The association between non-executive director compensation and industry expertise and M&A outcomes

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Abstract

There is an emerging literature which focuses on the role of non-executive directors (NEDs) in a number of corporate contexts. This study contributes to this literature by considering the compensation and industry expertise of NEDs in a merger and acquisition (M&A) context. Using a sample of 343 acquisitions between Australian publically listed firms during the years 2004-2011 we find that higher NED compensation has a negative association with both the bid premium and any subsequent increase in offer price, whilst having a positive association with the market reaction to the takeover announcement. In contrast, industry expertise is found to be negatively associated with the market reaction to the takeover and we do not find any associations between NED's industry expertise and the bid premium or changes in offer price. Our results are robust with respect to alternative econometric specifications and variable definitions.

Keywords: NEDs, Compensation, Industry Expertise, M&As, Bid premium, CAR, Market reaction.

1. Introduction

There is an emerging literature which focuses on the influence of non-executive directors' (NEDs) incentives, attributes and/or characteristics on various corporate decisions.[1] For example, Masulis and Mobbs (2014) argue that non-executive or independent directors prefer to sit on boards of more 'prestigious' and larger firms as it enhances their reputational capital. Additionally, Larcker, et al. (2013) suggests that the connectedness of NEDs matters and that it results in improved firm performance. This study builds on this stream of literature by examining the link between bidding firm NED compensation and industry expertise and different aspects of mergers and acquisitions (M&A). Specifically, our three objectives are to provide evidence on the association between NEDs' compensation and industry expertise and: (i) the takeover bid premium; (ii) the market reaction to the takeover announcement, and; (iii) a change in the offer price.

The motivation of this study is twofold. First, the incentive for NEDs to monitor executive managers arises from two sources: reputational capital incentive and compensation incentive. Recently, Masulis and Mobbs (2012) provide evidence that M&A activities enhance the reputational capital of NEDs as it increases the visibility of their directorship following the expansion of the firm. However, our contention is that compensation incentives also influence a NED's incentive to monitor executive management.[2] This contention is built on the assumption that the compensation which NEDs receive from different firms drives how

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[1] The following studies consider the influence of NEDs: Harford, (2003); Yermack, (2004); Linn and Park, (2005); Adams and Ferreira, (2008); Zattoni and Cuomo, (2010); Masulis and Mobbs, (2012); Masulis and Mobbs, (2014). The following studies consider the characteristics of NEDs: Vafeas, (2003); Balatbat, et al., (2004); Gul and Leung, (2004); Mura, (2007); Christensen, et al., (2010); Fahlenbrach, et al., (2010); Masulis, et al., (2012.)

[2] Although Masulis and Mobbs (2014) consider compensation for NEDs; their study is restricted to the period up to 2006 due to the lack of machine readable data in the U.S. In addition, the compensation data does not include any equity based compensation. Despite this, there is support for NEDs being less inclined to miss board meetings, as well as resign from the board when their compensation is higher.

they allocate their monitoring activities.[3] We test our contention in the M&A context since M&As represent a significant capital expenditure which requires enhanced board monitoring. NED monitoring around an M&A is particularly important as previous studies document that acquisitions are often value decreasing for bidding firm shareholders (e.g., Moeller, et al., 2004; Offenburg, 2009; Bugeja and Da Silva Rosa, 2010).

We study the relation between NEDs' compensation and M&A activities within the Australian setting for a number of reasons. First, recent evidence by Bugeja et al. (2014) indicates that the compensation of Australian NEDs is 'economically significant' as the average NEDs' compensation is 6% of the CEO's compensation. Further, ninety five percent of these firms have an independent director as the Chair of the Board, who on average receive almost twice the compensation of a NED. Finally, on average, the sum of the total compensation of NEDs is 136% of the compensation of the CEO.

Second, in the U.S. the duty of care for executive directors is higher than that for NEDs as the liability of NEDs is not well defined.[4] However, in Australia the Australian Corporations Act 2001 requires that all directors have a strict duty to act in the best interests of the company and to avoid conflicts of interest.[5] Third, there is a regulatory difference between Australia and the U.S in regards to M&A completion. Unlike the U.S., under the Australian Corporations Act (s652B) when a takeover is announced the bidder is unable to unilaterally withdraw their tender without the consent of ASIC. Finally, in the Australian setting the

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[3] This contention is supported by evidence which finds that NEDs board meeting attendance increases with the level of compensation (Masulis and Mobbs, 2014).

[4] Although NEDs may be prosecuted for certain misconduct (Vasilescu and Russello, 2006), their liability is not well defined in the U.S. According to Lin, et al. (2011), U.S. firms which provide their executives with higher insurance coverage, tend to be subject to lower takeover announcement abnormal stock returns and pay higher acquisition premiums.

[5] The SEC is only empowered to bring actions under the Federal Securities Law (Securities Act of 1933), which does not cover the fiduciary duties of directors. However, Australian directors can be prosecuted by the Australian Securities and Investments Commission (ASIC) for breaches of fiduciary duty under the Corporations Act 2001. This indicates that in an Australian setting both executives and NEDs are required to be fully informed of the actions of the firm.

bidder is given the opportunity to increase but not decrease the offer price. Considering the equal legal liabilities of NEDs and executive directors and the inability to withdraw a takeover offer, we expect that NEDs have a greater incentive in Australia to pay incremental attention to M&A activities compared to their U.S. counterparts. Accordingly, we provide evidence on the association between NEDs' compensation and different aspects of M&As within Australia.

The second motivation for this study is to build on recent evidence indicating that the different attributes and/or characteristics of NEDs matter. For example, evidence in Larcker, et al. (2013) suggests that the presence of connected NEDs leads to better corporate performance, and Taylor and Richardson (2014) find that the tax affiliation and expertise of board members reduces potential tax avoidance in the firm. Furthermore, Masulis, et al. (2012) find that due to their expertise within their geographic location, the presence of foreign NEDs results in better cross-border acquisitions.[6] We build on these findings and argue that NEDs' industry expertise matters during M&A activities. NEDs often hold multiple directorships and thus typically acquire expertise across a number of industries. This industry expertise would be relevant to the advising function of NEDs during M&As, particularly if they hold directorships in the same industry as the target.[7] At present however, the academic literature has been silent on the role of NEDs' industry expertise during M&A activities.[8] As prior studies have indicated that M&As are often value destroying the presence of a well-informed industry expert NED should reduce the possibility of the firm undertaking

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[6] However, findings in Khorana, et al. (2007) suggest that board industry expertise has no effect on the determinants of mergers within the mutual fund industry.

[7] Mizruchi, (1996); Mol, (2001); Luo, (2005).

[8] Notwithstanding the working paper of Mkrtchyan (2013) which considers the prior acquisition expertise of NEDs we are not aware of any other papers.

a value destroying acquisition.[9] Accordingly, we investigate the association between industry expertise of NEDs and different aspects of M&A activities.

This study is based on a sample of 343 M&As between Australian publicly listed companies from the year 2004 to 2011. M&A data, governance controls and financial statement data are all hand collected from either the takeover statements on the Connect 4 Merger and Acquisitions database or the annual reports on Morningstar DatAnalysis Premium database. NED compensation and industry expertise measures are based on data in the Connect 4 Boardroom database. Returns data was extracted from the SIRCA Limited and DataStream databases. All missing compensation, expertise and return observations were hand collected from either the annual reports, the disclosure of other directorships reported, or downloaded from the Morningstar DatAnalysis Premium database, respectively.[10]

We find that there is a statistically significant negative association between NEDs' compensation and the bid premium and subsequent increase in offer price. We also find a statistically positive association between NEDs' compensation and the market reaction to M&A announcements. These results are consistent with the compensation literature and suggest that NEDs are more likely to fulfil their monitoring duties to the board in the presence of greater compensation (Adams and Ferreira, 2008; Zattoni and Cuomo, 2010).

In regards to NEDs' industry expertise, our findings show no significant association between the industry expertise of NEDs and the bid premium or changes in offer price. However, the association between industry expertise and the market reaction to the takeover announcement is negative and statistically significant. These findings are inconsistent with those reported in the NEDs' characteristics and/or attributes literature (Masulis et al, 2012; Larcker, et al., 2013). The lack of significance for industry expertise could be explained by the possibility

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[9] Masulis et al, (2007); Paul, (2007).
[10] For further information on the data collection process, refer to Section 3.

that the firm draws on the industry expertise of their executives rather than NEDs. However, this alternative explanation is difficult to test as the disclosure of data on such attributes and activities is not available in machine readable form.

