.408 | 0.338 |
|  | (2.61) | (2.58) | (1.85) | (0.73) | (5.62) |
| Most stock | 0.222 | 0.232 | -0.450 | -0.025 | -0.004 |
|  | (0.46) | (0.48) | (1.54) | (-0.05) | (-0.01) |
| All cash | 0.633\* | 0.619\* | 0.207 | 1.241\*\*\* | 1.230\*\*\* |
|  | (1.89) | (1.85) | (0.85) | (2.97) | (2.95) |
| Public target | -2.319\*\*\* | -2.319\*\*\* | -0.307 | -4.523\*\*\* | -2.837\*\*\* |
|  | (-4.60) | (-4.60) | (0.71) | (-7.89) | (-7.86) |
| Private target | -0.304 | -0.305 | 0.525\*\* | -0.602 | -0.620 |
|  | (-0.87) | (-0.87) | (4.11) | (1.36) | (-1.40) |
| Firm size | -0.370\*\*\* | -0.362\*\*\* | 0.326\*\*\* | -0.330\*\*\* | -0.332\*\*\* |
|  | (-4.49) | (-4.42) | (38.92) | (-3.62) | (-3.55) |
| MB | -0.142\*\*\* | -0.142\*\*\* | -0.005 | -0.166\*\*\* | -0.166\*\*\* |
|  | (-3.22) | (-3.22) | (0.02) | (-3.16) | (-3.16) |
| OCF | -0.002 | -0.002 | -0.071 | 0.936\*\*\* | 0.956\*\*\* |
|  | (-0.38) | (-0.38) | (0.08) | (2.83) | (2.89) |
| Leverage | -0.312 | -0.319 | -1.470\*\* | -1.066 | -1.082 |
|  | (-0.37) | (-0.38) | (3.64) | (-1.03) | (-1.05) |
|  |  |  |  |  |  |
| Year\*Industry dummies | Yes | Yes | Yes | Yes | Yes |
| N | 3,861 | 3,861 | 2,501 | 2,501 | 2,501 |
| Likelihood ratio |  |  | 139.87 |  |  |
| R2 | 0.0490 | 0.0497 |  | 0.1636 | 0.1661 |

Table 6

Target Characteristics, Generalist vs. Specialist CEO, CEO Duality

This table reports the results from ordinary lest square (OLS) regressions of bidder 3-day bidder abnormal returns (CAR) on board experience, CEO experience, and control variables for different subsamples. Year-FF12 industry dummies are included. The full sample consists of 6,178 completed M&A deals. Columns (1) and (2) ((3) and (4)) report the results for deals with non-public (public) targets. Columns (5) and (6) ((7) and (8)) present the regression results for the acquiring firm subsample where CEOs are Generalists (Specialists). The Generalist and Specialist subsamples are constructed based on CEOs’ general management index (GAI) developed by Custodio et al. (2013). Data provided by authors span from fiscal years 1994 to 2007. Additional CEO controls (Duality, Log(CEO age), Log(CEO tenure), Log(Delta), and Log(Vega)) are obtained from Execucomp. Columns (9) and (10) ((11) and (12)) present the regression results for the acquiring firm subsample where CEOs are not (are also) chairmen of the board. Significance is based on White-adjusted standard errors with t-stats reported below each coefficient. \*\*\*, \*\*, and \* denote the statistical significance between deals with experience and without experience at 1%, 5%, and 10% levels, respectively. Variable definitions are in appendix.

