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Co-opted boards and bidder performance

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Abstract

Purpose – Defining co-opted directors as those who join a company's board after an incumbent chief executive officer assumes office, this study aims to investigate the influence of co-opted boards on bidder performance.
Design/methodology/approach – This study applies ordinary least squares regression analyses to a sample of 8,939 acquisition observations announced by US firms spanning the 1999–2019 period. Event study methodology was employed to capture the market response to acquisition announcements. Propensity score matching technique, a two-stage least squares instrumental variable approach and model selection through the Lasso method were performed for robustness and endogeneity correction purposes.
Findings – The results depict a significant negative relationship between a co-opted board and return to acquirers, suggesting that managers under co-opted boards make value-destructing Mergers and Acquisitions deals. We also show that the relationship between board co-option and acquisition performance is positively moderated by institutional ownership while being negatively moderated by an entrenched board. Our additional tests reveal that board co-option reduces acquisition efficiency and leads to worse financial performance.
Practical implications – This study offers important implications for regulators and policymakers by highlighting how poor monitoring of the board of directors can influence announcement returns.
Originality/value – To the best of the authors' knowledge, this paper appears to be the first investigation that makes a link between board co-option and various dimensions of acquisition decision.

Keywords Mergers and acquisitions, Bidder performance, Cumulative abnormal returns, Board co-option
Paper type Research paper

1. Introduction

Board co-option refers to a situation where directors join the board after the incumbent chief executive officer (CEO) assumes office (Coles, Daniel, & Naveen, 2014). These co-opted directors may exhibit loyalty to the CEO, primarily due to the timing of their nomination, which is influenced by the CEO's authority in the directors' selection process. This loyalty can make them less likely to challenge the CEO's strategies or scrutinise his decisions with the rigor required. Prior studies show that co-opted directors may be weaker monitors because of their close ties to the CEO and their decisions could be swayed by their allegiance to the CEO (Lim, Do, & Vu, 2020; Cook, Chowdhury, & Zhang, 2023). Consequently, a co-opted board can increase CEO power, reduce board independence and create potential conflicts of interest, which can impair the board's ability to make objective and informed decisions. Mergers and Acquisitions (M&A) are significant corporate decisions that are complex and the outcomes carry significant consequences with long-term and far-reaching impacts on stakeholders. Such

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decisions require a high degree of independent oversight to assess risks, conduct due diligence and ensure that the transaction benefits shareholders. However, a co-opted board, swayed by allegiance to the CEO, can disrupt this balance, leading to decisions that prioritise the CEO's short-term interests – perhaps empire-building or securing personal financial gains – over the long-term value creation for shareholders. Therefore, a co-opted board exacerbates the agency conflict between management and shareholders in the context of mergers and acquisitions by limiting the board's ability to thoroughly scrutinise potential risk factors and inform stakeholders, including investors and regulators, about governance risks in firms undergoing M&As. Effective board oversight is crucial to ensure that M&A decisions align with shareholder interests rather than being predominantly influenced by the CEO's preferences. Therefore, bidders with high levels of board co-option and decreased board oversight may lead to value-destroying M&A decisions that favour the CEO's personal interests or short-term gains over long-term shareholder value.

From the monitoring perspective of boards, prior literature has documented the negative consequences of board co-option. Due to poor monitoring, co-opted boards decrease turnover-performance sensitivity (Coles *et al.*, 2014) and dividend payouts (Jiraporn & Lee, 2018) while increase insiders' trading profitability (Rahman, Malik, Ali, & Iqbal, 2021) and risk-taking (Lee, Jiraporn, Kim, & Park, 2021). Co-opted boards are also prone to stock price crashes (Kao, Huang, Fung, & Liu, 2020), corporate misconduct (Zaman, Atawnah, Baghdadi, & Liu, 2021) and restricted debt covenants (Lim *et al.*, 2020). However, the economic consequences of co-option on bidder announcement returns remained unexplored. By investigating how co-opted boards influence M&A outcomes, we uncover the risks posed by weakened board independence and help ensure that future M&A decisions are made with the best interests of shareholders in mind. This study aims to fill this research gap by examining how co-opted boards affect M&A outcomes, contributing to the broader understanding of how board dynamic influences strategic corporate decisions such as mergers and acquisitions decisions.

Our study on board co-option is motivated by the fact that CEOs employ a substantial effect on appointing board members (Coles *et al.*, 2014) whereby boards do not serve as independent monitors due to their allegiance to the CEO. Legally, directors may be independent, but in reality, they may not be independent in monitoring the functions of CEOs (Zaman *et al.*, 2021). Therefore, boards are black boxes, and their composition is compromised when the inner dynamics of boards are unobservable. In essence, the board attributes, for instance, board independence, affect the firm performance, and the social connection between director and CEO can influence the director's influence over CEO monitoring (Hwang & Kim, 2009). The CEOs try to appoint new directors to increase their control over the board [1] and decrease board independence (Hermalin & Weisbach, 1998). The board's monitoring role identifies the board's obligation to compensate managers in such a way that it aligns managers' interests with shareholders (Zattoni, Dedoulis, Leventis, & Ees, 2020). Conventional wisdom maintains that board monitoring is more effective in the presence of more independent directors. However, in practice, CEOs influence board selection in different ways, notably in hiring sympathetic directors (Finkelstein & Hambrick, 1989) or directors with social ties or similar views (Hwang & Kim, 2009). We build on the argument that board co-option creates a poor monitoring environment to examine its impact on M&As, specifically on the bidders' returns. We adopt a stakeholder–agency perspective of the firm and elaborate on value creation through the lens of the board's monitoring function.

According to stakeholder–agency theory, there is an implicit contract between stakeholders (multiple principals) and agents (managers), whereas traditional agency theory focuses on the relationship between shareholders and managers (Hill & Jones, 1992). In the M&A context, directors (whether executive or independent) appointed following a CEO's accession are disinclined to fulfill their fiduciary duty to protect stakeholders by questioning the management's status quo. Humphery-Jenner *et al.* (2022) argue that independent directors, who are arguably less beholden to CEOs, are more effective in disciplining even the powerful

CEOs. Therefore, firms with highly co-opted boards face a governance risk, where the CEO's increased control over the board diminishes the board's ability to act independently (Zattoni *et al.*, 2020). This study builds on the argument that board co-option creates a weak governance environment and explores how this dynamic impacts M&A outcomes. By adopting an agency perspective, we investigate how compromised board oversight influences value creation through mergers, with significant implications for investors, managers and regulators.

Following Coles *et al.* (2014), we measure co-option as the percentage of board members hired after the CEO and cumulative abnormal returns (CARs) as the disparity between actual and expected daily returns using Fama, Fisher, Jensen, and Roll (1969) standard event study methodology. Using a sample of US public acquirers from 1999 to 2019, our findings indicate that co-opted boards significantly reduce bidder returns, highlighting the detrimental impact of weakened board monitoring when co-option is present. The results show that public bidders experience significant losses, partly due to a poor monitoring environment. Our results are persistent after controlling for deal and firm-level characteristics.

A potential endogeneity issue is the main concern in establishing a causal relationship between co-option and bidder CARs. We employ a battery of techniques to alleviate endogeneity concerns that are prevalent in corporate research. First, we execute propensity score matching (PSM) regressions on treatment and control samples to address the selection bias arising from firm-related characteristics and bias-omitted variables. Second, we undertake two-stage least squares (2SLS) regressions utilising the board co-option in the earliest year as an instrumental variable (IV) for board co-option in the current year, thus countering the potential reverse causality issue. Third, we employ the machine learning method of the least absolute shrinkage and lasso selection and inference operator to strengthen the baseline regression models. Our baseline results are consistent after controlling for endogeneity-related concerns.

We further reveal the impacts of CEO characteristics including CEO age, CEO risk-taking, CEO tenure and CEO age. We also report that the negative impact of board co-option on acquisition performance is more pronounced when the target board's co-option is higher. Our baseline results are also more pronounced in (1) acquisition of public targets, (2) acquisitions paid by cash, (3) acquisition of targets in related industries, (4) large deals and (5) domestic transactions. Analysing the proposition that the presence of co-opted directors leads to value reduction due to a poor monitoring environment, we conduct subsample analyses on weak- vs. strong-governed firms, proxied by (1) entrenchment index and (2) institutional ownership. Our findings reveal that the relationship between board co-option and acquisition performance is more severe in poorly governed firms while being diminished under the scrutiny of institutional shareholders' co-opted directors.

To further uncover the impact of co-option in M&As, we explore how co-opted boards affect acquisition efficiency: bid premiums, time to complete the deal, partial acquisitions and deal completion. Scholars argue that acquirers' poor takeover performance can be attributed to higher bid premiums (Hussain & Shams, 2022), poor deal assessment (Faleye, Hoitash, & Hoitash, 2011), ignoring partial acquisitions (Nain & Wang, 2018) and failure to complete deals. We find that a higher percentage of co-opted directors on the board reduces the level of acquisition efficiency and subsequently leads to worse performance. The results show that co-opted directors (1) pay higher premiums; (2) spend less amount of time, and therefore effort, in assessing the deal; (3) do not prefer partial acquisitions; and (4) are less likely to complete the deal. Our findings consistently demonstrate that co-opted directors fail to make decisions in the interest of shareholders.

This study makes three important contributions to M&A literature. First, we examine the impact of board co-option on bidder announcement returns and suggest that board co-option, among other factors, is detrimental to bidder shareholders. This evidence corroborates the poor monitoring under co-opted boards (Coles *et al.*, 2014; Lim *et al.*, 2020) and highlights that managers under co-opted boards make poor M&A deals, destroying shareholder wealth. We extend the debate over M&As that exhibit acquirers, on average, earning negative returns from

takeovers (Andrade, Mitchell, & Stafford, 2001; Renneboog & Vansteenkiste, 2019; Starks & Wei, 2013). Second, we add to the literature the role of CEO characteristics, deal characteristics and internal and external monitoring (Morck, Shleifer, & Vishny, 1990; Shleifer & Vishny, 2003; Travlos, 1987) in M&As and identify how these factors can affect the relationship between board co-option and bidder returns. Third, we extend the literature on acquisition efficiency (Humphery-Jenner & Powell, 2011; Hussain & Shams, 2022) and show that bidders with co-opted boards pay higher premiums, take fewer days to complete the deal, do not prefer partial acquisitions and are less likely to complete the deal.

The remainder of this paper is organised as follows: Section 2 discusses the background and develops the hypothesis; Section 3 presents the research design; Section 4 shows analyses and results; and Section 5 concludes the study.

2. Literature review and hypothesis development

2.1 Board co-option

Existing studies highlight the monitoring role emerging from various firm-level governance mechanisms, including independent directors (Cotter, Shivdasani, & Zenner, 1997), gender diversity (Kirsch, 2018) and board committees (Beasley, Carcello, Hermanson, & Lapides, 2000). However, the contemporary rise in corporate malpractice cases has prompted further research, with recent work identifying directors' associations with executives as a critical reason for weaker monitoring (Baghdadi, Nguyen, & Podolski, 2020; Lim *et al*., 2020). For instance, Coles *et al*. (2014) demonstrate that a higher percentage of co-opted directors, whether independent or not, reduces the quality of board oversight. This concern aligns with Luong, Minnick, Rivolta, and Sham (2024), who argue that social ties between CEOs and directors undermine board effectiveness.

Recent research also explores the role of CEOs in the selection of directors, raising questions about the rationality and accountability of these appointments (Baghdadi *et al*., 2020; Jiraporn & Lee, 2018). CEOs may hire directors with whom they share a favourable relationship or similar working ethics (Coles *et al*., 2014; Wintoki & Xi, 2019). Consequently, co-opted directors often demonstrate loyalty to the CEO, reducing their objectivity in monitoring (Hwang & Kim, 2009). Personal and loyalty ties to management weaken the monitoring capabilities of boards of directors, leading to biased decision-making that often neglects stakeholder interests (Lim *et al*., 2020).

The economic consequences of co-opted boards have been widely discussed in recent literature. Lartey, Danso, and Boateng (2021) examine the impact of co-option on capital structure, finding that it positively affects financial leverage. Furthermore, Zaman *et al*. (2021) report that co-opted boards contribute to increased incidents of corporate misconduct due to poorly performing board committees. Huang, Han, and Cho (2021) investigate the effects of co-option on risk-taking behaviour, arguing that co-option enhances CEO power in corporate decision-making, which can lead to overestimation of returns on risky projects and, consequently, poor investment decisions. Lim *et al*. (2020) suggest that as the number of co-opted directors rises, creditors demand stricter covenant restrictions. These studies consistently attribute the unfavourable consequences of co-opted boards to their weak monitoring role (Faleye *et al*., 2011; Chiu, Teoh, & Tian, 2013).