The results of this study are robust to various econometric specifications such as the use of alternate regression analysis to determine the influence of individual test variables, as well as clustering standard errors by year and industry.[11] The results are also robust to different definitions of bid premiums, the use of varying event windows to calculate market reactions and changes in offer price, various partitions of the sample for bid premiums, and using alternative proxies for NEDs' compensation and industry expertise.

The findings of this study contribute to the growing body of literature on the influence of NEDs' compensation incentives. Whilst Adams and Ferreira (2008) and Masulis and Mobbs (2014) find that NEDs' attendance at board meetings increases with higher meeting fees, they do not document whether greater NED compensation improves firm monitoring and results in positive economic consequences. We provide direct evidence that higher NED compensation results in better outcomes for bidding firm shareholders around an M&A. Specifically, our findings suggest that NEDs' compensation is successful in reducing the bid premium during acquisitions and that the shareholders' reaction is favourably related to higher levels of compensation. The negative association with changes in offer price suggests that NEDs' compensation also reduces the likelihood of pursuing a value-destroying acquisition.[12] Furthermore, we contribute to the literature which examines the importance of NEDs' attributes. Our results suggest that industry expertise may not be relevant in an M&A context as this expertise can be brought to the board by executives and/or external advisors. Overall,

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[11] When clustering the size of the various clusters individually should not exceed 5-10% of the sample size and there should be at least 20 balanced clusters, as this may influence the outcome of the results (Rogers, 1993; Nichols and Schaffer, 2007).

[12] This is consistent with prior literature which indicates that NEDs reduce the likelihood of completion of value reducing bids (Paul, 2007).

our findings provide an opportunity for future research to examine alternative explanations for the effects of NEDs' industry expertise and to extend the findings on the influence of their compensation to other corporate contexts.

The remainder of this paper is structured as follows. Section 2 develops the theory on the influence of NEDs and their characteristics, as well as establishing the hypotheses. Section 3 details the research design and Section 4 discusses the sample collection and provides descriptive statistics. Sections 5 and 6 include a discussion of the results and sensitivity testing. Finally, Sections 7 and 8 highlight the limitations of the study and concludes.

2. Literature Review and hypotheses development

2.1 Prior evidence on M&As

NEDs have a responsibility to monitor and advise executives as part of their fiduciary duty to shareholders (Fama and Jensen, 1983). It has been argued in prior literature that owners (shareholders) and managers (the board of directors) have misaligned incentives; hence NEDs are expected to be objective monitors (Armstrong, et al., 2010) and reduce the divergence of interests between shareholders and management (Jensen and Meckling, 1976; Williamson, 1984). As M&A activities tend to be the largest and most observable form of capital expenditure a firm undertakes, much of the current literature on NEDs examines their influence within an M&A context.[13] Furthermore, prior literature has indicated that M&As often result in a loss of shareholder wealth, highlighting the importance of increased attention from all directors at the board level, in particular from NEDs.[14]

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[13] Cotter, et al., (1997); Shleifer and Vishny, (1997); Bange and Mazzeo, (2004); Moeller, et al., (2005); Paul, (2007); Masulis, et al., (2007); Bugeja, (2009); Masulis and Mobbs, (2011); Masulis, et al., (2012).
[14] Moeller, et al., (2004); Moeller, et al., (2005); Offenburg, (2009); Bugeja and Da Silva Rosa, (2010), Harford et al., (2012).

Although it is expected that the bidding firm's board pays greater attention during the acquisition process, prior research is consistent with many takeovers having excessive bid premiums.[15] Specifically, bid premiums may be higher in the presence of hubris on the part of managers (Roll, 1986), as well as entrenched executives on the bidder's board (Masulis et al 2007; Harford, et al., 2012). This over-payment has the potential to result in a significant wealth transfer from the shareholders of the bidder to those of the target firm. Australian evidence is also indicative of the presence of self-interest and hubris on the part of managers, as corporate acquisitions are not associated with improvements in post-acquisition performance, measured using both accrual and cash flow performance indicators (Sharma and Ho, 2002).

Research has also highlighted the importance of NEDs' reputational capital and compensation when deciding whether to undertake an acquisition.[16] For example, Masulis and Mobbs (2012) demonstrate that despite the association with wealth reduction, NEDs are more inclined to undertake an acquisition to increase their reputational capital. Additionally, results in Deutsch, et al. (2007) suggest that the proportion of NEDs' compensation paid as stock increases a firm's acquisition activity.

Prior research has reported that the initial market reaction to a takeover is an indication of the expected success of the merger, as negative market reactions tend to be associated with unsuccessful acquisitions.[17] Within both the U.S. and Australian contexts, powerful CEOs have been reported as more likely to engage in acquisitions in order to increase their compensation, despite the acquisition's association with negative market reactions (Grinstein and Hribar, 2004; Bugeja, et al., 2012). As seen in Certo, et al. (2008), NEDs are likely to

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[15] Harford, (2003); Paul, (2007).

[16] Prior literature has indicated the value to shareholders from having NEDs on the board of the target firm. In particular, Cotter, et al. (1997) report on the ability of NEDs to identify wealth-reducing acquisitions. This was found to enhance shareholder wealth as they are able to make more informed responses to takeover offers.

[17] Luo, (2005); Paul, (2007); Masulis et al, (2007).

support this behaviour and increase their own compensation following an acquisition. Relative to a matched sample, these NEDs were found to earn more than twice as much as their counterparts in the post-acquisition period. Similarly, descriptive evidence in Khorana et al (2007) also suggests that bidding firm directors have a greater positive change in compensation relative to directors on the target firm in across-family mutual fund mergers.

These findings suggest that the decision to undertake a bid in the presence of potential value destruction may be the result of management's self-interest, rather than the interest of shareholders (Harford and Li, 2007). Recent evidence also shows that the bidding firm CEO and directors are rewarded with higher future directorships for the experience attained from an acquisition even if the M&A reduces shareholder wealth (Harford and Schonlau, 2013). Despite this, the presence of NEDs has been found to reduce the likelihood of undertaking bad acquisitions. For example, Byrd and Hickman (1992) find that bidders with majority NEDs have higher announcement abnormal returns when compared to those with less than 50% NEDs, and more recently Masulis et al (2012) reveal the positive association between M&A outcomes and the presence of foreign NEDs.

Previous studies have also examined whether directors learn from the announcement reaction when deciding whether to complete or increase the offer price in an acquisition. Upon observing a negative market reaction, NEDs are placed in a position where their motivation to act in the best interest of shareholders and avoid over-paying for a value reducing acquisition are at play. Researchers have provided conflicting evidence on the association between completion of an acquisition and the bidding firm market reaction. For example, Paul (2007) suggests that NEDs reduce the possibility of undertaking a value decreasing acquisition within a U.S. setting. However, Bugeja (2009) finds that in an Australian context they make no difference.

Overall, research has highlighted the influence of NEDs' in both the decision to undertake an acquisition as well as the overall outcome. Ultimately, the incentive of NEDs to monitor and advise the board are not limited to reducing the negative effects on shareholder's wealth, but are also driven by their own reputational capital and compensation.[18] Despite this, the effects of NEDs' compensation and industry expertise are yet to be directly considered within an M&A context.

2.2 Hypothesis Development

Higher bid premiums are associated with a significant wealth transfer from the bidder to the target firm's shareholders. As NEDs are required to monitor and advise executives, there is an expectation that their presence lowers the probability of the bidder over-paying for the target firm and thus leads to lower bid premiums (Masulis et al, 2007; Paul, 2007). Research also suggests that the presence of self-interested CEOs (Harford and Li, 2007) and/or entrenched inside executives on the board, are usually associated with offering higher premiums (Harford, et al., 2012). Following prior findings that NEDs are likely to perform for financial rewards (Adams and Ferreria, 2008; Masulis and Mobbs, 2014), it is expected that greater NED compensation increases their incentive to monitor firm executives and thus aligns their interests with shareholders. In an M&A context, we thus expect that higher NED compensation lowers the likelihood that bidding firm management overpays for the target firm. Furthermore, it is also expected that a firm is less likely to overpay when its NEDs have industry expertise due to the board's greater ability to identify the sources of value in the M&A. Accordingly, it is predicted that:

H1: The takeover bid premium is negatively associated with NEDs' compensation and industry expertise.

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[18] Sharma and Ho, (2002); Grinstein and Hribar, (2004); Deutsch, et al., (2007); Paul, (2007); Bugeja, et al., (2012); Masulis and Mobbs, (2012).