| Dependent Variable:  CAR(-1,+1) (%) | Non-public targets | | Public targets | | Generalist CEOs | | Specialist CEOs | | No Duality | | Duality | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| OD\_ID\_ EXP\* Diversifying | 1.644\*\*\* | 1.544\*\*\* | 5.244 | 0.119 | 3.019\*\* | 1.221 | 2.425 | 2.071 | 2.400\*\* | 2.370\* | 2.000 | -0.735 |
|  | (2.75) | (2.64) | (1.53) | (0.04) | (2.15) | (0.99) | (1.39) | (1.09) | (2.25) | (2.05) | (1.21) | (-0.74) |
| CEO\_ID\_ EXP\* Diversifying | -0.290 | -0.450 | 3.601 | -0.049 | 0.325 | -2.657 | -2.104 | -2.536 | 0.183 | 0.076 | -0.258 | -2.917 |
|  | (0.25) | (-0.30) | (1.44) | (-0.02) | (0.13) | (-0.97) | (-0.86) | (-0.92) | (0.13) | (0.05) | (-0.11) | (-1.24) |
| OD\_ID\_EXP\* CEO\_ID\_EXP\* Diversifying |  | 0.551 |  | 19.603\*\* |  | 11.643\*\* |  | 3.717 |  | 0.256 |  | 17.908\*\*\* |
|  |  | (0.26) |  | (2.46) |  | (2.18) |  | (0.95) |  | (0.08) |  | (2.94) |
| Diversifying | -0.283 | -0.281 | -0.483 | -0.372 | -0.011 | 0.027 | -0.613 | -0.607 | -0.270 | -0.269 | -0.561 | -0.540 |
|  | (-1.09) | (-1.08) | (-0.75) | (-0.58) | (-0.03) | (0.06) | (-1.23) | (-1.21) | (-0.66) | (-0.66) | (-1.47) | (-1.42) |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Firm and deal controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| CEO controls |  |  |  |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year\*Industry dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 5,270 | 5,270 | 908 | 908 | 1,061 | 1,061 | 1,007 | 1,007 | 1,324 | 1,324 | 1,392 | 1,392 |
| R2 | 0.0448 | 0.0449 | 0.2061 | 0.2212 | 0.1087 | 0.1213 | 0.1447 | 0.1449 | 0.1027 | 0.1027 | 0.1337 | 0.1496 |