2.2 Bidder performance and the role of corporate governance

Prior studies on M&As accentuate the role of corporate governance (see for instance, Cotter *et al*., 1997; Datta, Iskandar-Datta, & Raman, 2001; Masulis, Wang, & Xie, 2007), proposing that acquirers with higher governance quality earn higher returns and incline to pay lower takeover premiums. These studies also suggest that managers of better-governed firms are good monitors, better estimate takeover synergies and make value-enhancing deals. Black, Jang, and Kim (2006) argue that managers of firms with higher governance standards are less

entrenched and make better investment decisions. Similarly, Doidge, Karolyi, and Stulz (2007) proclaim that good governed firms can mitigate agency problems and better perform in M&As. Masulis *et al.* (2007) find that bidders with more antitakeover provisions (a proxy for poor governance) earn lower returns due to empire building behaviour of bidder managers, while Levi, Li, and Zhang (2014) show that female directors generate higher returns due to less empire-building behaviour. Apart from the positive consequences of good corporate governance, several other studies in M&As show that, on average, bidders perform poorly due to CEO hubris (Roll, 1986), free rider problem (Grossman & Hart, 1980), rational overbidding (Akdogu, 2011), competition in M&A market (Bradley, Desai, & Kim, 1988) and free cash flow (Jensen, 1986).

Another stream of literature has interrogated the impact of board characteristics on the performance of bidding companies. Among other board characteristics, board independence and CEO/Chairman duality are widely discussed in M&A literature to show their impact on the performance of bidder firms. Board independence is considered to be an important factor for effective board monitoring. Independent boards have minimum economic concerns with companies as compared to affiliated boards. Thus, independent boards are perceived as more unbiased and fruitful monitors. For instance, Byrd and Hickman (1992) use tender offers during the 1980s and find that bidder announcement returns are significantly higher in bidding firms where independent outside directors possess at least half of the seats. Masulis *et al.* (2007) argue that those bidding firms enjoy higher abnormal announcement returns which separate the chairman of the board and CEO positions. Bange and Mazzeo (2004) identify that target shareholders receive higher gains in companies with individuals holding positions of CEO and board chairman. Although the aforementioned studies provide interesting insights into the effect of board characteristics on bidder performance, the impact of board co-option remains unexplored.

2.3 Hypothesis development

The literature has shown that the existence of co-opted boards, irrespective of whether they are independent or executive, erodes their ability to monitor CEOs (Zaman *et al.*, 2021; Coles *et al.*, 2014). Such poor monitoring is linked to the number of co-opted directors, and firms with a greater percentage of co-opted directors not only safeguard CEOs from dismissal (Coles *et al.*, 2014) but also remunerate them with higher stock compensation (Morse, Nanda, & Seru, 2011). Thus, board co-option helps CEOs pursue their personal goals, aggravating agency conflicts between managers and stakeholders.

Stakeholder–agency theory (Hill & Jones, 1992) posits that poorly monitored managers, incentivised by personal motives may engage in activities that not only harm shareholders but also other stakeholders. Stakeholder–agency theory helps explain why co-opted boards enable CEOs to engage in value-destroying decisions. Poor monitoring environments allow CEOs to pursue personal objectives, even when such actions conflict with the welfare of stakeholders. Poorly monitored managers pursue their own motives and engage in malpractice (Jain & Zaman, 2020). For instance, firms with a higher percentage of co-opted directors reserve more cash rather than distributing it to shareholders, suggesting that the presence of excessive cash reserves under a weaker monitoring or governance environment creates an opportunity for managers to pursue short-term agendas. Moreover, "the Airbus Inc. global bribery case" and "Enron accounting fraud" are evidence of a relationship between CEOs and co-opted boards (Zaman *et al.*, 2021).

Building on these discussions, we hypothesise that the propensity of an acquiring firm to engage in a vale-destructing deal will be particularly high in the existence of co-opted board. Co-opted boards, because of their allegiance to CEOs, might be reluctant to fire CEOs in the case of corporate infractions (Coles *et al.*, 2014). Being loyal to the CEO, co-opted directors may not maintain proper monitoring and the former may decrease shareholder returns.

Because CEOs in poor monitoring environment can destroy shareholders' wealth, we develop our hypothesis as follows:

H1. A higher percentage of co-option can negatively affect bidder cumulative abnormal returns, ceteris paribus.

3. Research design

3.1 Data and sample

We obtain our data from multiple sources. We first extract acquisition data from the Refinitiv Securities Data Corporation's (SDC) Mergers and Acquisition database. We identify 8,939 mergers and acquisitions announced by 1,424 publicly listed unique bidding firms. Target firms include public, private and subsidiaries of domestic and foreign target firms [2]. Following Masulis *et al*. (2007), we keep the mergers and acquisitions announcement that meet the following criteria: (1) both partial and completed acquisitions are included, (2) if the bidding firms acquire more than 50% of the target shares after the acquisition announcements, (3) the deal value disclosed in SDC is more than $1 million and finally and (4) the acquirer has stock return data (210 trading days prior to acquisition announcements) from the Center for Research in Security Prices Daily Stock Price and Returns file.

Financial data are collected from Compustat, corporate governance data from the BoardEx, institutional investors' ownership data from the FactSet LionShares database, and analysts' forecast data from the Institutional Brokers' Enterprise Systems (I/B/E/S) database. Following Coles *et al*. (2014), we then identify if a director is co-opted if he/she is appointed after the incumbent CEO assumes office to calculate board co-option measure based on the number of co-opted directors on the board. We merge the above data sets and require that all variables have non-missing values to estimate the regression models outlined in Section 3.4 to be included in the sample. We winsorise variables at the top and bottom 1% of the sample distribution or employ a logarithm transformation to avoid the undesirable influence of extreme outliers. Our final sample for the empirical analysis comprises 8,393 observations for the period 1999 to 2019.

Table 1 provides the year-by-year and industry-by-industry [3] distributions of our sample. The number of annual M&A transactions is highest in the years prior to and at the beginning of the global financial crisis (i.e. from 2004 to 2007), implying that many companies were vulnerable to acquisition at the start of this severe economic downturn. A drop in annual M&A transactions can be observed during the global financial crisis and recovery periods to the early-2000.

Regarding industry distribution, to conserve space, we report the top ten bidding industries in Table 1. The Business Services industry constitutes the highest percentage of our total sample at 13.65%, followed by Banking (12.65%), Trading (7.18%) and Electronic Equipment (6.10%) [4]. On the other hand, bidders from the Textiles industry appear to have the lowest number of M&A announcements.

3.2 Variable measurement

3.2.1 Acquirer announcement period returns measures. We employ the conventional event study method based on the market model (Brown & Warner, 1985) and calculate the cumulative abnormal return earned by an acquirer surrounding the announcement day ($t = 0$) over a three-day event window (from $t = -1$ to $t = +1$). In the three-day announcement window, $t = 0$ is the announcement day identified by the SDC Platinum database. Following prior studies (e.g. Chang, 1998; Masulis *et al*., 2007; Moeller, Schlingemann, & Stulz, 2004), the firm-specific $\propto_i$ and β_i parameters of the market model are estimated using daily returns for the acquirer *i* and for the market index for a 200-day estimation period spanning from $t = -210$ to $t = -11$. We exclude the 10-day window around the announcement date from the estimation

Table 1. Sample distribution

Year	Obs	Percent (%)	Industry category	Obs	Percent (%)
1999	150	1.68	Business Services	1,220	13.65
2000	532	5.95	Banking	1,131	12.65
2001	331	3.70	Trading	642	7.18
2002	308	3.45	Electronic Equipment	545	6.10
2003	465	5.20	Pharmaceutical Products	534	5.97
2004	565	6.32	Petroleum and Natural Gas	437	4.89
2005	571	6.39	Computers	415	4.64
2006	597	6.68	Non-Metallic and Industrial Metal Mining	313	3.50
2007	605	6.77	Medical Equipment	301	3.37
2008	478	5.35	Communication	285	3.19
2009	381	4.26	Others	3,116	34.86
2010	396	4.43			
2011	390	4.36			
2012	400	4.47			
2013	389	4.35			
2014	457	5.11			
2015	488	5.46			
2016	352	3.94			
2017	373	4.17			
2018	388	4.34			
2019	323	3.61			
Total	*8,939*	*100*	*Total*	*8,939*	*100*

Note(s): This table presents sample distribution across years (Panel A) and industries (Panel B) of US-listed bidders over the period from 1999 to 2019
Source(s): Authors' own work

period to minimise the market noise effect because of the common information leaked to the market before the actual announcement date.

3.2.2 Board co-option measures. We follow Coles *et al.* (2014) to define co-opted directors as those who join a company's board after an incumbent CEO assumes office. We use three measures of board co-option. The first measure, *PCO_OPT*, is calculated by taking the number of co-opted directors divided by the total number of directors on the board. This measure represents the density of co-opted directors on the board and captures the disutility of the board in an effort to monitor CEOs' discretion stemming from the critical role of the CEO in appointing the co-opted directors. The second measure, *NCO_OPT*, is calculated as the gap between the number of co-opted directors and the total number of directors on the board, representing the severity of board co-option. The third measure, *RCO_OPT*, is the residual from a regression of *PCO_OPT* on CEO tenure, which is included to control for the possibility that co-option increases mechanically with CEO tenure and that our models may instead capture the influence of CEO tenure (Coles *et al.*, 2014).

While PCO_OPT and RCO_OPT are derived directly from Coles *et al.* (2014), we introduce a new measure of boar co-option, namely NCO_OPT. This variable adds a new dimension to boar co-option measures by considering the difference between the number of co-opted directors relative to the board size. This approach can reveal a threshold effect, where the presence of co-opted directors might subtly or significantly influence board decisions once a certain threshold is crossed. Specifically, we extend the implication of the critical mass theory beyond the traditional gender diversity application to suggest that there is a critical point at which the influence of co-opted directors becomes more pronounced (Dahlerup, 2006; Oliver & Marwell, 2001). By capturing this relative measure, NCO_OPT allows for a more nuanced assessment of how co-option might impact board dynamics and decision-making

processes, providing insights into the conditions under which situations co-opted directors significantly shape board outcomes.

3.2.3 Control variables. We employ three sets of control variables that are known to be determinants of acquirer announcement returns and board co-option in the literature. First, both acquirer announcement returns and board co-option are influenced by a range of firm characteristics. Previous studies find that the market reacts to the acquirers' profitability, firm size and cash holding (Luong, Gunasekarage, & Shams, 2021; Moeller *et al.*, 2004; Rosen, 2006). Accordingly, we control for firm size (*SIZE*), cash holding (*CASH*) and profitability (*ROA*). Likewise, investors consider acquirers' debt-to-asset ratio and market valuation to make acquisition decisions (Humphery-Jenner & Powell, 2011; Masulis *et al.*, 2007). Consequently, we use firm leverage (*LEV*) and Tobin's Q (*TOBINQ*) as control variables. Recent anecdotal evidence suggests that the number of analysts following influences acquirer abnormal returns (Wright, Kroll, & Elenkov, 2002). This variable has also been identified by the literature as being related to board co-option given its powerful external monitoring mechanism (Brennan & Subrahmanyam, 1995), allowing us to control for *LOGNANALYSTS* in our model.

Our second set of control variables is included to address the concern of the possibility that our results might be due to CEO and board characteristics rather than board co-option. These variables are the tenure of the CEO (*CEO_TENURE*) and the CEO and chair dual position (*CEO_DUALITY*), the size of the board of directors (*BOARD_SIZE*) and the percentage of independent directors (*BOARD_INDEP*). We control for the impact of CEO tenure, which is one source of managers' power (Finkelstein, 1992) because CEOs with long tenure could strengthen CEOs' influence on the management structure and board composition (Hermalin & Weisbach, 1998). Moreover, it is likely that powerful CEOs may have preferences in the recruitment of directors with whom they are connected (Fracassi & Tate, 2012), leading to board co-option (Coles *et al.*, 2014). CEO tenure has also been found to be associated with acquisition performance (Zhou, Dutta, & Zhu, 2020). Furthermore, the combination of the CEO and chair position can reflect the power vested in the CEO, which can heighten the possible conflicts of interest and reduce the level of boards' monitoring function (Davidson, Goodwin-Stewart, & Kent, 2005). Similarly, the literature also reports that board size and board independence can impact acquisition performance (Masulis *et al.*, 2007).