Highlighting the value destructing nature of M&As, research has provided evidence suggesting that the bidder's market reaction to a takeover announcement is often negative (Masulis et al, 2007; Paul, 2007; Bugeja, 2009;). In addition, Luo (2005) suggests that the market reaction to the takeover announcement is a significant factor in determining the future success of the merger, as findings indicate that deal completion is positively related to the market return around the takeover announcement. Although NEDs have been found to have a positive influence on the market reaction to a takeover announcement (Byrd and Hickman, 1992; Masulis et al, 2012), prior research has not examined the influence of the compensation and industry expertise of NEDs. We argue that increased monitoring driven by compensation, and access to industry specific knowledge, allows NEDs to make well informed M&A decisions which are viewed favourably by the market. Accordingly, it is predicted that:

H2: The market reaction to the bidders' announcement of an M&A is positively associated with NEDs' compensation and industry expertise.

Following an acquisition announcement, the bidding firm directors observe the markets' reaction to the takeover. If NEDs have shareholders' welfare in mind, this reaction should be an important consideration for subsequent decisions on whether to increase the price or complete the acquisition. This brings the monitoring and advising functions of NEDs to the forefront as they are expected to make decisions in the interests of shareholders. Prior research has documented negative stock market reactions to withdrawn M&A proposals (Dodd, 1980), and positive stock market reactions if there is a greater probability of the merger taking place (Asquith, 1983). Despite prior research testing the completion of the M&A as a measure of its success (Paul, 2007), the use of this measure does not capture the reasons for non-completion, such as shareholder disapproval or the target firm rejecting the offer. As the Australian setting prevents the option to withdraw a takeover, this study takes advantage of a test that considers the option to increase the offer price following a negative

market reaction, instead of the completion measure. It is expected that when NEDs are paid greater compensation and possess industry expertise, their enhanced monitoring and advising reduces the likelihood of making a decision to increase the offer price in a value reducing acquisition (Paul, 2007; Masulis et al, 2007). Accordingly, it is predicted that:

H3: An increase in the offer price for an acquisition following a negative market reaction to the takeover announcement, is negatively associated with NEDs' compensation and industry expertise.

We provide evidence on these three hypotheses below.

3. Research Design and Variable Measurement

To examine the hypothesised relations between NEDs' compensation, industry expertise and the alternate dependent variables, the following ordinary least-squares or logit model is estimated:

Dependent Var. $= \beta_0 + \beta_1$ *Compensation* $+ \beta_2$ *Industry Expertise*

$$+ \sum \beta_h \text{ Bidder Characteristics} + \sum \beta_i \text{ Target Characteristics}$$

$$+ \sum \beta_j \text{ Deal Characteristics}_i + \sum \beta_k \text{ Board Characteristics}_i$$

$$+ \sum \beta_l \text{ Industry Indicators}_i + \sum \beta_m \text{ Year Indicators}_i + \varepsilon_i$$

The alternate dependent variables consist of Bid Premium, Cumulative Abnormal Returns (CARs), and the Change in Offer Price (COP). Bid Premium is defined as the ratio of the final or initial offer price to the target stock price eight weeks prior to the initial merger announcement date minus one. CARs are measured using three and five day event windows,

from days -1 to +1 and -2 to +2, respectively, where t = 0 is the takeover announcement day. Abnormal returns are calculated using market adjusted returns.[19] Finally, COP is defined as an indicator variable equal to one for takeovers in which there was an increase in the offer price following a negative market reaction to the initial takeover announcement. The positive and negative COP partitions are split based on the direction of the 3-day CARs.

3.1 Compensation and Industry Expertise Measures

Adams and Ferreira (2008) consider the impact of compensation for busy directors by examining the influence of board attendance fees on their subsequent board meeting attendance. More recently, Masulis and Mobbs (2014) develop a measure of NEDs' reputational capital by ranking their portfolio of directorships using the market capitalisation of each firm. They indirectly determine the influence of NED compensation by studying the association between this ranking and subsequent board attendance. The measure used in this study is the average NED compensation relative to the CEO's compensation (*NED to CEO comp*). This measure is important as at times the compensation of NEDs is in aggregate greater than that of the CEO.[20] Additionally, the size of this measure highlights the relative worth a firm places on NEDs relative to the CEO. A higher ratio indicates the greater importance the firm places on their NEDs individually. In contrast a lower ratio suggests that the perceived importance of the input of NEDs is of lesser value.[21]

Recent studies have considered the expertise of NEDs using their geographic location (Masulis et al, 2007), the 'connectedness' of the directors (Larcker et al, 2013) as well as prior director experience (Gray and Nowland, 2013). However, we develop an alternative measure similar to that in Khorana et al (2007) that allows for a test of whether current

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[19] Thinly traded stocks are dealt with using the 'lumped' method outlined in Kallunki (1997) and Maynes and Rumsey (1993), where non-trading days are assigned a zero return.
[20] Based on findings in Bugeja, et al. (2014).
[21] We test the robustness of our results to our alternative measures of NED compensation in Section 6.

industry expertise influences M&A activities. This measure is an indicator variable (*Ind. Expert NEDs*) coded as one if any NED on the bidding firm board holds a current directorship on another board that is in the same industry as the target firm (based on 4-digit GICS codes). It is predicted that with appropriate industry knowledge, NEDs have the ability to identify value-decreasing acquisitions and act accordingly (Masulis et al, 2007; Paul, 2007).

3.2 Control variables

In addition to the key variables, a set of controls based on prior M&A research are included in the models. [22] Financial controls are measured at the end of the financial year prior to the takeover announcement and industry and year indicators are used to control for industry and year effects respectively.

3.2.1 Bidder Controls

The bidder firm characteristics controlled for are the firm's leverage and market-to-book ratio. Following prior literature, leverage is included as a control (*Leverage*) as it is expected to be related to the future free cash flow of the firm (Masulis et al, 2007). Additionally, higher leverage tends to deter management from undertaking value reducing acquisitions (Humphery-Jenner and Powell, 2011), therefore suggesting a positive association with CARs. Leverage is measured as the ratio of total debt to total assets for the bidding firm as at balance date in the year prior to the acquisition. Overall, predictions suggest that *Leverage* is negatively associated with the bid premium and COP, and has a positive association with CARs.

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[22] See Cotter et al, (1997); Harford, (2003); Moeller et al, (2004); Masulis et al, (2007); Paul, (2007); Harford et al (2012).

Consistent with Masulis et al (2007) the market-to-book ratio is also included, controlling for the use of overvalued equity in an acquisition (*Market to Book*). This variable is measured as the ratio of market capitalisation to the book value of equity of the bidding firm at balance date in the year prior to the acquisition. Market capitalisation is calculated as the number of shares taken from the takeover statements multiplied by the bidders' share price at balance date in the previous financial year. *Market to Book* is expected to have a positive association with the bid premium and COP, and be negatively associated with CARs.

3.2.2 Target Controls

The target firm characteristics included as controls are the firm's performance and free cash flow. As indicated in Jensen (1986), firms are more likely to have agency problems in the presence of free cash flow. Therefore, we control for the difference between cash flow from operations and cash flow from investments scaled by total assets for the target firm, for the year prior to the acquisition (*FCF*). It is expected that the greater the FCF of the target, the more the bidder is required to pay. Additionally, there is a higher likelihood of the bidder increasing the offer price in order to acquire the firm. Therefore, *FCF* is expected to be positively associated with the bid premium, CARs and COP.

Masulis et al (2007) indicates the need to control for better recent target firm performance. Accordingly, we include the ratio of net profit to total assets for the target firm (*ROA*), measured for the year prior to the acquisition. It is expected that a well performing target firm would require an offer with a higher premium in order to recommend the acceptance of the offer. Additionally, a positive market reaction is expected for profitable target firms as these acquisitions are more likely to further improve firm performance post-acquisition. Therefore, *ROA* is expected to be positively associated with the bid premium, CARs and COP.

3.2.3 Deal Controls

Consistent with prior M&A literature we utilize deal characteristic controls including: takeover hostility, toehold, method of payment, relative size, and whether multiple firms are competing for the same target firm. Hostile takeovers are controlled for due to their association with higher premiums and lower CARs (Humphery-Jenner and Powell, 2011). These acquisitions are identified using an indicator variable taking the value of one if the initial recommendation by the target firm board (as per the takeover statements) is to reject the takeover offer, and zero otherwise (*Hostile*). It is expected that a positive association exists between this variable and the bid premium and COP; however a negative association is predicted with CARs.