**Appendix: Variable definitions**

|  |  |
| --- | --- |
| *Panel A: Industry Experience* | |
| OD\_ALL\_EXP | Dummy equals one if any outside director of the acquiring firm has experience either as an inside director or as an outside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| OD\_ID\_EXP | Dummy equals one if any outside director of the acquiring firm has experience as an inside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| OD\_OD\_EXP | Dummy equals one if any outside director of the acquiring firm has experience as an outside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| CEO\_ALL\_EXP | Dummy equals one if the CEO of the acquiring firm has experience either as an inside director or as an outside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| CEO\_ID\_EXP | Dummy equals one if the CEO director of the acquiring firm has experience as an inside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| CEO\_OD\_EXP | Dummy equals one if the CEO director of the acquiring firm has experience as an outside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| ALL\_ALL\_EXP | Dummy equals one if any director of the acquiring firm has experience either as an executive director or as a non-executive director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| ALL\_ID\_EXP | Dummy equals one if any director of the acquiring firm has experience as an inside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| ALL\_OD\_EXP | Dummy equals one if any director of the acquiring firm has experience as an outside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| ID\_ALL\_EXP | Dummy equals one if any inside director of the acquiring firm has experience either as an inside director or as an outside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| ID\_ID\_EXP | Dummy equals one if any inside director of the acquiring firm has experience as an inside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| ID\_OD\_EXP | Dummy equals one if any inside director of the acquiring firm has experience as an outside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. |
| *Panel B: Deal Related Variables* | |
| CAR (-1, +1) (%) | Acquirer’s three-day cumulative abnormal return (day -1 through +1) calculated using the market model. The market model parameters are estimated over the period (-210, -11) with the CRSP equally-weighted return as the market index. This variable is a percentage return. |
| Large loss dummy | Dummy equals one if the acquiring shareholders have lost more than 500 million in 2011 US dollars. |
| Premium (%) | Target premium reported in SDC, defined as 100\*[(deal value/target’s market value one day before the announcement) – 1]. |
| Diversifying | Dummy equals one for deals involving targets with a 4-digit SIC code different from that of the acquirer. |
| Relative Size | Deal value of the M&A deal divided by the acquirer’s market value of assets |
| Most Stock | Dummy equals one for at least 50% equity-financed deals. |
| All Cash | Dummy equals one for a 100% cash-financed deal. |
| Public Target | Dummy equals one if the target is a public firm. |
| Private Target | Dummy equals one if the target is a private firm. |
| Other Target | Dummy equals one if the target is a subsidiary, joint venture, or other types of business entity defined in SDC. |
| *Panel C: Bidder Firm Characteristics* | |
| Firm Size | Log of the book value of assets before announcement. |
| MB | The market-to-book ratio of the asset of the acquirer prior to the M&A deal, defined as (AT-CEQ+CSHO\*PRCC\_F)/AT. |
| OCF | Operating cash flow of the acquirer prior to the M&A deal, defined as (Sales-COGS-XSGA+XDP+GDWL) scaled by the book value of assets (AT). |
| Leverage | The book value of debt divided by the total asset, defined as (DLC + DLTT)/AT, measured in the year prior to the M&A deal. |
| *Panel D: Other Variables* | |
| PIN | Probability of an informed trading. The estimates of PIN are downloaded from Stephen Brown’s website  <http://scholar.rhsmith.umd.edu/sbrown/pin-data> |
| Governance index | It equals one minus the antitakeover laws index constructed by John *et al.* (2015) divided by five. The antitakeover laws index adds 1 for each 2nd generation antitakeover law (business combination, control share acquisition, fair price, directors’ duties, and poison pill) in effect in the state of the firm’s incorporation. The passage of state antitakeover laws data is sourced from Karpoff and Wittry (2017), who record the adoption of 2nd generation state antitakeover laws from 1982-2013. |
| Generalist | Dummy equals one if the CEO has the general ability index (GAI) greater than 0. Developed by Custodio *et al.* (2013), GAI measures the general managerial skills of CEOs. CEOs are coded as Generalists if the dummy equals zero. The data span from fiscal years 1994 to 2007, and we thank the authors for making the data available through the website of Journal of Financial Economics <http://jfe.rochester.edu/data.htm> |
| Duality | Dummy equals one if the CEO is also the chairman of the board. |
| Log(CEO age) | Natural logarithm of CEO age. |
| Log(CEO tenure) | Natural logarithm of CEO tenure measured in years. |
| Log(Delta), Log(Vega) | Log(Delta) is the natural logarithm of the pay-performance sensitivity. Pay-performance sensitivity is defined as the dollar change in wealth associated with a 1% change in the firm’s stock price (in $000s). Log(Vega) is the natural logarithm of the dollar change in wealth associated with a 1 percent change in the standard deviation of the firm’s returns (in $000s). Both are calculated based on Coles *et al.* (2006)’s algorithm using data from Execucomp. We thank Lalitha Naveen for providing the algorithm and data on her website <https://sites.temple.edu/lnaveen/data/> |

**Table A.1**

**All Board Members’ and CEOs’ Target Industry Experience as Insiders or Outsiders  
 – Distribution of Diversifying Deals and Average Bidder Cumulative Announcement Return**

The sample consists of 6,178 completed M&A deals with public acquirers from 1999 to 2011 where the acquirer sought after at least 50% ownership of the target firm. The combined sample requires data be available from Securities Data Corporation (SDC) mergers and acquisitions database, BoardEx employment history database, CRSP, and Standard and Poor’s COMPUSTAT. Observations where either the acquirer or the target firm belongs to the utility or financial industry are excluded. Panel A presents the fraction of diversifying deals where the acquirer’s directors (any, inside or outside) or CEOs have target industry experience (any, inside, or outside). Panel B compares the average 3-day cumulative abnormal returns (CAR) around announcement across subsamples of acquiring firms with and without outsiders, insiders, and CEOs who have prior experience working as either inside or outside board members in target industries. Panel C compares the average 3-day cumulative abnormal returns (CAR) around announcement across subsamples of acquiring firms with and without outsiders, insiders, and CEOs who have prior experience working as inside board members in target industries. Panel D compares the average 3-day cumulative abnormal returns (CAR) around announcement across subsamples of acquiring firms with and without outsiders, insiders, and CEOs who have prior experience working as outside board members in target industries. The mean, median, and number of observations of each subsample are reported. The difference tests are based on t-tests for equality of means and Wilcoxon-tests for equality of medians. \*\*\*, \*\*, and \* denote the statistical significance of difference in announcement returns between deals at 1%, 5%, and 10% level, respectively. Variables definitions are in appendix.