Third, it is well established in prior scholarship that acquirer performance is influenced by deal characteristics. In particular, it is likely that stock price predicts the potential synergy based on the relative size of the acquirer and target (Alexandridis, Fuller, Terhaar, & Travlos, 2013; Moeller *et al.*, 2004) and the industry in which they operate (Morck *et al.*, 1990; Shleifer & Vishny, 2003). Therefore, we control for relative size (*RELATIVESIZE*) and acquirer and target industry (*RELATEDID*). Since the method of payment (Travlos, 1987), the presence of competing bidders (De, Fedenia, & Triantis, 1996) and the type of offer (i.e. hostile or tender) (Schwert, 2000; Pablo, 2013) signal the market about the bargaining power between acquirer and target, we include cash payment (CASH), stock payment (STOCK), competing bidder (*COMPETINGBID*) and tender offer (*TENDEROFFER*) in our regression. Detailed definitions of the variables are presented in the Appendix.

3.3 Analytical model

To examine the effect of board co-option on acquirer performance, we estimate the following regression model:

$$CAR_{i,t} = \propto_0 + \beta_1(COOP_{i,t-1}) + \sum \beta_i Controls_{i,t-1} + \sum \beta_i Year_{i,t} + \sum \beta_i Industry_{i,t} + \varepsilon_{i,t} \quad (1)$$

where *i* and *t* refer to firm and year, respectively. The dependent variable is acquirer's abnormal announcement returns (*CAR*). The independent variable is the proportion of co-opted directors

(*PCO_OPT*) or number of co-opted directors (*NCO_OPT*). Control variables consist of firm size (*SIZE*), leverage ratio (*LEV*), cash holding (*CASH*), Tobin's Q (*TOBINQ*), return-on-assets ratio (*ROA*), the natural logarithm of the number of analysts following (*LOGNANALYSTS*) and relative size which is the transaction value divided by the market value of the acquirer one month prior to the acquisition announcement (*RELATIVESIZE*). CEO characteristics and board specifics include the CEO-chair title concentration (*CEO_DUALITY*), natural logarithm of the year-length of CEO term (*CEO_TENTURE*), natural logarithm of the number of directors on the board (*LNBOARD_SIZE*) and the percentage of independent directors on the board (*BOAR_INDEP*). Other controls are dummy variables that take a value of one if deals are paid solely by cash (*ALLCASH*) or by stock (*STOCK*), if the bidder and target are from the same industries (*RELATEDID*) if the deal is tender (*TENDEROFFER*) and if there are at least two acquirers making an offer to a target (*COMPETINGBID*). In all regressions, we include industry and year fixed effects and report *t*-statistics with robust standard errors clustered at the firm level. Year fixed effects allow us to control for common macroeconomic factors, whereas industry fixed effects account for all time-invariant industry-level characteristics which might be correlated with both the level of acquirer performance and board co-option.

3.4 Descriptive statistics and correlations

Table 2 presents the descriptive statistics for the variables used in our main analyses. Panel A reports our main dependent variable. The mean value of acquirer performance, *CAR*, is 0.0020. This positive mean value indicates that, on average, the sample acquirers earn positive abnormal returns of 0.2% during the three days surrounding the announcement date. Board co-option measures, *PCO_OPT* and *NCO_OPT* on average, have means of 0.4615 and 4.6197 and 0, respectively, meaning that nearly a half of the directors are appointed after the incumbent CEOs assume office and that there is a difference of five between the number of co-opted directors and the total number of directors the on the board.

Panel B shows the summary statistics of bidder characteristics. The average natural logarithm of firms' assets in our sample is 7.9, generated from the un-tabulated average total assets of $2.84 billion. The average leverage ratio and cash holding of the acquiring firm are 0.2328 and 0.1483, respectively, indicating that a typical firm in our sample finances 23.28% of its assets by debt and maintains 14.83% of cash holding. As reflected by a Tobin's Q of 2.0136, the sample comprises growing firms that possess future growth opportunities valued by the market who generate a positive profitability performance of 1.45% return on assets. A typical firm in our sample is followed by 10 analysts (reported as a corresponding natural logarithm of 1.9856) prior to the deal announcement.

Turning to corporate governance in Panel C, more than half of the CEO (53.07%) also hold a Chair position. A typical CEO's tenure is four years and an average board has about 10 members (which translate into logarithm value of 1.5474 and 2.3973, respectively). More than half of the board (68.24%) are independent directors. Panel D reports the descriptive statistics for deal characteristics. On average, the relative size of the deal to market capitalisation of the bidder is 19.41%; 31.25% of the deals are financed solely in cash and 14.07% are paid by stock. We find that acquiring a target in a related industry is quite common (52.95%), whereas only 6.48% of the deals are tender offers and 2.36% of the acquisitions attract competing bidders.

Table 3 reports the results of the correlation matrix. We find that acquirer performance is negatively and significantly correlated with both measures of board co-option. Such findings underpin and support our hypothesis that the market does not react favourably to takeovers conducted by firms with a high proportion of co-opted directors on the board. The correlations among the three board co-option variables (*PCO_OPT*, *NCO_OPT* and *RCO_OPT*) are above 0.89 and board size and firm size variables, *BOARD_SIZE* and *SIZE*, have a high correlation of 0.62, which is consistent with expectations in the literature. The correlations among the

Table 2. Descriptive statistics

	Mean	Std. Dev.	1st quartile	Median	3rd quartile
Panel A: dependent and independent variables					
CAR	0.0020	0.0621	−0.0252	0.0006	0.0265
PCO_OPT	0.4615	0.3543	0.1250	0.4545	0.7333
NCO_OPT	4.6176	3.9859	1.0000	4.0000	7.0000
RCO_OPT	−0.0000	0.3440	−0.2883	0.0084	0.2542
Panel B: firm characteristics					
SIZE	7.9114	2.1402	6.4928	7.9058	9.3755
TA ($mil)	28400.8691	131142.7569	660.3410	2712.8980	11795.3110
LEV	0.2328	0.1904	0.0739	0.2052	0.3525
CASH	0.1483	0.1666	0.0302	0.0826	0.2046
TOBINQ	2.0136	1.5765	1.1086	1.5001	2.2547
ROA	0.0145	0.1707	0.0064	0.0353	0.0835
Panel C: corporate governance					
CEO_DUALITY	0.5307	0.4991	0.0000	1.0000	1.0000
LNCEO_TENURE	1.5474	0.5997	1.0986	1.6094	1.9459
CEO_TENURE	4.6406	3.6037	2.0000	4.0000	6.0000
LNBOARD_SIZE	2.3973	0.2905	2.1972	2.3979	2.5649
BOARD_SIZE	10.4724	3.4645	8.0000	10.0000	12.0000
BOARD_INDEP	0.6824	0.1680	0.5833	0.7143	0.8000
LNANALYSTS	1.9956	1.0008	1.3863	2.0794	2.7726
NUM_ANALYSTS	10.0168	8.9549	3.0000	7.0000	15.0000
Panel D: deal characteristics					
RELATIVESIZE	0.1941	0.3655	0.0120	0.0576	0.1990
ALLCASH	0.3125	0.4635	0.0000	0.0000	1.0000
ALLSTOCK	0.1407	0.3478	0.0000	0.0000	0.0000
RELATEDID	0.5295	0.4992	0.0000	1.0000	1.0000
TENDEROFFER	0.0648	0.2461	0.0000	0.0000	0.0000
COMPETINGBID	0.0236	0.1518	0.0000	0.0000	0.0000

Note(s): This table presents the descriptive statistics for the main dependent and independent variables in Panel A, acquirer-level financial control variables in Panel B, corporate governance in Panel C and deal characteristics in Panel D. We provide variables definitions in the Appendix
Source(s): Authors' own work

remaining variables are in a small magnitude, signifying that multicollinearity is not a main issue of the models (Gujarati & Porter, 2009).

4. Analyses and results

4.1 Board co-option and market reactions to acquisition announcements

Table 4 presents the results of regressing the board co-option measures on the acquisition performance proxy. We find that acquirer abnormal announcement returns (*CAR*), in all models, are negatively and statistically related to the board co-option measures. Specifically, the coefficient estimates on acquisition performance are negative and significant at the level of 1% in Columns (1)–(3). The results are not only statistically significant but also economically significant. For example, the coefficient estimate reported for acquirer performance in Column (1), which is the model specification using *PCO_OPT* as a proxy for board co-option, is −0.0071. This coefficient estimate suggests that a one-standard-deviation increase in *PCO_OPT* leads to a reduction in *CAR* of 0.0004 (−0.0071 × 0.0621). Considering that the average acquirer announcement return is only 0.0020, the baseline results reported in Table 4 are,

Table 3. Correlation matrix

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
CAR	(1)	1.00																			
PCO_OPT	(2)	−0.05***	1.00																		
NCO_OPT	(3)	−0.06***	0.91***	1.00																	
RCO_OPT	(4)	−0.04***	0.97***	0.89***	1.00																
SIZE	(5)	−0.08***	0.16***	0.36***	0.20***	1.00															
LEV	(6)	0.05***	−0.01	0.01	−0.00	0.21***	1.00														
CASH	(7)	−0.03***	−0.00	−0.09***	−0.03**	−0.27***	−0.33***	1.00													
TOBINQ	(8)	0.01	0.02*	−0.02**	−0.00	−0.07***	−0.18***	0.38***	1.00												
ROA	(9)	0.02	0.09***	0.13***	0.12***	0.30***	0.01	−0.18***	0.09***	1.00											
CEO_DUALITY	(10)	−0.01	−0.01	0.01	0.01	0.12***	0.07***	−0.05***	0.00	0.05***	1.00										
LNCEO_TENURE	(11)	0.01	−0.26***	−0.23***	−0.04***	0.10***	0.06***	−0.09***	−0.12***	0.11***	0.09***	1.00									
LNBOARD_SIZE	(12)	−0.06***	0.17***	0.45***	0.17***	0.62***	0.04***	−0.25***	−0.12***	0.14***	0.02	−0.04***	1.00								
BOARD_INDEP	(13)	0.00	0.09***	0.13***	0.17***	0.15***	−0.02*	−0.02*	−0.10***	0.11***	0.11***	0.37***	0.09***	1.00							
LNANALYSTS	(14)	−0.07***	0.17***	0.24***	0.18***	0.57***	0.02**	0.05***	0.27***	0.26***	0.16***	0.04***	0.30***	0.10***	1.00						
RELATIVESIZE	(15)	0.02**	−0.05***	−0.09***	−0.07***	−0.18***	0.13***	−0.05***	−0.13***	−0.15***	−0.03***	−0.05***	−0.11***	−0.05***	−0.20***	1.00					
ALLCASH	(16)	0.03**	0.06***	0.07***	0.08***	0.08***	0.03**	0.02	−0.02*	0.12***	0.01	0.06***	0.00	0.10***	0.10***	−0.14***	1.00				
ALLSTOCK	(17)	−0.08***	−0.05***	−0.04***	−0.08***	−0.04***	−0.11***	0.04***	0.06***	−0.17***	−0.02	−0.14***	0.07***	−0.16***	−0.05***	0.12***	−0.27***	1.00			
RELATEDBID	(18)	−0.01	−0.01	0.01	−0.01	−0.03**	−0.03**	−0.13***	−0.11***	−0.01	−0.05***	0.03***	0.06***	0.02**	−0.07***	0.08***	−0.06***	0.08***	1.00		
TENDEROFFER	(19)	−0.03***	0.06***	0.07***	0.05***	0.09***	0.00	0.01	0.00	0.04***	0.02*	−0.03***	0.05***	0.00	0.09***	−0.02*	0.20***	−0.05***	−0.01	1.00	
COMPETINGBID	(20)	−0.02*	0.04***	0.03***	0.04***	0.03***	0.03***	0.00	−0.00	0.02	0.02**	0.01	0.01	0.00	0.04***	0.10***	0.06***	0.01	0.03***	0.13***	1.00

Note(s): This table presents the correlation among variables used in the subsequent analyses. All variables are defined in the Appendix. The asterisk *, ** or *** denotes statistical significance at 10%, 5% or 1%, respectively