Masulis et al (2007) indicate that the method of payment has implications for the gains of shareholders, with equity financed acquisitions resulting in the lowest gains. The method of payment is controlled for using a binary variable (*AllCash*) equal to one if the acquirer makes a pure cash offer and zero otherwise. The method of payment is based on disclosure in the takeover statements (Paul, 2007; Harford et al, 2012). When the offer involves exclusively cash, it is expected that the bidding firm's board reduces the cash amount offered during the acquisition (Moeller et al, 2004). Further, it has been reported that cash offers result in positive CARs (Humphery-Jenner and Powell, 2011). Accordingly, a negative association is expected between the use of cash consideration and the bid premium and COP, and a positive association is expected with CARs

Relative deal size is controlled for using the ratio of the target to bidding firm's market capitalisation (*Relative Size*). Relative size is expected to be negatively associated with CARs (Masulis et al, 2007; Paul, 2007). Market capitalisation is calculated as the number of shares, taken from the takeover statements multiplied by the respective share price at balance date in

the previous financial year. It is expected that due to comparative bargaining power, an increase in relative size may be expected to result in higher bid premiums and a greater frequency of revisions in the offer price. As such, it is predicted that *Relative Size* is positively associated with the bid premium and the COP, and has a negative association with CARs.

A higher toehold is expected to reduce the takeover premium as the quantity of shares to be purchased is reduced (Stulz, 1988; Stulz et al. 1990). Toehold is measured as the percentage share ownership of the bidding firm in the target firm at the date of the announcement of the acquisition (*Toehold*), as reported in the takeover statements. A negative association is expected with the bid premium and the COP, and a positive association with CARs.

Further, as premiums are expected to be higher in the presence of a competing bid an indicator variable is also included for the presence of multiple bidders for the same target. The variable takes a value of one to indicate the presence of multiple bids for the same firm within a six month period of the takeover announcement (*Competing*), and zero otherwise. Competing takeovers may be viewed unfavourably by the market due to the potential for excessive bid premiums (Paul, 2007). *Competing* is therefore predicted to be positively associated with the bid premium and COP, however have a negative association with CARs.

Overall, it is expected that *Hostile*, *Competing* and *Relative Size* are positively associated with the bid premium and COP and have a negative association with CARs. Whilst *All Cash* and *Toehold* are both expected to be negatively associated with the bid premium and the COP, and have a positive association with CARs.

3.2.4 Bidder Board Controls

As previously indicated, high agency costs and information asymmetry for bidding firms are expected at the time of an M&A; hence the monitoring function of the firm's board is of importance in such a setting. In particular, the size and composition of the bidding board is expected to have an impact on the effectiveness of the board's monitoring. Board size is controlled for as larger boards tend to be associated with less monitoring of management (Linck, et al., 2008) and hence compromised shareholder interests. Additionally, Moeller et al (2004) find that bidders with larger boards pay higher premiums. The board size measure represents the number of directors on the board at the date of the acquisition, as reported in the takeover statements (*Board Size*). However, the association between board size and the M&A outcome is ambiguous, as Paul (2007) reveals that there is no support for smaller boards being less likely to complete value decreasing bids. Therefore no prediction is made for the association between *Board Size* and CARs or COP.

As the presence of NEDs is expected to decrease the probability of undertaking a value-decreasing acquisition (Masulis et al, 2007), a control is included for the percentage of NEDs on the bidding board (*NED*). This is measured as the ratio of the number of NEDs to total board size, as reported in the takeover statements. It is expected that the association with bid premium and COP is negative, whilst having a positive association with CARs.

In addition, a control for bidding firm director ownership is included as prior literature has indicated that it is positively aligned with shareholder wealth, and therefore has an impact on the directors' decision to undertake a value decreasing acquisition (Fich and Shivdasani, 2005). This is measured as the percentage share ownership of the bidding firm directors at the announcement of the acquisition (*Dir. Ownership*), as reported within the takeover

statements. *Dir. Ownership* is predicted to be negatively associated with the bid premium and COP, whilst having a positive association with CARs.

3.2.5 Year and Industry Fixed Effects

To control for year and industry fixed effects dummy variables are added to each model. The industry dummy is based on the two digit GICS code of the target firm. The results on these dummy variables are not tabulated in the results which follow.

4 Sample and Data

4.1 Sample

An initial sample of 688 takeovers of Australian publically listed companies between the years 2004 and 2011 is identified from the Connect 4 Mergers and Acquisitions database. All financial statement information to calculate the bidder and target variables are hand collected from the annual reports of these companies for the financial year preceding the acquisition announcement date. M&A data for control variables and the offer price for calculating bid premiums were also hand collected from the takeover statements provided on the Connect 4 Mergers and Acquisitions database. NED compensation for the bidding firm was downloaded from the Connect 4 Boardroom database for the year prior to the acquisition, with director level data for 120 missing firm observations being hand collected from the respective annual reports. NEDs' compensation for other directorships (i.e., non-bidding firms) were matched based on NED name and was limited to those directorships found within the Connect 4 Boardroom database. Additional directorships were used to measure industry expertise for bidding firm NEDs and were also matched based on name within the Connect 4 Boardroom database for the year of the acquisition. Any missing data for the director expertise observations are hand collected, where available, from the disclosure of other directorships in

the annual reports, as well as disclosure reported in the Morningstar DatAnalysis Premium database. Returns data were extracted from the SIRCA Limited and DataStream databases with data for 130 missing observations being individually downloaded from Morningstar DatAnalysis Premium.

To be included in the final sample both the target and bidding firm must be Australian listed companies. Following the application of this data restriction the usable sample consisted of 343 M&As. Observations were excluded from testing in the respective models if they were missing required data. A breakdown of the sample selection process is provided in Panel A of Table 1.

(Insert Table 1 about here)

Panel B of Table 1 provides a distribution of firms by calendar year. The sample is not concentrated in any particular year, with the lowest frequency in 2011 (8.16%) and the highest in 2007 (18.37%). Panel C of Table 1 reports the annual frequency of takeovers based on the target firm two digit GICS classification. The Materials industry comprises the greatest proportion of firms within the sample (29.74%) and also consistently represents the largest proportion of the sample across each year except 2004. Additionally, the industry with the lowest representation is Utilities (1.17%), followed by Telecommunications (2.62%).

4.2 Descriptive Statistics

Table 2 reports the descriptive statistics for the total sample, with compensation measures and bidder and target firm controls being winsorised at the 5% level.

 (Insert Table 2 about here)

Panel A provides the descriptive statistics for the dependent variables. The average *Bid Premium* is 69% with an average *CAR* of 0.6%.[23] These levels are consistent with those in prior literature (Masulis et al, 2007; Harford et al, 2012). There is a change in offer price (*COP*) in 8.2% of the sample, with the positive and negative partitions suggesting that on average a slightly greater likelihood of the offer price increasing within the positive partition. Panel B presents the statistics for the key test variables with compensation measures winsorised at the 5% level. The average *NED to CEO comp* is 7.96%, whilst 87% of the boards have at least one industry expert.[24]

Panel C reports the descriptive statistics for the control variables. The average *Market to Book* of the bidding firm is 2.735 and the *Relative Size* measure indicates that on average the target firm's market capitalisation is 54% of that for the bidding firm. On average the bidding firm has six directors on their board, with 70% of the board being comprised of NEDs. This is similar to the board composition in Harford et al, (2012). Overall, the values for the descriptive statistics are consistent with prior literature.

Table 3 displays the correlation matrix for all the variables.

(Insert Table 3 about here)

The largest correlation which exists between variables within the same regression is that between *Board Size* and the *NED to CEO comp* compensation variable (-0.44). Therefore there does not appear to be any multicollinearity concerns with the estimation of the regression models.[25] The correlations between the compensation measure and the dependent

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[23] The extremely negative premium of -0.99 reported for the minimum is for Kingsgate Consolidated Ltd's successful acquisition of Dominion Mining Ltd in 2010 announced on 25th of October 2010. The share price was 1.98 with a final offer price for the acquisition of 0.01.

[24] The average level of NED compensation reported in Connect4 and with our supplementary data collection is $87,344. The average level of total compensation received from a NED's portfolio of directorships is $161,158.

[25] In order to confirm this, VIF diagnostic testing were conducted for all regressions and this confirmed no significant multicollinearity was present.

variables are in the predicted directions with correlations ranging between -0.1217 to 0.1114, however the COP total and negative partitions are not significant. Furthermore, the industry expertise measure is correlated in the opposite directions to predictions for bid premium (0.006) and CARs (-0.088); whilst the correlation with COP (-0.01) is as predicted, however all associations are insignificant. Overall, this preliminary evidence suggests support for the hypotheses in respect to NED compensation; however it is inconsistent with the hypotheses for industry expertise.