|  |  |  |
| --- | --- | --- |
| Panel A: Diversifying deals and industry experience | | |
| Industry experience of the board | Number of Deals | As a % of All Diversifying Deals |
| ALL\_ALL\_EXP | 563 | 14.41 |
| ALL\_OD\_EXP | 247 | 6.32 |
| ALL\_ID\_EXP | 556 | 14.23 |
| OD\_ALL\_EXP | 563 | 14.41 |
| OD\_ID\_EXP | 126 | 3.23 |
| OD\_OD\_EXP | 540 | 13.82 |
| ID\_ALL\_EXP | 240 | 6.14 |
| ID\_ID\_EXP | 147 | 3.76 |
| ID\_OD\_EXP | 136 | 3.48 |
| CEO\_ALL\_EXP | 145 | 3.71 |
| CEO\_ID\_EXP | 98 | 2.51 |
| CEO\_OD\_EXP | 58 | 1.48 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Panel B: Average cumulative abnormal returns – All board members’ and CEOs’ outside or insider experience | | | | | |
| CAR(-1,+1) (%) |  | Without Experience | With Experience | P-value |  |
| All directors | Mean | 0.926 | 1.013 | 0.807 |  |
| (ALL\_ALL\_EXP) | Median | 0.406 | 0.548 | 0.316 |  |
|  | N | 3,343 | 563 |  |  |
| Outside directors | Mean | 0.925 | 1.022 | 0.784 |  |
| (OD\_ALL\_EXP) | Median | 0.406 | 0.542 | 0.250 |  |
|  | N | 3,343 | 563 |  |  |
| Inside directors | Mean | 0.909 | 1.397 | 0.399 |  |
| (ID\_ALL\_EXP) | Median | 0.395 | 1.044 | 0.059 | \* |
|  | N | 3,666 | 240 |  |  |
| CEO | Mean | 0.914 | 1.575 | 0.842 |  |
| (CEO\_ALL\_EXP) | Median | 0.409 | 1.380 | 0.072 | \* |
|  | N | 3,761 | 145 |  |  |
| Panel C: Average cumulative abnormal returns – All board members’ and CEOs’ inside experience | | | | | |
| CAR(-1,+1) (%) |  | Without Experience | With Experience | P-value |  |
| All directors | Mean | 0.867 | 2.001 | 0.044 | \*\* |
| (ALL\_ID\_EXP) | Median | 0.375 | 1.241 | 0.001 | \*\*\* |
|  | N | 3,659 | 247 |  |  |
| Outside directors | Mean | 0.890 | 2.389 | 0.029 | \*\* |
| (OD\_ID\_EXP) | Median | 0.406 | 0.681 | 0.032 | \*\* |
|  | N | 3,780 | 126 |  |  |
| Inside directors | Mean | 0.909 | 1.688 | 0.337 |  |
| (ID\_ID\_EXP) | Median | 0.410 | 1.237 | 0.045 | \*\* |
|  | N | 3,759 | 147 |  |  |
| CEO | Mean | 0.916 | 1.814 | 0.416 |  |
| (CEO\_ID\_EXP) | Median | 0.413 | 1.509 | 0.068 | \* |
|  | N | 3,808 | 98 |  |  |
| Outside directors & CEO | Mean | 0.902 | 5.410 | 0.018 | \*\* |
| (OD\_ID\_EXP\* | Median | 0.417 | 2.927 | 0.005 | \*\*\* |
| CEO\_ID\_EXP) | N | 3,847 | 32 |  |  |
| Panel D: Average cumulative abnormal returns – All board members’ and CEOs’ outside experience | | | | | |
| CAR(-1,+1) (%) |  | Without Experience | With Experience | P-value |  |
| All directors | Mean | 0.938 | 0.944 | 0.988 |  |
| (ALL\_OD\_EXP) | Median | 0.417 | 0.535 | 0.401 |  |
|  | N | 3,350 | 556 |  |  |
| Outside directors | Mean | 0.935 | 0.958 | 0.957 |  |
| (OD\_OD\_EXP) | Median | 0.418 | 0.501 | 0.442 |  |
|  | N | 3,366 | 540 |  |  |
| Inside directors | Mean | 0.924 | 1.349 | 0.591 |  |
| (ID\_OD\_EXP) | Median | 0.418 | 0.575 | 0.374 |  |
|  | N | 3,770 | 136 |  |  |
| CEO | Mean | 0.939 | 0.881 | 0.961 |  |
| (CEO\_OD\_EXP) | Median | 0.420 | 1.077 | 0.656 |  |
|  | N | 3,848 | 58 |  |  |