Source(s): Authors' own work

Table 4. Co-opted board and market reactions to acquisition announcements

	(1) CAR	(2) CAR	(3) CAR
PCO_OPT	−0.0071*** (−3.44)	–	–
NCO_OPT	–	−0.0007*** (−3.57)	–
RCO_OPT	–	–	−0.0064*** (−3.12)
SIZE	−0.0015*** (−2.74)	−0.0014*** (−2.63)	−0.0015*** (−2.77)
LEV	0.0129** (2.55)	0.0129** (2.54)	0.0129** (2.55)
CASH	−0.0143** (−2.48)	−0.0144** (−2.50)	−0.0143** (−2.48)
TOBINQ	0.0028*** (4.71)	0.0028*** (4.70)	0.0028*** (4.71)
ROA	0.0073 (1.21)	0.0071 (1.19)	0.0072 (1.20)
CEO_DUALITY	0.0012 (0.78)	0.0013 (0.83)	0.0012 (0.80)
LNCEO_TENURE	−0.0036** (−2.41)	−0.0036** (−2.35)	−0.0026* (−1.86)
LNBOARD_SIZE	0.0007 (0.21)	0.0031 (0.88)	0.0007 (0.21)
BOARD_INDEP	−0.0015 (−0.28)	−0.0014 (−0.26)	−0.0018 (−0.33)
LNANALYSTS	−0.0027*** (−2.71)	−0.0027*** (−2.74)	−0.0027*** (−2.73)
RELATIVESIZE	0.0020 (0.63)	0.0019 (0.63)	0.0020 (0.63)
ALLCASH	0.0023 (1.61)	0.0023 (1.62)	0.0023 (1.60)
ALLSTOCK	−0.0116*** (−4.74)	−0.0117*** (−4.78)	−0.0116*** (−4.73)
RELATEDBID	0.0004 (0.26)	0.0004 (0.25)	0.0004 (0.26)
TENDEROFFER	−0.0057** (−2.25)	−0.0057** (−2.24)	−0.0057** (−2.25)
COMPETINGBID	−0.0048 (−1.07)	−0.0049 (−1.10)	−0.0048 (−1.08)
CONSTANT	0.0128 (0.93)	0.0070 (0.50)	0.0087 (0.62)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
R^2	0.0385	0.0384	0.0382
N	8,939	8,939	8,939

Note(s): This table presents the regression results of co-opted boards on acquisition performance with other control variables. Robust two-tailed *t*-statistics clustered by firm are presented in parentheses. The superscripts ***, ** and * correspond to statistical significance at the 1%, 5% and 10% levels, respectively. We present the variable definitions in the Appendix

Source(s): Authors' own work

therefore, both statistically and economically significant. The results are consistent with the prediction that board co-option reduces abnormal returns surrounding the announcement date.

For other variables – deals initiated by large acquirers and acquirers with a high level of cash holding, greater analyst coverage, paying the deals solely by stock, offering tender deals and being conducted by long-tenured CEOs seem to be responded to negatively by the market. By contrast, highly leveraged and highly valuated acquirers are likely to outperform over the announcement period. These results are generally consistent with prior literature (e.g. Luong *et al.*, 2021; Masulis *et al.*, 2007; Moeller *et al.*, 2004; Rosen, 2006; Schwert, 2000).

4.2 Endogeneity correction

Our results suggest thus far that board co-option negatively relates to acquirer performance. We now consider endogeneity issues that are prevalent because of the black-box nature of the corporate boardroom (Wintoki, Linck, & Netter, 2012). First, although using stock market reactions reduces the potential reverse causality, it may still be present when high-performing acquisitions could change the board co-option. For example, the existing evidence suggests that acquisition performance affects CEOs' ability to build networks through firm reputation (Hoang & Antoncic, 2003), altering CEOs' ability to attract and influence the recruitment of directors in the CEOs' connection. Second, despite the fact that we have included a range of control variables in our model, there is a possibility that we may have omitted some variables that might mechanically impact this relationship (Larcker & Rusticus, 2010). For example, some unidentified factors, such as executives' personal and demographic backgrounds (Jensen & Zajac, 2004) or organisational culture (Davidson, Dey, & Smith, 2015; Schoenberg, 2000), may affect both recruitment strategies and acquisition decisions. Finally, a possibility exists that the relation between our variables in our model can be problematic because CEO attributes and board characteristics, such as CEO duality, CEO tenure, board size and board independence, can drive both board co-option and acquisition performance (Bertrand & Schoar, 2003; Finkelstein, Hambrick, & Cannella, 2009; Gunasekarage, Luong, & Truong, 2020; Zhou *et al.*, 2020), allowing one to believe that the acquisition returns are potentially the outcome of CEO and board characteristics rather than board co-option. To address the above endogeneity concerns, we follow prior studies (Wintoki *et al.*, 2012; Wooldridge, 2010) and adopt three sophisticated techniques –PSM, IV 2SLS regressions and Lasso selection and inference models – to explore if our contention holds un endogeneity assumptions.

4.2.1 Propensity score matching approach. As a further cross-check of the baseline results, we employ a PSM analysis to address both the selection bias arising from firm-related characteristics and bias-omitted variables (Rosenbaum & Rubin, 1983). To execute our PSM analysis, we define firms whose proportion of board co-option is above the industry and year median as the treatment group. The control firms are those whose ratio of board co-option is below the industry and year median value.

To ensure that our treated and control firms are comparable, we match treatment and control firms using PSM, where we utilise the nearest neighbour with replacement matching using a calliper of 0.01. In the first stage, the matching procedure is undertaken based on all the control variables that are used in the baseline regressions in Table 4. We report the results in Table 5. Panel A of Table 5 reports the univariate mean comparisons between treatment and control firms' characteristics and their corresponding *t*-statistics. The results demonstrate that the average values of the matching variables are qualitatively the same across the treatment and control firms. We then perform PSM regressions using the post-matched sample in the second stage reported in Panel B of Table 5. The coefficients of board co-option measures remain negative and significant at the 1% level. These findings are consistent with our baseline results that show the presence of co-opted directors lowers the announcement returns of acquirers. The results indicate that our baseline finding that board co-option aggravates acquisition performance is not confounded by potential self-selection bias and omitted variables of the regression residuals.

4.2.2 Instrumental variables. In this subsection, we adopt the IV approach to address the potential endogeneity concerns. We follow Li, Gong, Zhang, and Koh (2018) to use board

Table 5. Co-opted board and market reactions to acquisition announcements: propensity score matching analysis

Panel A: mean differences between control and matched groups

	High DPCO_OPT (treated group)	Low DPCO_OPT (control group)		High DNCO_OPT (treated group)	Low DNCO_OPT (control group)		High DRCO_OPT (treated group)	Low DRCO_OPT (control group)	
	Mean	Mean	*p*-value	Mean	Mean	*p*-value	Mean	Mean	*p*-value
SIZE	7.8237	7.8723	0.35	7.9474	8.0030	0.30	7.7550	7.7816	0.59
LEV	0.2327	0.2309	0.69	0.2346	0.2343	0.96	0.2371	0.2259	0.16
CASH	0.1503	0.1489	0.74	0.1434	0.1432	0.96	0.1492	0.1519	0.51
TOBINQ	1.9102	1.9893	0.23	1.9716	1.9534	0.64	1.9677	2.0533	0.26
ROA	0.0124	0.0162	0.34	0.0192	0.0195	0.93	0.0114	0.0184	0.18
CEO_DUALITY	0.5271	0.5262	0.94	0.5245	0.5120	0.35	0.5289	0.5251	0.75
LNCEO_TENURE	1.5708	1.5358	0.15	1.5450	1.5343	0.49	1.5830	1.5611	0.13
LNBOARD_SIZE	2.3956	2.4049	0.19	2.4212	2.4283	0.31	2.3836	2.3920	0.24
BOARD_INDEP	0.68611	0.6846	0.72	0.6884	0.6901	0.71	0.6786	0.6789	0.93
LNANALYSTS	1.9653	2.0024	0.12	2.0280	2.0443	0.53	1.9263	1.9939	0.15
RELATIVESIZE	0.2108	0.1959	0.11	0.2048	0.1914	0.18	0.2155	0.1929	0.12
ALLCASH	0.3009	0.3277	0.20	0.2939	0.3400	0.10	0.2955	0.3228	0.15
ALLSTOCK	0.1410	0.1342	0.42	0.1566	0.1299	0.15	0.1555	0.1384	0.14
RELATEDBID	0.5253	0.5293	0.74	0.5358	0.5402	0.74	0.5324	0.5410	0.48
TENDEROFFER	0.0620	0.0672	0.39	0.0607	0.0684	0.24	0.0596	0.0629	0.57
COMPETINGBID	0.0172	0.0324	0.00	0.0157	0.0336	0.00	0.0211	0.0291	0.04

Panel B: propensity score matching regression results

	Panel A: first stage			Panel B: second stage		
	(1) DPCO_OPT	(2) DNCO_OPT	(3) DRCO_OPT	(4) CAR	(5) CAR	(6) CAR
PCO_OPT	–	–	–	−0.0068*** (−2.86)	–	–
NCO_OPT	–	–	–	–	−0.0007*** (−2.83)	–
RCO_OPT	–	–	–	–	–	−0.0057** (−2.45)
SIZE	0.0149*** (3.34)	0.0084 (1.55)	0.0182*** (4.14)	−0.0016** (−2.36)	−0.0011 (−1.53)	−0.0010 (−1.49)
LEV	0.0154 (0.56)	0.0358 (1.17)	0.0152 (0.56)	0.0140*** (2.72)	0.0150*** (2.70)	0.0101** (2.04)
CASH	0.0337 (0.89)	0.0505 (1.21)	0.0469 (1.21)	−0.0147** (−2.40)	−0.0082 (−1.23)	−0.0167*** (−2.81)
TOBINQ	−0.0034 (−0.81)	−0.0029 (−0.59)	−0.0031 (−0.74)	0.0023*** (3.35)	0.0024*** (3.40)	0.0025*** (4.09)
ROA	0.0515** (2.46)	0.0726*** (2.73)	0.0396* (1.89)	0.0096* (1.77)	0.0148** (2.43)	0.0104* (1.94)
CEO_DUALITY	0.0142 (1.35)	0.0065 (0.54)	0.0136 (1.30)	0.0014 (0.82)	0.0018 (0.98)	0.0012 (0.70)
LNCEO_TENURE	−0.1874*** (−16.45)	−0.1919*** (−15.17)	−0.2127*** (−19.71)	−0.0023 (−1.27)	−0.0025 (−1.36)	−0.0030* (−1.70)
LNBOARD_SIZE	−0.0042 (−0.22)	−0.1562*** (−6.62)	−0.0038 (−0.21)	0.0021 (0.55)	0.0028 (0.62)	−0.0000 (−0.00)

(*continued*)

Table 5. Continued

Panel B: propensity score matching regression results

	Panel A: first stage			Panel B: second stage		
	(1) DPCO_OPT	(2) DNCO_OPT	(3) DRCO_OPT	(4) CAR	(5) CAR	(6) CAR
BOARD_INDEP	0.0540*	0.0588*	0.0444	−0.0048	−0.0035	−0.0034
	(1.71)	(1.72)	(1.48)	(−0.82)	(−0.55)	(−0.58)
LNANALYSTS	0.0227***	0.0285***	0.0242***	−0.0029**	−0.0040***	−0.0034***
	(3.79)	(4.28)	(4.20)	(−2.52)	(−3.17)	(−3.04)
RELATIVESIZE	–	–	–	0.0042*	0.0021	0.0030
				(1.86)	(0.86)	(1.36)
ALLCASH	–	–	–	0.0018	0.0005	0.0033*
				(0.97)	(0.23)	(1.79)
ALLSTOCK	–	–	–	−0.0113***	−0.0114***	−0.0109***
				(−4.50)	(−4.29)	(−4.55)
RELATEDBID	–	–	–	0.0002	−0.0003	0.0005
				(0.12)	(−0.18)	(0.29)
TENDEROFFER	–	–	–	−0.0027	−0.0034	−0.0052
				(−0.81)	(−0.93)	(−1.56)
COMPETINGBID	–	–	–	−0.0065	−0.0064	−0.0090*
				(−1.26)	(−1.15)	(−1.79)
CONSTANT	0.0635	0.4850***	0.3755***	0.0696*	0.0099	−0.0007
	(0.60)	(3.04)	(3.74)	(1.79)	(0.21)	(−0.03)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Wald chi square	949.9656	1683.9419	904.9965	0.0434	0.0441	0.0407
Pseudo R^2/R^2	0.0773	0.1392	0.0730			
N	8,939	8,939	8,939	6,480	5,464	6,802

Note(s): This table presents the PSM results of co-opted board and acquisition performance with other control variables. Panel A reports the mean differences between the control group and matched group. Panel B reports the regression estimates using these two groups. The superscripts ***, ** and * correspond to statistical significance at the 1%, 5% and 10% levels, respectively. We present the variable definitions in the Appendix
Source(s): Authors' own work

co-option in the earliest year (*PCO_OPT_FIRST*, *NCO_OPT_FIRST* and *RCO_OPT_FIRST*) as the IVs. We refer to Larcker and Rusticus (2010) to identify and verify a valid IV that satisfies three major criteria, namely relevance, exclusion restriction and exogeneity.