5. Results

5.1 Results for Hypothesis 1

Table 4 reports the results of the OLS regression for the association between NED compensation and industry expertise and the size of the bid premium.[26] Column (1) reports the results using the final offer price to calculate the premium, whilst column (2) presents results using the initial premium.

(Insert Table 4 about here)

The R-squared of the OLS regressions is 6% and 8.36%, with F-statistics of 2.04 and 2.25, respectively, indicating that both regressions are significant. The compensation variable of interest is *NED to CEO comp,* with results in column (1) highlighting that the coefficient for *NED to CEO comp* of -1.803 is significant at the 10% level. Similarly results in column (2) are consistent with this, indicating a coefficient of -1.931, also significant at the 10% level. These findings indicate that higher compensation of NEDs is associated with lower takeover premiums. These findings are as predicted and consistent with those in Adams and Ferreira

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[26] In order to check for the presence of heteroskedasticity, both the Whites (1980) and Breusch-Pagan (1979) tests were conducted. Results indicated that there was no evidence to reject the presence of homoskedasticity. Therefore heteroskedasticity is not an issue within any of these main regressions.

(2008) where NEDs perform for financial rewards, suggesting that on average the compensation of NEDs' are significant in influencing their monitoring role to the board.

The industry expertise measure is an indicator variable, taking the value of one in the presence of a NED with other directorships in the same industry as the target firm, and zero otherwise. The results indicate that *Industry Expert NEDs* has a coefficient of 0.097 and 0.098, respectively, and is not significantly different from zero in either of the two columns. Overall, the results show that the industry expertise of NEDs is not associated with takeover premiums, which is inconsistent with our predictions. This could be attributable to the expertise of executives who may or may not be on the board. However, these alternative explanations are difficult to test empirically (due to a lack of machine readable data) and are therefore outside the scope of this study.

The control variables that are significant are consistent with those in prior literature, and unless otherwise specified, apply to both columns (1) and (2). *Dir. Ownership* is significantly negative consistent with predictions, suggesting that greater ownership of bidding firm directors results in lower premiums (Masulis et al, 2012). Inconsistent with the findings in Moeller et al (2004), *Board Size* is negatively associated with bid premiums, indicating that as the board size of the bidder increases, the premium paid is reduced. The positive association between *Hostile* and the bid premium suggests that hostile takeovers result in higher premiums, as predicted. The *Relative Size* of the acquisition is statistically insignificant, inconsistent with the findings in Humphery-Jenner and Powell (2011). Also, inconsistent with predictions *FCF* is not significantly associated with bid premiums. Finally, *Market to Book* and *All Cash* appear to be significantly positive and negative, respectively, for results in column (2) however, are insignificant in column (1).

In summary, the results provide partial support for H1 with NED compensation being effective in reducing the bid premium. However, inconsistent with predictions, the results on industry expertise indicate that industry expert NEDs have no association with bid premiums.

5.2 Results for Hypothesis 2

Table 5 reports the results of the OLS regression for the association between compensation and industry expertise and the market reaction to the takeover announcement. The results in column (1) consider the 3-day CAR, with results in column (2) reporting the results for the 5-day CAR.

(Insert Table 5 about here)

The R-squared of the OLS regression is 9.30% and 13.49%, with F-statistics of 5.59 and 4.67, respectively, indicating both regressions are significant at the 1% level. The compensation variable of interest is *NED to CEO comp.* The results highlight that the coefficient for *NED to CEO comp* of 0.178 is significant at the 10% level in column (1) and 0.335 and significant at the 1% level in column (2); suggesting that the market reaction to the takeover is higher in the presence of a greater level of compensation for NEDs. These findings are as predicted and consistent with those in Byrd and Hickman (1992) and Masulis et al (2012), who find that NEDs have a positive influence on the market reaction. However, the findings in this paper extend these results by indicating the influence of NEDs is likely to be a result of the level of their compensation.

The results in column (1) indicate that the *Industry Expert NEDs'* coefficient of -0.051 is significant at the 1% level; however this variable is insignificant in column (2). Inconsistent with predictions, the industry expertise of NEDs has a negative association with the market reaction in column (1). Our findings indicate that the presence of industry expert NEDs either

has no association with the market reaction or results in lower bidding firm abnormal returns. These results indicate that the share market does not view the advice of industry experts as value-adding in M&As and are contrary to the effect of foreign NEDs documented in Masulis et al. (2012).

The only control variable that is significant across both columns is *Dir. Ownership.* This result suggests that in the presence of higher director shareholdings the market reaction to the takeover is negative, inconsistent with predictions. Unexpectedly, *Market to Book,* is insignificant, suggesting no association with the size of the market reaction to the takeover, inconsistent with the overvalued bidder findings in Rau and Vermaelen (1998). The *Relative Size* of the acquisition has no association with the market reaction in column (1), consistent with the findings in Harford et al (2012); whilst having a positive association with the market reaction in column (2) consistent with Masulis et al (2007). Finally, Column (2) reports *Competing* is positively associated with the market reaction to the takeover announcement, inconsistent with expectations (Paul, 2007). One possible explanation is that when there is competing bidders for a target firm this signals greater possible performance improvements post- acquisition.

In summary, the results provide partial support for H2 with higher compensation found to be positively associated with bidding firm CARs. However, the results on industry expertise indicate that they are associated with a negative market reaction on average, inconsistent with predictions.

5.3 Results for Hypothesis 3

Table 6 reports the results of the logit regression examining the association between compensation and industry expertise and a change in the offer price for an acquisition bid.

Column (1) reports the results of the logit regression for the change in offer price following a negative market reaction for the total sample. Columns (2) and (3) report the results respectively of the logit regressions for the COP split into positive and negative partitions based on the sign of the market reaction.

(Insert Table 6 about here)

Table 6 reports a Pseudo R-squared ranging from 39.46 to 61.14%, with the Chi-sqaure statistic ranging from 58.93 to 233.98 indicating the regressions are all significant at the 1% level. In column (1) the compensation variable of interest is *NED to CEO comp.* The findings indicate that the coefficient for *NED to CEO comp* is -18.372 and significant at the 5% level. In column (2), the coefficient of -49.950 is significant at the 1% level, in column (3) the same variable reports a coefficient of -20.431 and is significant at the 10% level. These findings suggest that the greater the NEDs' compensation the less likely they are to increase the offer price in a value reducing acquisition. This is supportive of the findings in Masulis and Mobbs (2014) where NEDs are likely to pay more attention in the presence of higher compensation through increased board attendance, therefore having a positive influence over the decision to prevent an increase in the offer price.

Results indicate that the *Industry Expert NEDs'* coefficients are all insignificantly different from zero. Overall, the results show that the industry expertise of NEDs has no association with the change in offer price. This suggests that industry expert NEDs do not affect the decision on whether to increase the offer price following a negative market reaction.

Only one control is consistently significant across all three tests; *Hostile* which is positively associated with the change in offer price. This finding suggests that following a reject recommendation by the target firm's board there is more likely to be an increase in the offer price by the bidding firm. Inconsistent with expectations, the *3-day CARs* have a negative

association with the decision to revise the offer price for the complete sample in column (1). This suggests that the bidding firm does not learn from the announcement reaction when deciding whether to increase the offer price. *FCF* is negatively associated with the change in offer price as indicated in column (1), suggesting that the presence of a targets' excess FCF reduces the likelihood of an increase in the offer price. However, consistent with predictions *FCF* is positively associated with the likelihood of an increase in offer price in column (2). *Board Size* is significant in column (1) indicating that larger boards are less likely to increase the offer price following a negative market reaction. This is consistent with Paul (2007) where no support is found for smaller boards being less likely to complete value decreasing bids; and inconsistent with the notion of ineffective monitoring and shirking behaviours common to large boards (Alchian and Demsetz, 1972; Moeller et al, 2004; Linck et al, 2008).

In summary, the results again indicate only partial support for H3. NEDs' compensation is found to be consistently effective in reducing the likelihood of an increase in the offer price. However, inconsistent with predictions, the results on industry expertise indicate that they have no association with preventing a COP.