Table A.2

All Board Members’ Target Industry Experience as Insiders – Regression Analyses of Cumulative Bidder Announcement Return

This table reports the results from ordinary lest square (OLS) regressions of bidder 3-day cumulative abnormal returns (CAR) on board experience, CEO experience, and control variables. The sample consists of 6,178 completed M&A deals. In column (1), the dummy ALL\_ID\_EXP equals one if any director of the acquiring firm has experience as an inside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. In columns (3) and (4), the dummy OD\_ID\_EXP equals one if any outside director of the acquiring firm has experience as an inside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. In columns (2) to (4), the dummy ID\_ID\_EXP equals one if any inside director of the acquiring firm has experience as an inside director in a firm that has the same 4-digit SIC code as the target firm in the acquisition. Year-FF12 industry dummies are included. Significance is based on White-adjusted standard errors with t-stats reported below each coefficient. \*\*\*, \*\*, and \* denote the statistical significance at 1%, 5%, and 10% levels, respectively. Variable definitions are in appendix.

| Dependent Variable:  CAR (-1, +1) (%) | (1) | (2) | (3) |
| --- | --- | --- | --- |
| ALL\_ID\_EXP\* Diversifying | 1.357\*\* |  |  |
|  | (2.43) |  |  |
| OD\_ID\_EXP\* Diversifying |  | 1.944\*\*\* | 1.420\*\* |
|  |  | (2.93) | (2.38) |
| ID\_ID\_EXP\* Diversifying |  | 0.089 | -0.318 |
|  |  | (0.11) | (-0.34) |
| OD\_ID\_EXP\* ID\_ID\_EXP \*Diversifying |  |  | 1.739 |
|  |  |  | (0.97) |
| Diversifying | -0.221 | -0.200 | -0.190 |
|  | (-0.90) | (-0.82) | (-0.78) |
|  |  |  |  |
| Firm and deal controls | Yes | Yes | Yes |
| Year\*Industry dummies | Yes | Yes | Yes |
| N | 6,178 | 6,178 | 6,178 |
| R2 | 0.0447 | 0.0448 | 0.0449 |

Table A.3

Industry Experience of Board, CEO, and Acquisition Performance – S&P 1500 Firms

The dependent variable in each column is the bidder 3-day cumulative abnormal returns. The full sample consists of 6,178 completed M&A deals. Columns (1) and (2) present the regression results for the subsample where bidders were included at least once in the S&P1500 index within the sample period. Year-FF12 industry dummies are included. Significance is based on White-adjusted standard errors with t-stats reported below each coefficient. \*\*\*, \*\*, and \* denote the statistical significance at 1%, 5%, and 10% levels, respectively. Variable definitions are in appendix.