First, the relevance condition requires that the IV is correlated with the respective endogenous regressor (i.e. *PCO_OPT*, *NCO_OPT* and *RCO_OPT*). Empirically, a firm's board structure is relatively stable overtime (Graham, Kim, & Leary, 2017) with board independence exhibits persistence and path-dependence (Hermalin & Weisbach, 1998). Therefore, board dynamics can influence directors' tenure and initial board co-option is likely to continue, at least partially, into the subsequent years, which provides a strong correlation with the board co-option in the concurrent year.

Second, to satisfy the exclusion restriction criterion, it is unlikely that our IV, the initial board co-option, will not have a direct effect on the acquisition decisions in subsequent years. Clearly, the board's composition in its earliest formation occurs before the particular acquisition decisions in the concurrent year. Since the initial board co-option establishes a foundational structure, it is expected to influence later decisions indirectly, primarily through its effect on board independence and monitoring capabilities (Coles *et al.*, 2014; Zaman *et al.*, 2021). Therefore, the initial board co-option serves as a valid instrument because it meets the exclusion restriction criterion by ensuring that its effects on the dependent variable, acquisition

performance, occur solely through its established relationship with board dynamics rather than direct influence.

Third, the exogeneity criterion requires that the IV must not be correlated with the error term in the model, ensuring that any unobserved factors affecting the dependent variable are unrelated to the IV. In our setting, since this initial co-option occurs prior to the specific acquisition decisions being made in subsequent years, it is unlikely to be influenced by unobserved factors that might affect the firm's acquisition decisions later. Furthermore, the firm's board structure, especially its initial co-option state, reflects historical governance dynamics rather than immediate business decisions (Larcker & Rusticus, 2010; Jiraporn & Lee, 2018). This temporal separation between the board co-option and acquisition decisions reduces the risk of reverse causality or omitted variable bias, ensuring that the initial board co-option is not correlated with the error term. Thus, the exogeneity assumption holds, as the IV influences acquisition outcomes only through its effect on board dynamics, not through any direct correlation with the unobservable factors captured in the model's error term (Larcker & Rusticus, 2010; Coles *et al.*, 2014).

We report the results in Table 6. In all regressions, we include industry and year fixed effects and report *t*-statistics with robust standard errors clustered at the firm level. In Panel A, we present the first-stage regression results using three measures of board co-option, *PCO_OPT*, *NCO_OPT* and *RCO_OPT* as the dependent variables and the instruments as the main independent variables in Columns (1)–(3). The coefficient estimates on *PCO_OPT_FIRST*, *NCO_OPT_FIRST* and *RCO_OPT_FIRST* in the three first-stage regressions are positive and significant at the 1% level, suggesting that our IVs are positively associated with board co-option. The *p*-value of the Kleibergen-Paap rk Wald *F* statistic of the first-stage regressions is significant at the 1% level, rejecting the null hypothesis of weak identification (Larcker & Rusticus, 2010). Therefore, the coefficient estimates and their corresponding *t*-statistics in the second stage are likely to be unbiased and inferences based on them are reasonably valid. We then present the second-stage regression results in Columns (4)–(6). The coefficient estimates on the instrumented values of board co-option are negative and statistically significant at the 1% level across all columns. The IV regression results are consistent with our baseline findings and further support our predictions that board co-option reduces acquisition performance.

4.2.3 Model selection through the Lasso method. Regression model used in this study has certain limitations due to its high dimensionality, while explanatory variables can be prone to multicollinearity problem. As a result, it would be difficult to test individual regression coefficients of independent and control variables due to inflated standard errors. Accordingly, we implement the least absolute shrinkage and selection operator (Lasso) to strengthen the regression model by checking the validity of selected variables. This method provides a more robust analysis that allows finding important variables in a large set of potential determinants (Tibshirani, 1996; Belloni, Chernozhukov, Fernández-Val, & Hansen, 2017). By using the Lasso method, we can make the results easier to interpret and resolve the problem of multicollinearity since Lasso shrinks regression coefficients by penalising their magnitude and provides a narrow set of important variables.

Panel A of Table 7 presents the results of the Lasso selection model for board co-option and acquisition performance. Three types of Lasso model selection methods (adaptive, cross-validation and plug-in) are used to estimate effects for potential independent and control variables to be included in the model. We observe that both independent and control variables are similar in terms of their coefficients to baseline regression. Most of the explanatory variables also hold their respective coefficient signs in the Lasso selection model. Therefore, the selection of variables is well justified and does not significantly affect the impact of board co-option on acquisition performance.

We should also note that Lasso models are inherently selection models. This group of models select covariates and estimates coefficients without providing standard errors. However, several modified versions of the Lasso model allow for deriving standard errors of estimates. Specifically, the double-selection Lasso method uses selected control variables in

Table 6. Endogeneity-corrected regression output

	Panel A: first stage			Panel B: second stage		
	(1) PCO_OPT	(2) NCO_OPT	(3) RCO_OPT	(4) CAR	(5) CAR	(6) CAR
PCO_OPT_FIRST	0.6017*** (37.28)	–	–	–	–	–
NCO_OPT_FIRST	–	0.0523*** (23.00)	–	–	–	–
RCO_OPT_FIRST	–	–	0.6241*** (40.40)	–	–	–
IVPCO_OPT	–	–	–	−0.0091*** (−3.39)	–	–
IVNCO_OPT	–	–	–	–	−0.0087*** (−3.50)	–
IVRCO_OPT	–	–	–	–	–	−0.0094*** (−3.40)
SIZE	0.0149*** (3.34)	0.0084 (1.55)	0.0182*** (4.14)	−0.0016*** (−3.04)	−0.0017*** (−3.07)	−0.0017*** (−3.07)
LEV	0.0154 (0.56)	0.0358 (1.17)	0.0152 (0.56)	0.0130** (2.57)	0.0129** (2.54)	0.0129** (2.54)
CASH	0.0337 (0.89)	0.0505 (1.21)	0.0469 (1.21)	−0.0144** (−2.50)	−0.0141** (−2.44)	−0.0141** (−2.44)
TOBINQ	−0.0034 (−0.81)	−0.0029 (−0.59)	−0.0031 (−0.74)	0.0028*** (4.80)	0.0028*** (4.74)	0.0028*** (4.74)
ROA	0.0515** (2.46)	0.0726*** (2.73)	0.0396* (1.89)	0.0065 (1.09)	0.0063 (1.04)	0.0062 (1.04)
CEO_DUALITY	0.0142 (1.35)	0.0065 (0.54)	0.0136 (1.30)	0.0013 (0.82)	0.0012 (0.79)	0.0012 (0.79)
LNCEO_TENURE	−0.1874*** (−16.45)	−0.1919*** (−15.17)	−0.2127*** (−19.71)	−0.0021 (−1.55)	−0.0020 (−1.45)	−0.0020 (−1.45)
LNBOARD_SIZE	−0.0042 (−0.22)	−0.1562*** (−6.62)	−0.0038 (−0.21)	0.0001 (0.04)	−0.0001 (−0.04)	−0.0001 (−0.04)
BOARD_INDEP	0.0540* (1.71)	0.0588* (1.72)	0.0444 (1.48)	−0.0034 (−0.64)	−0.0025 (−0.47)	−0.0025 (−0.47)
LNANALYSTS	0.0227*** (3.79)	0.0285*** (4.28)	0.0242*** (4.20)	−0.0028*** (−2.87)	−0.0028*** (−2.83)	−0.0028*** (−2.83)
RELATIVESIZE	–	–	–	0.0020 (0.64)	0.0012 (0.39)	0.0012 (0.38)
ALLCASH	–	–	–	0.0023 (1.62)	0.0023 (1.59)	0.0023 (1.59)
ALLSTOCK	–	–	–	−0.0115*** (−4.70)	−0.0120*** (−4.88)	−0.0120*** (−4.89)
RELATEDBID	–	–	–	0.0004 (0.25)	0.0005 (0.34)	0.0005 (0.34)
TENDEROFFER	–	–	–	−0.0057** (−2.26)	−0.0056** (−2.18)	−0.0056** (−2.18)
COMPETINGBID	–	–	–	−0.0051 (−1.15)	−0.0046 (−1.02)	−0.0048 (−1.06)
CONSTANT	0.0635 (0.60)	0.4850*** (3.04)	0.3755*** (3.74)	0.0126 (0.90)	0.0132 (0.95)	0.0132 (0.94)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.5250	0.4667	0.5428	0.0384	0.0385	0.0385
N	8,939	8,939	8,939	8,939	8,939	8,939
Weak identification test						

(*continued*)

Table 6. Continued

	Panel A: first stage			Panel B: second stage		
	(1) PCO_OPT	(2) NCO_OPT	(3) RCO_OPT	(4) CAR	(5) CAR	(6) CAR
Kleibergen-Paap rk Wald *F* statistic	3682.84	3890.09	3419.81	–	–	–
p-value	0.0000	0.0000	0.0000			
Test of endogeneity: Durbin–Wu–Hausman test						
F statistics	–	–	–	11.47	12.28	11.58
p-value				0.0007	0.0005	0.0007

Note(s): This table reports the endogeneity-corrected regression results by employing the 2SLS regressions approach. Panel A reports first-stage regression output where the categorical PCO_OPT, NCO_OPT and RCO_OPT variables are regressed on the respective instrumental variables with other firm-specific control variables. Panel B reports the second-stage regression output where the acquisition performance is regressed on the instrumented PCO_OPT, NCO_OPT and RCO_OPT variables and other control variables. Robust two-tailed *t*-statistics clustered by firm are presented in parentheses. The superscripts ***, ** and * correspond to statistical significance at the 1%, 5% and 10% levels, respectively

Source(s): Authors' own work

the inference model to estimate effects for variables of interest (Belloni, Chernozhukov, & Hansen, 2014). We present the results of the double-selection Lasso method in Panel B of Table 7, where the control variables are selected by the Lasso model for the variables of interest to be included in the model. One should note that double selection Lasso does not provide estimates of the coefficients on the control variables or their standard errors (Belloni *et al.*, 2014). However, the estimation results for three variables of interest representing board co-option are similar to baseline regression results.