6. Sensitivity Tests

A number of sensitivity tests are performed to test the robustness of the results in this study. First, we test compensation and industry expertise separately and results remain unchanged. Second, we cluster standard errors by industry and year to control for serial correlation and heteroskedasticity and our results remain consistent. Third, we measure industry expertise using a continuous variable that captures the proportion of NEDs that are experts, rather than an indicator variable. This measure is also not related to any of the dependent variables apart from a positive and significant relation with the bid premium. Fourth, we consider alternative

proxies for NEDs' compensation including: a ratio of the highest paid NED's compensation to the CEO's compensation; the ratio of Chairperson's compensation to the CEO's compensation, and the ratio of total NEDs' compensation to the CEO's compensation. The findings hold for these alternative measures. Fifth, we repeat our tests after partitioning the sample based on 2-digit GICS and results suggest that the key findings are not a product of dominant industries within the sample. Finally, we perform a logit regression that tests the association between the success of an acquisition and the compensation and industry expertise of NEDs. Neither test variables have an association with M&A success; however, NEDs' compensation is positively and significantly associated with successful acquisitions when there is no change in offer price.

7. Conclusion

This study examines the effects of NEDs' compensation and industry expertise in the context of M&As. Based on a sample of 343 acquisitions between Australian listed companies for the period between 2004-2011 we find that higher NED compensation is significant in reducing the bid premium and results in higher bidding firm CARs. Furthermore, the effects on COP suggest that the presence of appropriate NED compensation reduces the likelihood that a firm will revise their offer and overpay for a target firm. Furthermore, we find that although NED industry expertise significantly lowers the market reaction to the takeover, it has no effect on the size of the bid premium or the decision to increase the offer price. These results are robust to a number of sensitivity tests. Overall, our findings provide support for recent studies which examine different effects of NED compensation. In contrast, our results indicate that NED expertise has no positive economic consequences.

These findings are subject to a number of limitations. First, the sample is limited to the acquisitions reported within the Connect4 Mergers and Acquisitions database, and to those in which the both the bidder and the target are Australian listed companies. As a result the findings may be limited to the Australian setting. In order to provide more generalisable results similar studies may be conducted within other institutional settings. Second, the influence of any external acquisition advice to the firm is outside the scope of this study and thus provides opportunity for future researchers to examine these possible alternative explanations for the lack of results regarding NED industry expertise. Our results suggest it may be fruitful for future research to examine the impact of NED compensation on board decision making in other contexts. It may also be worthwhile for future studies to examine the impact of NED compensation in the target firm on the decisions made by the target firm board.

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Table 1 - Sample Construction

Panel A: Sample Selection

Acquisition bids in the Connect 4 database	688
Deletions:	
Unlisted Bidders	345
Total sample size	**343**

Panel B: Frequency of takeovers by year

Calendar year	Frequency	Cumulative Freq.	Per cent (%)	Cumulative %
2004	37	37	10.79	10.79
2005	30	67	8.75	19.53
2006	53	120	15.45	34.99
2007	63	183	18.37	53.35
2008	46	229	13.41	66.76
2009	47	276	13.70	80.47
2010	39	315	11.37	91.84
2011	28	343	8.16	100

Panel C: Frequency of takeovers by year and target firm industry

Industry (Two digit GICS)	Energy	Materials	Industrials	Cons. Disc.	Cons. staples	Health Care	Financials	I.T.	Telcom.	Utilities	Total firm-years
2004	-	-	5	10	2	5	11	4	-	-	37
2005	2	6	5	5	4	2	3	2	1	-	30
2006	7	12	5	10	1	2	9	3	1	3	53
2007	6	19	5	8	2	4	14	2	3	-	63
2008	12	12	3	2	1	2	10	2	2	-	46
2009	8	20	4	3	1	1	7	2	1	-	47
2010	9	17	5	1	1	-	4	1	1	-	39
2011	6	11	-	2	-	-	7	1	-	1	28
Total	50	102	27	41	12	16	65	17	9	4	343
(%)	14.58	29.74	7.87	11.95	3.50	4.66	18.95	4.96	2.62	1.17	100

Table 2 - Descriptive statistics for total sample

Variable	N	Mean	Median	Std. Dev.	Min	Max
Panel A – Dependent Variables						
Bid Premium	340	0.691	0.249	2.321	-0.995	31.500
Ln(Bid Premium)	340	0.218	0.222	0.796	-5.277	3.481
$CAR_{(-1,+1)}$	339	0.006	0.002	0.082	-0.260	0.422
COP_{Total} (Indicator)	342	0.082	0	0.275	0	1
$COP_{Positive}$ (Indicator)	343	0.099	0	0.299	0	1
$COP_{Negative}$ (Indicator)	343	0.082	0	0.274	0	1
Panel B – Test Variables						
NED to CEO comp. (%)	220	7.963	6.137	5.785	1.912	22.277
Industry Expert NEDs (Indicator)	343	0.866	1	0.341	0	1
Panel C – Control Variables						
Leverage	343	0.429	0.443	0.264	0.028	0.942
Market to Book	343	2.735	2.108	2.189	0.267	8.532
FCF	342	0.131	0.128	0.241	-0.423	0.560
ROA	342	-0.093	0.012	0.287	-0.968	0.190
Hostile (Indicator)	343	0.321	0	0.467	0	1
All Cash (Indicator)	343	0.697	1	0.460	0	1
Relative Size (Ratio)	337	0.541	0.276	0.666	0.010	2.457
Toehold	343	0.116	0.041	0.163	0	0.972
Competing (Indicator)	343	0.149	0	0.356	0	1
Board Size	343	6.096	6	2.167	0	14
NED (%)	340	69.90	75.00	19.90	0	100
Director Ownership	343	0.307	0.028	2.589	0	39.112

Bid premium is the ratio of the final offer price to the target stock price eight weeks prior to the original announcement date minus one. *$CAR_{(-1,+1)}$* is the cumulative abnormal return over the 3-day event window (-1, +1), estimated using market adjusted returns. *COP_{Total}* is an indicator variable that takes the value of one if the offer price was increased following a negative market reaction to the takeover announcement (based on 3-day CARs), and zero otherwise. *$COP_{Positive / Negative}$* are indicator variables, partitioned based on the direction of the 3-day CARs, that take the value of one if the offer price was increased following a positive/negative market reaction to the takeover announcement, and zero otherwise. *NED to CEO comp.* is the ratio of average NEDs' total compensation relative to the total CEO's compensation, winsorised at the 5% level. *Industry Expert NEDs* is an indicator variable that takes the value of one if any of the NEDs on the bidding firm hold other directorships in the same industry as the target firm, and zero otherwise. *Leverage* is the ratio of total debt to total assets for the bidding firm in the year prior to the acquisition, winsorised at the 5% level. *Market-to-Book* is the ratio of market capitalisation of the bidding firm relative to the book value of equity in the year prior to the acquisition, winsorised at the 5% level. *FCF* is the difference between the cash flow from operations and cash flow from investments for the target firm scaled by total assets in the year prior to the acquisition, winsorised at the 5% level. *ROA* is the ratio of net profit to total assets for the target firm in the year prior to the acquisition, winsorised at the 5% level. *Hostile* is an indicator variable taking the value of one if the initial recommendation by the target firm directors was to reject the offer, and zero otherwise. *All cash* is an indicator variable that takes the value of one for deals financed with cash only, zero otherwise. *Relative Size* is the ratio of the target firm's market capitalisation to the bidding firm's market capitalisation at the end of the financial year prior to the acquisition. *Toehold* is the percentage share ownership of the bidding firm at the date of the announcement of the acquisition. *Competing* is an indicator variable that takes the value of one if there are multiple bidders for the same target within a 6-month period of the takeover announcement, and zero otherwise. *Board Size* represents the number of directors on the bidding firm board at the announcement date of the acquisition. *NED* is the fraction of bidding firm directors that are non-executive. *Director Ownership* is the percentage share ownership of the bidding firm directors.