| Dependent Variable: CAR (-1, +1) (%) | S&P1500 firms | |
| --- | --- | --- |
|  | (1) | (2) |
| OD\_ID\_EXP\* Diversifying | 2.692\*\*\* | 1.990\*\* |
|  | (3.56) | (2.67) |
| CEO\_ID\_EXP\* Diversifying | 0.122 | -1.050 |
|  | (0.10) | (-0.74) |
| OD\_ID\_EXP\* CEO\_ID\_EXP\* Diversifying |  | 4.478\* |
|  |  | (1.69) |
| Diversifying | -0.353 | -0.337 |
|  | (-1.45) | (-1.38) |
|  |  |  |
| Firm and deal controls | Yes | Yes |
| Year\*Industry dummies | Yes | Yes |
| N | 4,030 | 4,030 |
| R2 | 0.0635 | 0.0645 |

Table A.4

Industry Experience of Board, CEO, and Acquisition Performance – Large Loss and Premium

The dependent variable in columns (1) and (2) is an indicator variable that takes the value of one for large loss deals and zero, otherwise. The dependent variable in columns (3) and (4) is the one-day offer premium that is the ratio of initially offered price per share over the price per share of the target one day before the announcement. Year-FF12 industry dummies are included. Significance is based on White-adjusted standard errors with Wald Chi-square (t-stats) reported below each coefficient in column (1) and (2) ((3) and (4)). \*\*\*, \*\*, and \* denote the statistical significance between deals at 1%, 5%, and 10% levels, respectively. Variable definitions are in appendix.

| Dependent Variable | Large Loss | | Premium (%) | |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| OD\_ID\_EXP\* Diversifying | -0.489\*\* | -0.421\* | -24.666\* | -7.659 |
|  | (5.15) | (3.26) | (-1.66) | (-0.78) |
| CEO\_ID\_EXP\* Diversifying | -0.318 | -0.222 | 45.888 | 57.121 |
|  | (1.66) | (0.64) | (1.33) | (1.36) |
| OD\_ID\_EXP\* CEO\_ID\_EXP\* Diversifying |  | -0.448 |  | -61.687 |
|  |  | (0.53) |  | (-1.35) |
| Diversifying | -0.007 | -0.008 | 1.030 | 0.688 |
|  | (0.01) | (0.02) | (0.24) | (0.16) |
|  |  |  |  |  |
| Firm and deal controls | Yes | Yes | Yes | Yes |
| Year\*Industry dummies | Yes | Yes | Yes | Yes |
| N | 6,120 | 6,120 | 892 | 892 |
| R2 | 0.0733 | 0.0734 | 0.1582 | 0.1618 |

Table A.5

Industry Experience of Board, CEO, and Acquisition Performance – A Generalist CEO effect?

This table presents the regression results of the subsample where the Generalist CEO dummy is available. The Generalist and Specialist data are provided by the authors of Custodio *et al.* (2013) and span from fiscal years 1994 to 2007. The dependent variable in each column is the acquirer’s 3-day cumulative abnormal returns. Additional CEO controls are obtained from Execucomp. The initial sample consists of 6,178 completed M&A deals. Year-FF12 industry dummies are included. Significance is based on White-adjusted standard errors with t-stats reported below each coefficient. \*\*\*, \*\*, and \* denote the statistical significance at 1%, 5%, and 10% levels, respectively. Variable definitions are in appendix.