4.3 Additional analysis

4.3.1 Role of CEO characteristics. We have evidenced that board co-option negatively affects returns to acquirers surrounding the acquisition announcement. However, prior studies suggest that CEO characteristics such as CEO age, risk-taking incentives, tenure and gender can significantly influence acquisition decisions and outcomes. Younger CEOs face stronger incentives to pursue acquisitions since they have longer career horizons over which to reap the benefits. While compensation benefits associated with empire-building suggest CEOs have greater incentives to pursue acquisitions earlier in their career, career concerns may make younger CEOs reluctant to jeopardise future earnings and therefore avoid risky activities (Yim, 2013). Furthermore, the organisational legitimacy literature shows that the pressure for legitimacy should be greater for the CEOs who are younger who want to establish legitimacy also for a career perspective (De Franco, Hou, & Ma, 2022). Similarly, CEO vega, a measure of risk-taking incentives, captures the extent to which a CEO's compensation is tied to risk, such as stock options. CEOs with higher vega are more likely to pursue riskier acquisitions due to the potential for greater personal financial gain (Hagendorff & Vallascas, 2011). CEO tenure plays a critical role as well, as long-tenured CEOs may have established stronger ties with the board, giving co-opted directors greater influence over strategic decisions such as acquisitions. Finally, CEO gender is another important dimension to consider. Prior research has shown that female CEOs may approach acquisitions with different leadership styles or risk profiles compared to their male counterparts (Cumming, Leung, & Rui, 2015; Luong *et al.*, 2023). The dynamics between co-opted boards and female CEOs could vary significantly, potentially leading to different acquisition outcomes (Frye & Pham, 2018). These arguments indicate a differential relationship between board co-options and acquisition performance across the CEO characteristic divide. To account for these possible influences, we created four variables:

Table 7. Lasso selection and Lasso reference models

	(1) CAR	(2) CAR	(3) CAR	(4) CAR	(5) CAR	(6) CAR	(7) CAR	(8) CAR	(9) CAR
Panel A: Lasso selection models									
PCO_OPT	−0.0042	−0.0046	−0.0005	–	–	–	–	–	–
NCO_OPT	–	–	–	−0.0004	−0.0005	−0.0002	–	–	–
RCO_OPT	–	–	–	–	–	–	−0.0046	−0.0048	–
SIZE	−0.0016	−0.0020	−0.0007	−0.0014	−0.0015	−0.0006	−0.0016	−0.0019	−0.0007
LEV	0.0116	0.0135	0.0013	0.0116	0.0137	0.0009	0.0120	0.0135	0.0013
CASH	−0.0104	−0.0147	X	−0.0113	−0.0143	X	−0.0113	−0.0147	X
TOBINQ	0.0016	0.0022	X	0.0018	0.0024	X	0.0018	0.0023	X
ROA	0.0039	0.0038	X	0.0043	0.0057	X	0.0047	0.0045	X
CEO_DUALITY	−0.0001	X	X	X	X	X	X	X	X
LNCEO_TENURE	X	X	X	−0.0005	−0.0016	X	−0.0001	X	X
LNBOARD_SIZE	X	X	X	X	X	X	X	X	X
BOARD_INDEP	X	X	X	X	X	X	X	X	X
LNANALYSTS	−0.0020	−0.0021	−0.0006	−0.0021	−0.0025	−0.0006	−0.0022	−0.0022	−0.0006
RELATIVESIZE	0.0006	X	X	0.0008	0.0008	X	0.0009	X	X
ALLCASH	0.0011	0.0005	X	0.0013	0.0019	X	0.0014	0.0009	X
ALLSTOCK	−0.0111	−0.0126	−0.0048	−0.0111	−0.0121	−0.0049	−0.0112	−0.0125	−0.0048
RELATEDBID	−0.0003	X	X	−0.0004	−0.0004	X	−0.0006	X	X
TENDEROFFER	−0.0034	−0.0033	X	−0.0038	−0.0050	X	−0.0040	−0.0038	X
COMPETINGBID	−0.0011	X	X	−0.0018	−0.0021	X	−0.0020	X	X
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	8,939	8,939	8,939	8,939	8,939	8,939	8,939	8,939	8,939
Panel B: Lasso inference models									
PCO_OPT	−0.0071***	−0.0071***	−0.0074***	–	–	–	–	–	–
	(0.00)	(0.00)	(0.00)						
NCO_OPT	–	–	–	−0.0007***	−0.0007***	−0.0007***	–	–	–
				(0.00)	(0.00)	(0.00)			

(*continued*)

Table 7. Continued

	(1) CAR	(2) CAR	(3) CAR	(4) CAR	(5) CAR	(6) CAR	(7) CAR	(8) CAR	(9) CAR
RCO_OPT	–	–	–	–	–	–	−0.0064**	−0.0064**	−0.0068***
							(0.00)	(0.00)	(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	8,939	8,939	8,939	8,939	8,939	8,939	8,939	8,939	8,939

Note(s): This table presents the results of the Lasso selection model for board co-option and acquisition performance. The Lasso model selection method (Panel A) is used to estimate effects for potential independent and control variables to be included in the model. Model 1 uses adaptive Lasso selection model; Model 2 is Lasso selection model with cross-validation method; Model 3 employs plug-in method. Omitted variables by the Lasso selection are denoted as (X). Panel B presents Lasso inference models based on double-selection Lasso regression

Source(s): Authors' own work

the first for young CEOs, taking the value of one if the CEOs are younger than 65 years old; the second for CEO vega, differentiating high and low risk-taking incentives; the third for CEO tenure, categorising short and long tenure; and the fourth for CEO gender, distinguishing between male and female CEOs We partition the sample based on these CEO characteristics and re-estimate equation (1) for each sub-sample. The results are reported in Table 8.

In Panel A, we find that the coefficients generated by board co-option variables are negative and significant in the old CEO subsample, aligning with the acquisition literature that old CEOs are less incentivised in pursuing acquisitions. By contrast, board co-option variables generate marginal significant or insignificant coefficients in the young CEO subsample, suggesting that the negative impact of board co-option on acquisition performance is more pronounced if CEOs are young. The chi-square tests indicate that the differences in the estimations are statistically different. It appears that, being incentivised by long-term career perspective and under pressure for legitimacy, younger CEOs tend to make the board co-option and acquisition performance less pronounced. In Panel B, our results indicate that co-option has a stronger negative effect on acquisition returns for high vega CEOs, reflecting that risk-taking CEOs may not be properly monitored when boards are dominated by co-opted directors. For low vega CEOs, the impact of co-option is less pronounced, likely reflecting their more conservative approach to acquisitions. Panel C examines the role of CEO tenure. We find that the negative impact of board co-option is stronger for long-tenured CEOs, who may have built stronger ties with the board thus exhibiting higher influence in acquisition decisions. In contrast, for short-tenured CEOs, the effects of co-option are weaker, as these CEOs may not have established as much control over the board, resulting in less entrenched dynamics. Panel D reports that co-opted boards have a more significant negative impact on acquisition performance for male CEOs compared to female CEOs. For male CEOs, co-opted boards exert stronger control over decision-making, leading to more negative acquisition outcomes.

4.3.2 Internal and external monitoring. 4.3.2.1 Entrenchment index. Thus far, we have revealed that the presence of board co-option reduces announcement returns to acquirers. This effect, however, presumably varies with differences in the level of internal control. This is because managers of firms with weak corporate governance could make strategic decisions to reduce stakeholder power which affects corporate efficiency negatively (Hill & Jones, 1992). The purposive managerial actions include withholding non-public or adverse financial information to cover up their value-destroying actions. Moreover, weak internal control provides opportunities for managers to pursue short-term investments which may be costly to shareholders' wealth (Armstrong, Balakrishnan, & Cohen, 2012; Ulupinar, 2018).

Following prior studies (Bebchuk, Cohen and Wang, 2013), we use the entrenchment index (*EINDEX*) to divide companies into two groups as weakly governed firms and well-governed firms: the yearly median *EINDEX* is used as the cut-off point. Accordingly, *HIGH_EINDEX* takes the value of one if the firm's *EINDEX* is greater than or equal to the yearly median *EINDEX*, and zero otherwise. We re-estimate our baseline model in the two subsamples. This provides a powerful test because internal control can significantly impact acquisition decisions and the potential co-opted relationship between the CEO and directors (Masulis *et al.*, 2007). Panel A of Table 9 reports that the coefficients of board co-option proxies in Columns (1), (3) and (5) for firms with a high *EINDEX*, representing weak internal control, are negative and significant at the 5% level or higher (coefficient = −0.0106, −0.0010 and −0.0102, respectively, p-value <0.1), while being insignificant in Column (2), (4) and (6) for the low-*EINDEX* subsample. These results suggest that the relationship between board co-option and acquisition performance is more severe in poorly governed firms. This finding suggests that firms with entrenched boards are less likely to actively monitor the acquisition decision of the highly co-opted board, leading them to drive the negative relationship between board co-option and acquisition in our sample.

Table 8. Co-opted board and market reactions to acquisition announcements: the role of CEO characteristics

Panel A: CEO age

	YoungCEO (1) CAR	Old CEO (2) CAR	Young CEO (3) CAR	OldCEO (4) CAR	Young CEO (5) CAR	Old CEO (6) CAR
PCO_OPT	−0.0059*	−0.0083***				
	(−1.74)	(−3.20)				
NCO_OPT			−0.0006*	−0.0007***		
			(−1.83)	(−3.19)		
RCO_OPT					−0.0053	−0.0075***
					(−1.55)	(−2.92)
CONSTANT	0.0303	−0.0117	0.0241	−0.0174	0.0267	−0.0164
	(1.14)	(−0.56)	(0.91)	(−0.82)	(1.00)	(−0.78)
Chi-square difference	(0.07)		(0.06)		(0.00)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0481	0.0529	0.0481	0.0526	0.0480	0.0526
N	3,849	5,090	3,849	5,090	3,849	5,090

Panel B: CEO vega

	High CEO vega (1) CAR	Low CEO vega (2) CAR	High CEO vega (3) CAR	Low CEO vega (4) CAR	High CEO vega (5) CAR	Low CEO vega (6) CAR
PCO_OPT	−0.0119***	−0.0042*				
	(−3.13)	(−1.73)				
NCO_OPT			−0.0009***	−0.0004*		
			(−2.76)	(−1.95)		
RCO_OPT					−0.0113***	−0.0036
					(−2.97)	(−1.49)
CONSTANT	0.0051	0.0122	−0.0077	0.0084	−0.0027	0.0099
	(0.31)	(0.74)	(−0.46)	(0.51)	(−0.16)	(0.60)
Chi-square difference	(0.05)		(0.07)		(0.00)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0909	0.0413	0.0892	0.0414	0.0904	0.0412
N	2,222	6,717	2,222	6,717	2,222	6,717

Panel C: CEO tenure

	Short CEO tenure (1) CAR	Long CEO tenure (2) CAR	Short CEO tenure (3) CAR	Long CEO tenure (4) CAR	Short CEO tenure (5) CAR	Long CEO tenure (6) CAR
PCO_OPT	−0.0035	−0.0093***				
	(−1.42)	(−2.84)				

(*continued*)

Table 8. Continued

Panel C: CEO tenure	Short CEO tenure (1) CAR	Long CEO tenure (2) CAR	Short CEO tenure (3) CAR	Long CEO tenure (4) CAR	Short CEO tenure (5) CAR	Long CEO tenure (6) CAR
NCO_OPT			−0.0004	−0.0007**		
			(−1.58)	(−2.58)		
RCO_OPT					−0.0046*	−0.0087***
					(−1.82)	(−2.72)
CONSTANT	0.0323*	−0.0832*	0.0287	−0.0893*	0.0297	−0.0888**
	(1.79)	(−1.83)	(1.56)	(−1.91)	(1.60)	(−2.20)
Chi-square difference	(0.00)		(0.00)		(0.06)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0434	0.0608	0.0434	0.0600	0.0435	0.0604
N	5,693	3,246	5,693	3,246	5,693	3,246

Panel D: CEO gender	Female CEO (1) CAR	Male CEO (2) CAR	Female CEO (3) CAR	Male CEO (4) CAR	Female CEO (5) CAR	Male CEO (6) CAR
PCO_OPT	−0.0035	−0.0054**				
	(−0.58)	(−2.25)				
NCO_OPT			−0.0003	−0.0004**		
			(−0.63)	(−1.98)		
RCO_OPT					−0.0045	−0.0056**
					(−0.65)	(−2.25)
CONSTANT	0.0154	0.0770	0.0115	0.0735	0.0128	0.0732
	(0.48)	(1.60)	(0.35)	(1.54)	(0.38)	(1.53)
Chi-square difference	(0.00)		(0.00)		(0.00)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.1373	0.0461	0.1373	0.0458	0.1374	0.0461
N	903	5,434	903	5,434	903	5,434

Note(s): This table presents the regression results of the effect of co-opted board on acquisition performance with other control variables for young versus old CEO in Panel A, low versus high CEO vega in Panel B, short versus long CEO tenure in Panel C and female versus male CEO in Panel D. Robust two-tailed *t*-statistics clustered by firm are presented in parentheses. The superscripts ***, ** and * correspond to statistical significance at the 1%, 5% and 10% levels, respectively. We present the variable definitions in the Appendix
Source(s): Authors' own work

4.3.2.2 Institutional ownership. A potentially confounding factor related to our investigation of the relation between board co-option and announcement returns to acquirers is that firms with high institutional ownership are assumed to face more exposure from the public than their counterparts. It has been established that the increased scrutiny of the relationship between

Table 9. Co-opted board and market reactions to acquisition announcements: the role of internal and external monitoring