Table 3 - Pearson Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Ln(Bid Premium)	1																		
2. CAR $_{(-1,+1)}$	**-0.1173**	1																	
3. COP $_{Total}$	**0.1518**	**-0.1973**	1																
4. COP $_{Positive}$	**0.1297**	0.0704	**0.3371**	1															
5. COP $_{Negative}$	**0.1518**	**-0.1043**	**0.5794**	**-0.0917**	1														
6. NED to CEO comp.	**-0.1217**	**0.1114**	-0.0663	**-0.1117**	-0.0820	1													
7. Ind. Expert NEDs	0.0056	-0.0878	-0.0100	-0.0319	-0.0169	-0.0645	1												
8. Leverage	-0.0350	0.0642	-0.0236	0.0130	0.0445	**-0.3745**	-0.0414	1											
9. Market to Book	**0.1574**	**-0.0912**	0.0587	0.0580	0.0254	-0.0691	-0.0207	-0.0001	1										
10. FCF	0.0289	-0.0810	-0.0197	**0.1098**	-0.0451	-0.0609	0.0523	-0.0198	0.0380	1									
11. ROA	-0.0871	-0.0422	-0.0317	-0.0028	-0.0004	**-0.1597**	-0.0650	**0.1847**	**-0.0993**	**0.3234**	1								
12. Hostile	0.0657	0.0204	**0.1369**	**0.1926**	**0.1340**	0.0897	-0.0779	**-0.1376**	-0.0110	0.0078	0.0069	1							
13. All Cash	**-0.1169**	0.0252	-0.0808	**-0.1142**	-0.0621	**0.1488**	0.0754	**-0.1367**	**0.1330**	0.0200	**-0.1784**	0.0048	1						
14. Relative Size	**-0.2647**	**0.1258**	**-0.1788**	-0.0666	**-0.1440**	**0.1313**	0.0265	-0.0602	-0.0502	-0.0310	0.0791	0.0399	**0.1901**	1					
15. Toehold	0.0236	0.0464	0.0804	0.0690	0.0767	-0.0107	**-0.1323**	-0.0038	-0.0778	-0.0094	-0.0043	-0.0315	**-0.2694**	**-0.2452**	1				
16. Competing	0.0005	0.0469	0.0247	**0.1387**	-0.0296	-0.1034	0.0442	0.0306	-0.0737	0.0499	0.0601	**0.1342**	-0.0630	-0.0882	-0.0128	1			
17. Board Size	-0.0124	-0.0632	0.0359	0.0116	0.0599	**-0.4361**	**0.1559**	**0.3535**	0.0371	**0.1292**	**0.2012**	-0.0508	**-0.2023**	**-0.1442**	0.0152	0.0269	1		
18. NED	-0.0841	-0.0618	0.0240	-0.0257	-0.0371	**-0.2044**	**0.2915**	0.0863	-0.0351	0.0087	0.0285	**-0.1210**	**0.1149**	-0.0397	0.0113	-0.0156	**0.2531**	1	
19. Dir. Ownership	-0.0149	-0.0699	**0.1383**	**0.1073**	-0.0208	-0.0508	0.0217	0.0502	**0.1022**	0.0060	0.0394	**0.1033**	0.0516	0.0067	-0.0105	-0.0362	0.0557	**0.0915**	1

Figures in bold are significant up to the 10% level. *Ln(Bid premium)* is the natural log of the ratio of the final offer price to the target stock price eight weeks prior to the original announcement date minus one. *CAR $_{(-1, +1)}$* is the cumulative abnormal return over the 3-day event window (-1, +1), estimated using market adjusted returns. *COP $_{Total}$* is an indicator variable that takes the value of one if the offer price was increased following a negative market reaction to the takeover announcement (based on 3-day CARs), and zero otherwise. *COP $_{Positive / Negative}$* are indicator variables, partitioned based on the direction of the 3-day CARs, that take the value of one if the offer price was increased following a positive/negative market reaction to the takeover announcement, and zero otherwise. *NED to CEO comp.* is the ratio of average NEDs' total compensation relative to the total CEO's compensation, winsorised at the 5% level. *Industry Expert NEDs* is an indicator variable that takes the value of one if any of the NEDs on the bidding firm hold other directorships in the same industry as the target firm, and zero otherwise. *Leverage* is the ratio of total debt to total assets for the bidding firm in the year prior to the acquisition, winsorised at the 5% level. *Market-to-Book* is the ratio of market capitalisation of the bidding firm relative to the book value of equity in the year prior to the acquisition, winsorised at the 5% level. *FCF* is the difference between the cash flow from operations and cash flow from investments for the target firm scaled by total assets in the year prior to the acquisition, winsorised at the 5% level. *ROA* is the ratio of net profit to total assets for the target firm in the year prior to the acquisition, winsorised at the 5% level. *Hostile* is an indicator variable taking the value of one if the initial recommendation by the target firm directors was to reject the offer, and zero otherwise. *All cash* is an indicator variable that takes the value of one for deals financed with cash only, zero otherwise. *Relative Size* is the ratio of the target firm's market capitalisation to the bidding firm's market capitalisation at the end of the financial year prior to the acquisition. *Toehold* is the percentage share ownership of the bidding firm at the date of the announcement of the acquisition. *Competing* is an indicator variable that takes the value of one if there are multiple bidders for the same target within a 6-month period of the takeover announcement, and zero otherwise. *Board Size* represents the number of directors on the bidding firm board at the announcement date of the acquisition. *NED* is the fraction of bidding firm directors that are non-executive. *Director Ownership* is the percentage share ownership of the bidding firm directors.

Table 4 - OLS regression examining the association between the size of the bid premium and test variables

$Ln(Bid\ Prem)_{Final} = \beta_0 + \beta_1\ Compensation_i + \beta_2\ Industry\ Expertise_i + \sum \beta_h\ Bidder\ Characteristics_i + \sum \beta_i\ Target\ Characteristics_i + \sum \beta_j\ Deal\ Characteristics_i + \sum \beta_k\ Board\ Characteristics_i + \sum \beta_l\ Industry\ Indicators_i + \sum \beta_m\ Year\ Indicators_i + \varepsilon_i$

Variable	Predictions	(1) Final	(2) Initial
NED to CEO comp.	**-**	**-1.803***	**-1.931***
		(-1.93)	**(-1.86)**
Ind. Expert NEDs	-	0.097	0.098
		(0.43)	(0.45)
Leverage	-	0.170	0.228
		(0.66)	(0.88)
Market to Book	+	0.023	0.029***
		(1.64)	(4.55)
FCF	+	0.006	0.059
		(0.03)	(0.22)
ROA	+	-0.019	-0.121
		(-0.10)	(-0.49)
Hostile	+	0.158*	0.168***
		(2.51)	(3.28)
All Cash	-	-0.231	-0.264*
		(-1.94)	(-1.89)
Relative Size	+	-0.217	0.003
		(-1.61)	(0.79)
Toehold	-	-0.273	-0.097
		(-0.75)	(-0.32)
Competing	+	-0.149	-0.141
		(-1.21)	(-1.19)
Board Size	+	-0.053***	-0.048***
		(-3.83)	(-6.30)
NED	-	-0.035	-0.011
		(-0.08)	(-0.03)
Dir. Ownership	-	-0.009*	-0.010**
		(-1.91)	(-2.55)
Constant		0.807	0.605
		(1.47)	(1.43)
N		213	213
R-Squared		0.0836	0.0600
F Value		2.04**	2.25**

* is significant at 10%, ** is significant at 5%, and *** is significant at 1%. Numbers in parentheses are *t*-statistics based on robust standard errors. Industry and year clusters are included in the econometric specification. *Ln(Bid premium)* is the natural log of the ratio of the final/initial offer price to the target stock price eight weeks prior to the original announcement date minus one. *NED to CEO comp.* is the ratio of average NEDs' total compensation relative to the total CEO's compensation, winsorised at the 5% level. *Industry Expert NEDs* is an indicator variable that takes the value of one if any of the NEDs on the bidding firm hold other directorships in the same industry as the target firm, and zero otherwise. *Leverage* is the ratio of total debt to total assets for the bidding firm in the year prior to the acquisition, winsorised at the 5% level. *Market-to-Book* is the ratio of market capitalisation of the bidding firm relative to the book value of equity in the year prior to the acquisition, winsorised at the 5% level. *FCF* is the difference between the cash flow from operations and cash flow from investments for the target firm scaled by total assets in the year prior to the acquisition, winsorised at the 5% level. *ROA* is the ratio of net profit to total assets for the target firm in the year prior to the acquisition, winsorised at the 5% level. *Hostile* is an indicator variable taking the value of one if the initial recommendation by the target firm directors was to reject the offer, and zero otherwise. *All cash* is an indicator variable that takes the value of one for deals financed with cash only, zero otherwise. *Relative Size* is the ratio of the target firm's market capitalisation to the bidding firm's market capitalisation at the end of the financial year

prior to the acquisition. *Toehold* is the percentage share ownership of the bidding firm at the date of the announcement of the acquisition. *Competing* is an indicator variable that takes the value of one if there are multiple bidders for the same target within a 6-month period of the takeover announcement, and zero otherwise. *Board Size* represents the number of directors on the bidding firm board at the announcement date of the acquisition. *NED* is the fraction of bidding firm directors that are non-executive. *Director Ownership* is the percentage share ownership of the bidding firm directors.