| Dependent Variable: CAR (-1, +1) (%) | Adding Generalist as a Control | | Replacing CEOs’ Experience with General Ability Index |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
| OD\_ID\_EXP\* Diversifying | 2.729\*\* | 1.356 | 1.618 |
|  | (2.43) | (1.35) | (0.92) |
| CEO\_ID\_EXP\* Diversifying | -0.541 | -2.636 | -0.564 |
|  | (-0.28) | (-1.28) | (-0.30) |
| OD\_ID\_EXP\* CEO\_ID\_EXP\* Diversifying |  | 9.687\*\* |  |
|  |  | (2.15) |  |
| OD\_ID\_EXP\* Generalist\* Diversifying |  |  | 0.897 |
|  |  |  | (0.43) |
| Generalist | 0.260 | 0.263 | 0.243 |
|  | (0.87) | (0.88) | (0.81) |
| Diversifying | -0.376 | -0.346 | -0.376 |
|  | (-1.20) | (-1.10) | (-1.20) |
|  |  |  |  |
| Firm and deal controls | Yes | Yes | Yes |
| CEO controls | Yes | Yes | Yes |
| Year\*Industry dummies | Yes | Yes | Yes |
| N | 2,068 | 2,068 | 2,068 |
| R2 | 0.0838 | 0.0891 | 0.0840 |