Panel A: entrenchment index

	High eindex (1) CAR	Low eindex (2) CAR	High eindex (3) CAR	Low eindex (4) CAR	High eindex (5) CAR	Low eindex (6) CAR
PCO_OPT	−0.0106*	−0.0019	–	–	–	–
	(−1.90)	(−0.54)				
NCO_OPT	–	–	−0.0010*	−0.0003	–	–
			(−1.91)	(−0.83)		
RCO_OPT	–	–	–	–	−0.0102*	−0.0016
					(−1.83)	(−0.47)
CONSTANT	0.0234	0.0169	0.0130	0.0146	0.0165	0.0159
	(0.92)	(1.13)	(0.49)	(0.96)	(0.63)	(1.06)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.1138	0.0612	0.1135	0.0613	0.1136	0.0612
N	954	2,763	954	2,763	954	2,763

Panel B: Institutional ownership

	High insto (1) CAR	Low insto (2) CAR	High insto (3) CAR	Low insto (4) CAR	High insto (5) CAR	Low insto (6) CAR
PCO_OPT	−0.0028	−0.0107***	–	–	–	–
	(−0.97)	(−3.52)				
NCO_OPT	–	–	−0.0003	−0.0010***	–	–
			(−1.11)	(−3.54)		
RCO_OPT	–	–	–	–	−0.0023	−0.0099***
					(−0.80)	(−3.27)
CONSTANT	0.0295	0.0149	0.0268	0.0063	0.0281	0.0084
	(0.78)	(1.18)	(0.71)	(0.49)	(0.74)	(0.66)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0525	0.0426	0.0525	0.0422	0.0524	0.0423
N	4,284	4,655	4,284	4,655	4,284	4,655

Note(s): This table presents the regression results of the effect of co-opted board on acquisition performance with other control variables for high versus low entrenchment index in Panel A and high versus low institutional shareholdings in Panel B. Robust two-tailed *t*-statistics clustered by the firm are presented in parentheses. The superscripts ***, ** and * correspond to statistical significance at the 1%, 5% and 10% levels, respectively. We present the variable definitions in the Appendix

Source(s): Authors' own work

board members has fallen more heavily on those firms with large institutional shares (Edmans & Holderness, 2017). Arguably, managers in those firms tend to be more reluctant to exercise self-interest in corporate actions. Therefore, we anticipate that the negative impact of board co-option is less pronounced in this group in response to such exposure to scrutiny. To empirically test our prediction, we split our sample into two groups: (1) firms with high institutional ownership and (2) firms with low institutional ownership. We estimate equation (1) separately for these two groups. Panel B of Table 9 reports the results. We find that the coefficients of board co-option on acquisition performance only remain negative and significant in the

low-institutional-ownership subsample while becoming insignificant in the high-institutional-ownership subsample, meaning that the co-opted board and acquisition performance relationship diminishes when firms are under the scrutiny of institutional shareholders. Therefore, we conclude that institutional ownership alleviates the negative impact of board co-option on acquisition decisions.

4.3.3 Co-opted board and acquisition performance: the role of target board co-option. Next, we empirically examine the role of target firms' co-option boards on the association between bidder co-option board and acquisition performance. We argue that the negative association between bidder co-option and acquisition performance is more pronounced when target firms also have co-opted boards. We present the results in Table 10. Consistent with our predictions, the results show that the negative impact of board co-option on acquisition performance is more evident when the target board's co-option is higher. The findings remain consistent in all three measures of board co-option reported in Panel A of Table 10. However, we do not find the negative and significant impact of bidder co-opted board and market reactions when target firms have a lower proportion of co-opted directors reported in Panel B of Table 10. The findings imply that investors evaluate whether the acquisition decision further deteriorates the co-option structure of the bidder's board following the acquisition of targets with highly co-opted boards.

4.3.4 Deal characteristics. Prior studies find that the market response to acquisition announcements depends on the target's listing status (Chang, 1998; Officer, 2007), the method of payment used (Travlos, 1987), the industry in which the acquirer and target operate (Morck *et al.*, 1990; Shleifer & Vishny, 2003), the size of the deal (Alexandridis, Fuller, Terhaar, & Travlos, 2013) and the location of the target (Bertrand & Betschinger, 2012; Danbolt & Maciver, 2012). We therefore partition the sample according to these characteristics and estimate equation (1) separately for these groups. The findings are reported in Table 11.

In Panel A, when we split the sample into public and non-public targets, we find that the negative association between board co-option and announcement returns is mainly driven by the acquisition of public targets. In Panel B, the negative impact of the presence of co-opted

Table 10. Co-opted board and market reactions to acquisition announcements: the role of target board co-option

	Panel A: high co-opted target board			Panel B: low co-opted target board		
	(1) CAR	(2) CAR	(3) CAR	(4) CAR	(5) CAR	(6) CAR
PCO_OPT	−0.0079**	–	–	−0.0035	–	–
	(−2.36)			(−1.10)		
NCO_OPT	–	−0.0008**	–	–	−0.0004	–
		(−2.53)			(−1.18)	
RCO_OPT	–	–	−0.0075**	–	–	−0.0027
			(−2.26)			(−0.85)
CONSTANT	−0.0227	−0.0296*	−0.0277	−0.0118	−0.0152	−0.0138
	(−1.32)	(−1.66)	(−1.57)	(−0.43)	(−0.55)	(−0.50)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0424	0.0424	0.0423	0.0592	0.0592	0.0591
N	3,248	3,248	3,248	3,567	3,567	3,567

Note(s): This table presents the regression results of the effect of co-opted board on acquisition performance for high and low co-opted target board in Panel A and Panel B, respectively. Robust two-tailed *t*-statistics clustered by firm are presented in parentheses. The superscripts ***, ** and * correspond to statistical significance at the 1%, 5% and 10% levels, respectively. We present the variable definitions in the Appendix

Source(s): Authors' own work

Table 11. Co-opted board and market reactions to acquisition announcements: the role of deal characteristics

Panel A: public and private deals

	Public deal (1) CAR	Private deal (2) CAR	Public deal (3) CAR	Private deal (4) CAR	Public deal (5) CAR	Private deal (6) CAR
PCO_OPT	−0.0080***	−0.0053	–	–	–	–
	(−2.99)	(−1.63)				
NCO_OPT	–	–	−0.0007***	−0.0005*	–	–
			(−3.08)	(−1.68)		
RCO_OPT	–	–	–	–	−0.0073***	−0.0047
					(−2.76)	(−1.44)
CONSTANT	0.0305	−0.0195	0.0235	−0.0236	0.0256	−0.0224
	(1.34)	(−0.74)	(1.05)	(−0.87)	(1.13)	(−0.84)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0566	0.0502	0.0565	0.0501	0.0564	0.0500
N	5,563	3,376	5,563	3,376	5,563	3,376

Panel B: all cash and all stock deals

	All cash deal (1) CAR	All stock deal (2) CAR	All cash deal (3) CAR	All stock deal (4) CAR	All cash deal (5) CAR	All stock deal (6) CAR
PCO_OPT	−0.0060*	−0.0020				
	(−1.88)	(−0.30)				
NCO_OPT			−0.0005*	−0.0003		
			(−1.67)	(−0.65)		
RCO_OPT					−0.0056*	−0.0009
					(−1.77)	(−0.14)
CONSTANT	0.0021	0.2169***	−0.0020	0.2144***	−0.0015	0.2155***
	(0.14)	(3.46)	(−0.12)	(3.42)	(−0.09)	(3.46)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0591	0.1106	0.0587	0.1108	0.0590	0.1106
N	2,793	1,258	2,793	1,258	2,793	1,258

Panel C: related and unrelated deals

	Related deal (1) CAR	Unrelated deal (2) CAR	Related deal (3) CAR	Unrelated deal (4) CAR	Related deal (5) CAR	Unrelated deal (6) CAR
PCO_OPT	−0.0091***	−0.0057*	–	–	–	–
	(−3.28)	(−1.88)				
NCO_OPT	–	–	−0.0009***	−0.0005**	–	–
			(−3.51)	(−1.96)		
RCO_OPT	–	–	–	–	−0.0082***	−0.0052*
					(−2.98)	(−1.73)

(*continued*)

Table 11. Continued

Panel C: related and unrelated deals

	Related deal (1) CAR	Unrelated deal (2) CAR	Related deal (3) CAR	Unrelated deal (4) CAR	Related deal (5) CAR	Unrelated deal (6) CAR
CONSTANT	0.0053	0.0084	−0.0018	0.0031	0.0002	0.0047
	(0.25)	(0.64)	(−0.09)	(0.23)	(0.01)	(0.36)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0566	0.0445	0.0566	0.0444	0.0562	0.0444
N	4,715	4,224	4,715	4,224	4,715	4,224

Panel D: large and small deals

	Large deal (1) CAR	Small deal (2) CAR	Large deal (3) CAR	Small deal (4) CAR	Large deal (5) CAR	Small deal (6) CAR
PCO_OPT	−0.0115***	−0.0045*	–	–	–	–
	(−3.68)	(−1.69)				
NCO_OPT	–	–	−0.0011***	−0.0004	–	–
			(−3.85)	(−1.45)		
RCO_OPT	–	–	–	–	−0.0106***	−0.0041
					(−3.43)	(−1.52)
CONSTANT	−0.0275	0.0241	−0.0369	0.0208	−0.0343	0.0214
	(−1.01)	(1.35)	(−1.31)	(1.15)	(−1.25)	(1.19)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0847	0.0305	0.0846	0.0303	0.0843	0.0304
N	4,431	4,508	4,431	4,508	4,431	4,508

Panel E: foreign deals

	Foreign deals (1) CAR	Domestic deals (2) CAR	Foreign deals (3) CAR	Domestic deals (4) CAR	Foreign deals (5) CAR	Domestic deals (6) CAR
PCO_OPT	−0.0077**	−0.0071***	–	–	–	–
	(−2.08)	(−3.02)				
NCO_OPT	–	–	−0.0007**	−0.0007***	–	–
			(−2.17)	(−3.11)		
RCO_OPT	–	–	–	–	−0.0071*	−0.0064***
					(−1.95)	(−2.73)
CONSTANT	0.0514**	0.0075	0.0454**	0.0015	0.0464**	0.0034
	(2.43)	(0.40)	(2.17)	(0.08)	(2.20)	(0.18)
Controls	Yes	Yes	Yes	Yes	Yes	Yes

(*continued*)

Table 11. Continued

Panel E: foreign deals	Foreign deals (1) CAR	Domestic deals (2) CAR	Foreign deals (3) CAR	Domestic deals (4) CAR	Foreign deals (5) CAR	Domestic deals (6) CAR
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0537	0.0436	0.0535	0.0435	0.0535	0.0434
N	2,266	6,673	2,266	6,673	2,266	6,673

Note(s): This table presents the regression results of the effect of co-opted board on acquisition performance with other control variables for public and private deals in Panel A, all cash and all stock deals in Panel B, related and unrelated deals in Panel C and large and small deals in Panel D, and foreign and domestic deals in Panel E. Robust two-tailed *t*-statistics clustered by firm are presented in parentheses. The superscripts ***, ** and * correspond to statistical significance at the 1%, 5% and 10% levels, respectively. We present the variable definitions in the Appendix
Source(s): Authors' own work

directors on acquisition performance is observed in the cash-only subsample, while it is insignificant in the stock-only subsample. In Panel C, we test whether there is an industry-specific influence on the relationship between board co-option and market reaction to the acquisition announcement. For this purpose, we split the sample into two groups: (1) acquirers and targets in the related industries and (2) acquirers and targets in the unrelated industries. We find that the coefficients of the board co-option variables remain positive and significant across both subsamples for the two measures of board co-option used. However, the coefficients in the related-industry subsample exhibit larger magnitudes and higher significance levels. This finding supports that the related-industry environments offer more opportunities for managers to engage in acquisitions that harm shareholders' wealth. Nonetheless, the reported evidence corroborates that our main results are robust to industry relatedness and that board co-option worsens acquisition performance irrespective of the relatedness in the industries in which acquirers and targets operate.