Table 5 - OLS regression examining the association between the market reaction to the takeover announcement and test variables

$CAR_{(-1,\ +1)} = \beta_0 + \beta_1\ Compensation_i + \beta_2\ Industry\ Expertise_i + \sum \beta_h\ Bidder\ Characteristics_i$
$+\sum \beta_i\ Target\ Characteristics_i + \sum \beta_j\ Deal\ Characteristics_i + \sum \beta_k\ Board\ Characteristics_i$
$+ \sum \beta_l\ Industry\ Indicators_i + \sum \beta_m\ Year\ Indicators_i + \varepsilon_i$

Variable	Predictions	(1) 3-day	(2) 5-day
NED to CEO comp.	+	**0.178***	**0.335***
		(1.75)	**(2.70)**
Ind. Expert NEDs	+	**-0.051***	-0.049
		(-3.89)	(-1.26)
Leverage	+	0.031	0.023
		(1.22)	(0.61)
Market to Book	-	-0.002	-0.001
		(-1.18)	(-0.39)
FCF	+	-0.016	-0.032
		(-0.47)	(-0.62)
ROA	+	0.001	-0.008
		(0.04)	(-0.33)
Hostile	-	0.009	0.021
		(0.60)	(0.97)
All Cash	+	-0.004	-0.008
		(-0.43)	(-0.48)
Relative Size	-	0.009	0.028*
		(1.41)	(1.91)
Toehold	+	0.013	0.008
		(0.41)	(0.17)
Competing	-	0.302	0.047**
		(1.48)	(2.02)
Board Size	+/-	0.001	0.001
		(0.67)	(-0.05)
NED	+	-0.028	-0.021
		(-1.19)	(-0.65)
Dir. Ownership	+	-0.002**	-0.001***
		(-2.28)	(-3.16)
Constant		0.026	0.016
		(0.88)	(0.31)
N		215	192
R-Squared		0.0930	0.1349
F Value		5.59***	4.67***

* is significant at 10%, ** is significant at 5%, and *** is significant at 1%. Numbers in parentheses are *t*-statistics based on robust standard errors. Industry and year clusters are included in the econometric specification. *CAR $_{(-1,\ +1)}$* is the cumulative abnormal return over the 3-day event window (-1, +1), estimated using market adjusted returns. *NED to CEO comp.* is the ratio of average NEDs' total compensation relative to the total CEO's compensation, winsorised at the 5% level. *Industry Expert NEDs* is an indicator variable that takes the value of one if any of the NEDs on the bidding firm hold other directorships in the same industry as the target firm, and zero otherwise. *Leverage* is the ratio of total debt to total assets for the bidding firm in the year prior to the acquisition, winsorised at the 5% level. *Market-to-Book* is the ratio of market capitalisation of the bidding firm relative to the book value of equity in the year prior to the acquisition, winsorised at the 5% level. *FCF* is the difference between the cash flow from operations and cash flow from investments for the target firm scaled by total assets in the year prior to the acquisition, winsorised at the 5% level. *ROA* is the ratio of net profit to total assets for the target firm in the year prior to the acquisition, winsorised at the 5% level. *Hostile* is an indicator variable taking the value of one if the initial recommendation by the target firm directors was to reject the offer, and zero otherwise. *All cash* is an indicator variable that takes the value of one for deals financed with cash only, zero otherwise. *Relative Size* is the ratio of the target firm's market capitalisation to the bidding firm's market capitalisation at the end of the financial year prior to the acquisition. *Toehold* is the

percentage share ownership of the bidding firm at the date of the announcement of the acquisition. *Competing* is an indicator variable that takes the value of one if there are multiple bidders for the same target within a 6-month period of the takeover announcement, and zero otherwise. *Board Size* represents the number of directors on the bidding firm board at the announcement date of the acquisition. *NED* is the fraction of bidding firm directors that are non-executive. *Director Ownership* is the percentage share ownership of the bidding firm directors.

Table 6 - Logit regression examining the association between the change in offer price and test variables

$COP_{Total} = \beta_0 + \beta_1\ Compensation_i + \beta_2\ Industry\ Expertise_i + \sum \beta_h\ Bidder\ Characteristics_i + \sum \beta_i\ Target\ Characteristics_i + \sum \beta_j\ Deal\ Characteristics_i + \sum \beta_k\ Board\ Characteristics_i + \sum \beta_l\ Industry\ Indicators_i + \sum \beta_m\ Year\ Indicators_i + \varepsilon_i$

Variable	Predictions	(1)	(2) Positive	(3) Negative
NED to CEO comp.	-	**-18.372****	**-49.950*****	**-20.431***
		(-2.07)	**(-3.00)**	**(-1.72)**
Ind. Expert NEDs	-	-0.087	-1.201	0.916
		(-0.03)	(-0.53)	(0.23)
CAR(-1,+1)	+/-	-19.121***	32.966*	-5.382
		(-3.00)	(1.78)	(-0.70)
Leverage	-	-0.398	2.872	-0.690
		(-0.23)	(0.71)	(-0.27)
Market to Book	+	0.126	0.822*	0.134
		(0.61)	(1.92)	(0.60)
FCF	+	-3.162**	6.635**	-2.525
		(-1.96)	(2.45)	(-1.38)
ROA	+	0.333	5.111	0.477
		(0.16)	(1.43)	(0.23)
Hostile	+	1.863**	5.534**	2.078*
		(2.08)	(2.06)	(1.73)
All Cash	-	-1.774**	-1.656	-1.351*
		(-2.24)	(-1.34)	(-1.74)
Relative Size	+	-3.067**	-0.563	-3.036**
		(-2.28)	(-0.56)	(-2.51)
Toehold	-	2.402	5.932**	2.750
		(1.10)	(2.44)	(1.16)
Competing	+	-0.041	-1.139	0.309
		(-0.04)	(-0.47)	(0.20)
Board Size	+/-	-0.385**	-0.191	-0.286
		(-2.24)	(-0.75)	(-1.36)
NED	-	-0.910	-2.278	-0.344
		(-0.64)	(-0.46)	(-0.23)
Dir. Ownership	-	0.162	-2.735**	0.117
		(0.73)	(-0.87)	(1.61)
Constant		0.117	-12.194***	-0.591
		(0.03)	(-3.70)	(-0.14)
N		191	108	107
Pseudo R-Squared		0.4233	0.6114	0.3946
Chi-2		58.93***	233.98***	70.37***

* is significant at 10%, ** is significant at 5%, and *** is significant at 1%. Numbers in parentheses are *z*-statistics based on robust standard errors. Industry and year dummies are included in the econometric specification. *COP* $_{Total}$ is an indicator variable that takes the value of one if the offer price was increased following a negative market reaction to announcement (based on 3-day CARs), and zero otherwise. *COP* $_{Positive\ /\ Negative}$ are indicator variables, partitioned based on the direction of the 3-day CARs, that take the value of one if the offer price was increased following a positive/negative market reaction to the takeover announcement, and zero otherwise. *CAR* $_{(-1,\ +1)}$ is cumulative abnormal return over the 3-day event window (-1, +1), estimated using market adjusted returns. *NED to CEO comp.* is the ratio of average NEDs' total compensation relative to the total CEO's compensation, winsorised at the 5% level. *Industry Expert NEDs* is an indicator variable that takes the value of one if any of the NEDs on the bidding firm hold other directorships in the same industry as the target firm, and zero otherwise. *Leverage* is the ratio of total debt to total assets for the bidding firm in the year prior to the acquisition, winsorised at the 5% level. *Market-to-Book* is the ratio of market capitalisation of the bidding firm relative to the book value of equity in the year prior to the acquisition, winsorised at the 5% level. *FCF* is the difference between the cash flow from operations and cash flow from investments for the target firm

scaled by total assets in the year prior to the acquisition, winsorised at the 5% level. *ROA* is the ratio of net profit to total assets for the target firm in the year prior to the acquisition, winsorised at the 5% level. *Hostile* is an indicator variable taking the value of one if the initial recommendation by the target firm directors was to reject the offer, and zero otherwise. *All cash* is an indicator variable that takes the value of one for deals financed with cash only, zero otherwise. *Relative Size* is the ratio of the target firm's market capitalisation to the bidding firm's market capitalisation at the end of the financial year prior to the acquisition. *Toehold* is the percentage share ownership of the bidding firm at the date of the announcement of the acquisition. *Competing* is an indicator variable that takes the value of one if there are multiple bidders for the same target within a 6-month period of the takeover announcement, and zero otherwise. *Board Size* represents the number of directors on the bidding firm board at the announcement date of the acquisition. *NED* is the fraction of bidding firm directors that are non-executive. *Director Ownership* is the percentage share ownership of the bidding firm directors.