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5. In supplementary inquiry, we differentiate between executive and non-executive target industry board experience of all directors, inside and outside directors, and CEOs. For more discussions, please refer to the results, and Tables A.1 and A.2 in the appendix. [↑](#footnote-ref-5)
6. The lack of support for additive value of CEOs’ experience seemingly contradicts the findings of CM. Please refer to the results section for further discussion about the plausible reasons. [↑](#footnote-ref-6)
7. In the acquisition literature, overconfidence, age, and narcissism of CEOs have been linked to lower (“dark side”) acquisition announcement returns, propensity, and deal completion (Malmendier and Tate, 2008; Yim, 2013; Aktas, *et al.*, 2016). [↑](#footnote-ref-7)
8. For instance, CM (2013) consider only a CEO’s industry experience while Kroll *et al.* (2008) and Wang *et al.* (2015) consider only outside directors’ industry experience. [↑](#footnote-ref-8)
9. Industry experts can improve shareholder value through value-creation and value-capture activities. Though not reported, when examining the long-term performance of acquirers using ex-post accounting measures, we find no evidence that industry experts are better in creating value. However, our analysis of the initial market reaction returns shows that industry experts are able to capture value by negotiating better deals. This is consistent with the recent studies on the importance of negotiation and price setting mechanisms of the bidding process (Aktas *et al.*, 2010; Ahern and Sosyura, 2014). In this study, we focus our attention on announcement returns as a proxy for acquisition performance. [↑](#footnote-ref-9)
10. Though not reported, we find that active employment of board members in the target industry at the time of the acquisition has no significant impact on our main findings, suggesting that board experience captures more than the directors’ current and continuing business connections in the target industry; for example, industry-specific knowledge. We also argue that to the extent board members accumulate expert knowledge in making acquisitions in the target industry during their past employment as insiders in the same industry, such acquisition experience will be captured by our measure of industry experience. [↑](#footnote-ref-10)
11. CEOs who are industry insiders might appoint directors with connections to the target industry who might be helpful during negotiations. We conduct the two-stage Heckman test to correct for this selection bias but do not tabulate the results. [↑](#footnote-ref-11)
12. Three-digit and 2-digit SIC codes, and Fama French 49 (FF49) industry classifications are used in robustness tests. [↑](#footnote-ref-12)
13. Employment in private companies is excluded from our sample for two reasons. First, identifying a private firm’s industry codes would have been extremely time-consuming, given our large sample size. Second, experience obtained by outside directors while working as inside or executive directors in publicly-traded firms, which on average are large and complex, is likely to be more informative for our analyses. [↑](#footnote-ref-13)
14. We use inside and outside director classifications in BoardEx to refine and segregate the board industry experience variable into several categories: ALL\_ID\_EXP (ALL\_OD\_EXP) are boards with any director who has past inside (outside) director experience in the target industry; ID\_ALL\_EXP (ID\_ID\_EXP, ID\_OD\_EXP) are boards with any inside director who has any past director (inside or outside) experience in the target industry; and finally OD\_ALL\_EXP (OD\_ID\_EXP, OD\_OD\_EXP) are boards with any outside director who has any past director (inside or outside) experience in the target industry. The summary statistics and baseline regression results using these variables are reported in Tables A.1 and A.2 in the appendix. [↑](#footnote-ref-14)
15. Offer price premiums for public targets are obtained from SDC, which are used in Table A.4 in the appendix. [↑](#footnote-ref-15)
16. Delta and Vega are calculated based on the Coles *et al.* (2006) algorithm using Execucomp data. We thank Lalitha Naveen for providing the algorithm and data on her website <https://sites.temple.edu/lnaveen/data/> [↑](#footnote-ref-16)
17. For univariate results please see Table A.1. Tables A.1 and A.2 in the appendix show that not every form of experience is equally valuable. For instance, outside directors’ past experience only as executives in the target industry has a positive impact on acquisition performance. We find similar results for inside directors and CEOs. However, since research on group decision making suggests that the benefits would be derived from highly knowledgeable group members only when they have a significant influence in the decision making process, we focus our analysis on the impact of CEOs’ and outsiders’ past executive experience in the target industry throughout the paper. [↑](#footnote-ref-17)
18. Our results are robust in the diversifying subsample. Results are in the Panel B of Table 5. [↑](#footnote-ref-18)
19. Both CM and Wang *et al.* (2015) study large firms; bidders are included at least once in the S&P 1500 index and S&P 500 respectively within their sample period. Table A.3 in the appendix replicates the announcement return regressions for the S&P 1500 subsample. The results are consistent with our full sample results, showing that our main finding is not merely a small firm phenomenon. Table A.4 shows that avoidance of large loss and effective negotiation with targets might be the possible channels through which target industry experiences of boards, CEOs, and their interpersonal dynamics capture value in diversifying acquisitions. [↑](#footnote-ref-19)
20. Though not reported, we find consistent results using the G-index and the entrenchment index as corporate governance proxies. Requiring the G-index and the entrenchment index however reduces the sample size substantially. [↑](#footnote-ref-20)
21. We thank Stephen Brown for making estimates of PIN available on his website. <http://scholar.rhsmith.umd.edu/sbrown/pin-data> [↑](#footnote-ref-21)
22. In unreported analysis, we find that active employment of board members in target industry at the time of the acquisition does not drive our main findings, suggesting that board experience captures more than the directors’ current and continuing business connections in target industry. [↑](#footnote-ref-22)
23. Some suggest that trimming observations with extreme p(x) could eliminate poor matches across the control and treatment samples (Imbens and Wooldridge, 2007). However, the optimal level of trimming is difficult to determine (Lee *et al.*, 2011) and given that the probability of OD\_ID\_EXP = 1 is low in our sample, trimming may lead to a large loss of relevant observations, which could weaken the test. Nonetheless, our results are similar if we trim observations with p(X) outside of the interval [0.01, 0.99]. [↑](#footnote-ref-23)
24. Both public status and asset intangibility are used in the literature as metrics of information asymmetry (Aboody and Lev, 2000). Though not tabulated, we find that while experienced outsiders add value to acquisitions involving targets from high intangible asset industries, it is the collaboration between boards and CEOs who are both experts in the target industry that generates value for acquisitions involving targets from low intangible industries. These findings are consistent with the results involving private and public targets. [↑](#footnote-ref-24)
25. Data and measurements of CEO characteristics are described in section 2.3. [↑](#footnote-ref-25)
26. We control for general managerial ability and talent, measured by GAI, as a robustness check. Our findings remain unchanged. We also substitute the general ability of CEOs for industry experience to ensure that CEO-board shared industry experience does not merely capture the effect of generalist CEOs, and our findings are not driven by generalist CEOs’ superior ability to collaborate and integrate the diverse talent of board members. Table A.5 in the appendix reports the results. [↑](#footnote-ref-26)