When we further investigate the influence of deal size by partitioning our sample into large and small deals in Panel D, we find that the higher the percentage and number of co-opted directors on the board, the more pronounced the negative effect it has on the market reaction on the announcement of a large deal. Finally, the sample is divided into two groups of foreign and domestic acquisitions in Panel E. The findings show that the association between board co-option and abnormal return remains negative and in a similar magnitude and significant range for both sub-samples. These findings reveal that high board co-option can be more detrimental through certain types of acquisitions. However, the fact that this analysis failed to uncover positive and significant coefficients for the board co-option measure in any of the subsamples analysed strongly reveals that the presence of co-opted directors on the board does not create value through any of these acquisition choices.

4.3.5 Acquisition efficiency. We now consider if board co-option negatively impacts shareholders' wealth through acquisition; that effect also should be revealed in acquisition efficiency. Therefore, we follow prior literature to investigate the impact of board co-option on a range of acquisition efficiency measures. First, we explore its effect on excessive premiums paid to targets, which is referred to as the main reason for acquisitions that do not enhance shareholders' wealth (Fishman, 1988; Flanagan & O'Shaughnessy, 2003; Mulherin & Boone, 2000; Roll, 1986). Second, we calculate the logarithm of days needed to complete the deal to include in our additional test because this variable represents the level of monitoring intensity

exhibited by the board while assessing the deal (Faleye *et al.*, 2011; Shams, Minnick, Khedmati, & Gunasekarage, 2024). Third, we consider that a partial acquisition can be a proxy for acquisition efficiency because it brings a number of benefits for an organisation, such as risk diversification, economies of scale advantage, promotion of organisational learning and reduced market competition (Nain & Wang, 2018). Finally, following Akhigbe, Martin, and Whyte (2007), we examine deal completion status because an acquisition is a significant corporate decision that consumes both human and financial resources, directly reflecting the effectiveness of the decision.

In this section, we investigate if board co-option is associated with any changes in the acquisition efficiency of acquirers by replacing the dependent variable in our baseline model with four proxies of acquisition efficiency, including bid premium (*BIDPREM*), time taken to complete an acquisition (*LOGDAYS*), the likelihood of conducting a partial acquisition, (*PARACQ*) and the likelihood of completing the deal (*COMPLETED*). We report the findings in Table 12. We find a significant positive association between board co-option and the bid premium paid in acquisitions. This finding corroborates our findings reported in the baseline model that board co-option reduces shareholders' wealth, not only through the market reaction surrounding the announcement date but also through the high premium paid to the target.

We also observe that board co-option variables generate negative and significant coefficients on all of the other three acquisition efficiency variables. In Panel B, firms of highly presented co-opted directors seem to place less emphasis on partial acquisitions, which can limit their strategic flexibility. This phenomenon may arise because co-opted directors often exhibit loyalty to the CEO, potentially leading to a preference for larger, more transformative deals rather than incremental acquisitions that diversify risk (Coles *et al.*, 2014; Hermalin & Weisbach, 1998) while discouraging the pursuit of partial acquisitions that might provide valuable benefits, including risk diversification and opportunities for gradual growth (Nain & Wang, 2018).

Panel C reports that managers in highly co-opted boards spend less time to complete the deal. While a shorter deal completion time might superficially suggest operational efficiency, we argue that this finding actually points to efficiency reduction in acquisitions, as faster deal completion may indicate less rigorous scrutiny by the board. Previous literature emphasises that effective monitoring often requires sufficient time to assess the strategic fit, conduct due diligence and ensure shareholder value (Faleye *et al.*, 2011). When co-opted directors, who are more aligned with the CEO, reduce this scrutiny, it can result in a quicker but less thorough process, potentially leading to suboptimal acquisition outcomes in the long term (Hermalin & Weisbach, 1998; Coles *et al.*, 2014). Therefore, we interpret this faster deal completion as a sign of weakened governance and a reduction in the quality of decision-making, rather than a true improvement in efficiency.

Additionally, Panel D reports that firms with co-opted directors appear less likely to complete acquisition deals, potentially due to weakened governance and oversight. The loyalty of co-opted directors to the CEO may lead to a lack of critical evaluation of proposed acquisitions. As a result, the propensity to finalise acquisitions diminishes, reflecting a governance structure that prioritises CEO preferences over strategic opportunities, ultimately impacting firm performance and shareholder value. Collectively, these findings indicate that board co-option is associated with a reduction in acquisition efficiency.

4.3.6 Change in performance. Thus far, we have reported that board co-option reduces acquisition performance. We next explore what the effect on performance is if a highly co-opted board executes acquisitions inefficiently and the market reacts unfavourably to the deal announcement. To execute this analysis, we calculate the change in performance of the bidders, measured by the return of assets and Tobin's Q and re-estimate equation (1) replacing announcement returns with change in performance variables. The sample of these analyses is reduced to 7,932 and 7,776 observations, respectively. As presented in Table 13, we find that the coefficients of the *PCO_OPT*, *NCO_OPT* and *RCO_OPT* variables are negative and significant in both models estimated, implying that co-opted boards make acquisitions that go

Table 12. Co-opted board and market reactions to acquisition announcements: acquisition efficiency

	Panel A: bid premium			Panel B: partial deals		
	(1) BIDPREM	(2) BIDPREM	(3) BIDPREM	(4) PARACQ	(5) PARACQ	(6) PARACQ
PCO_OPT	0.6112*** (3.42)	–	–	−0.1926** (−2.09)	–	–
NCO_OPT	–	0.0586*** (3.18)	–	–	−0.0158* (−1.77)	–
RCO_OPT	–	–	0.6051*** (3.38)	–	–	−0.1994** (−2.18)
CONSTANT	−1.7518 (−1.14)	−1.2361 (−0.79)	−1.3581 (−0.88)	−2.2066*** (−2.62)	−2.3476*** (−2.82)	−2.3359*** (−2.76)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2/Wald-chi2	0.4041	0.4040	0.4041	1159.9506	1158.9619	1160.2459
N	8,939	8,939	8,939	8,939	8,939	8,939

	Panel C: days to completion			Panel D: completed deals		
	(1) LOGDAYS	(2) LOGDAYS	(3) LOGDAYS	(4) COMPLETED	(5) COMPLETED	(6) COMPLETED
PCO_OPT	−0.2044*** (−2.69)	–	–	−0.3283*** (−2.96)	–	–
NCO_OPT	–	−0.0226*** (−3.09)	–	–	−0.0238** (−2.25)	–
RCO_OPT	–	–	−0.2024*** (−2.68)	–	–	−0.3186*** (−2.91)
CONSTANT	−0.5520 (−0.74)	−0.7547 (−1.00)	−0.6837 (−0.91)	1.6797* (1.83)	1.4604 (1.53)	1.4691 (1.59)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2/Wald-chi2	0.2778	0.2781	0.2778	1544.1527	1542.2412	1545.0912
N	7,099	7,099	7,099	8,939	8,939	8,939

Note(s): This table presents the regression results of co-opted board on acquisition efficiency with other control variables. Robust two-tailed t-statistics clustered by firm are presented in parentheses. The superscripts ***, ** and * correspond to statistical significance at the 1%, 5% and 10% levels, respectively. We present the variable definitions in the Appendix

Source(s): Authors' own work

against shareholders' interests, leading to worse financial performance of the acquirer in the consecutive year.

5. Conclusion

This study examines the impact of board co-option on bidder announcement returns using a sample of US M&As from 1999 to 2019. The results show that bidder cumulative abnormal returns are lower when the board is co-opted. It supports the board's monitoring role and suggests that the monitoring environment is weaker under co-opted boards because of their loyalty to CEOs. We also show that the negative association between board co-option and

Table 13. Co-opted board and change in performance and market valuation

	(1) CH1ROA	(2) CH1ROA	(3) CH1ROA	(4) CH1TOBINQ	(5) CH1TOBINQ	(6) CH1TOBINQ
PCO_OPT	−0.0596**	–	–	−0.2364*	–	–
	(−2.27)			(−1.95)		
NCO_OPT	–	−0.0032*	–	–	−0.0163*	–
		(−1.71)			(−1.74)	
RCO_OPT	–	–	−0.0585**	–	–	−0.2437**
			(−2.20)			(−2.00)
CONSTANT	0.1935	0.1667	0.1555	−0.6816	−0.8119	−0.8395
	(1.31)	(1.07)	(1.00)	(−0.39)	(−0.47)	(−0.49)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0184	0.0178	0.0184	0.1546	0.1543	0.1546
N	7,932	7,932	7,932	7,776	7,776	7,776

Note(s): This table presents the regression results of co-opted board on firms' change in performance (ROA) and market valuation (Tobin Q) with other control variables. Robust two-tailed *t*-statistics clustered by firm are presented in parentheses. The superscripts ***, ** and * correspond to statistical significance at the 1%, 5% and 10% levels, respectively. See the Appendix for the variable definitions

Source(s): Authors' own work

bidder returns is less pronounced for firms led by CEOs who are younger, those who are less risk-taking, have longer tenures and are male, compared to their counterparts. We further find that board co-option reduces acquisition efficiency and leads to worse performance. Our results hold after controlling for board characteristics and addressing endogeneity-related issues.

We contribute to the M&A literature and suggest that board co-option is detrimental to bidder shareholders, thereby offering important implications for regulators and policymakers. Specifically, we highlight that poor board monitoring, exacerbated by the presence of co-opted directors, can adversely influence shareholder returns in acquisition announcements. This weakens the board's ability to act independently, allowing CEOs to pursue acquisitions that may not align with shareholder interests.

For regulators and policymakers, our results highlight the ongoing need for stringent governance practices that promote truly independent board oversight, especially in the post-Sarbanes-Oxley era. Although the Sarbanes-Oxley Act aimed to improve corporate governance, our study suggests that CEO influence over board members can persist even in regulated environments. Policymakers could consider reinforcing rules to limit CEO involvement in the selection of directors, ensuring that boards remain effective in protecting shareholder value.

Furthermore, corporate governance reforms could focus on mechanisms that prevent CEO overreach and enhance board independence. Requiring staggered board elections, independent nomination committees or stricter limits on tenure and social ties between the CEO and board members might improve governance quality. By implementing such measures, regulators can safeguard firms from the adverse effects of board co-option, ensuring that corporate decisions, particularly in M&A, are made with greater transparency and accountability.

Nonetheless, our study is subject to certain limitations that open avenues for further work on board co-option in M&As. Future research can examine how board co-option influences synergistic gains in the international takeover market. Our findings can stimulate future work to investigate how co-opted boards affect other non-financial deal consequences, such as

employment and culture. We considered publicly listed firms to test the association between board co-option and bidder returns and similar work can be expanded to private firms.

Notes

1. Although the Sarbanes Oxley Act of 2002, NASDAQ and NYSE endorsed listing essentials to diminish CEOs' undeviating influence on the recruiting process, CEOs continue to exert their influence on this process.
2. Following Amel-Zadeh and Meeks (2019) and Fich and Nguyen (2020), first we exclude share buyback, share repurchase, acquisition of assets and exchange offers and transactions with less than 50% shares acquired.
3. We use the Standard Industry Classification (SIC) for assigning companies into 48 industries.
4. The "Others" industry category reported in Table 1 comprised of remaining 38 industry classification.

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Appendix

Table A1. Definitions of variables used in main models

Variable	Definition
Dependent and independent variables	
PCO_OPT	Number of co-opted directors divided by number of directors on the board. A director is considered to be a co-opted director if he/she is appointed after the incumbent CEO assumes office
NCO_OPT	The distance between the number of co-opted directors on the board and the number of directors on the board
RCO_OPT	The residual from a regression of PCO_OPT on CEO tenure
CAR	Following Chang (1998), Moeller *et al.* (2004). and Masulis *et al.* (2007), we calculate the three-day cumulative abnormal return earned by the acquirer during the M&A announcement date, using the market model over a period of 200 days (−210, −11) preceding the announcement date. We exclude the 10-day window immediately prior to the acquisition announcement period from the estimation period because it is common in acquisition events that the information is leaked to the capital market well before the actual announcement
Firm characteristics	
SIZE	The natural logarithm of acquiring firm's total assets
LEV	Acquiring firm's total debt divided by total assets
CASH	Firm's total cash and equivalent divided by total assets
TOBINQ	Acquiring firm's market capitalisation plus total liabilities divided by total assets
ROA	Acquiring firm's earnings before interest, depreciation and amortisation, divided by total book assets of the acquiring firms
Corporate governance	
CEO_DUALITY	Indicator variable that takes the value of one if both CEO and chair positions are held by the same person, and zero otherwise
LNCEO_TENURE	The natural logarithm of CEO tenure
LNBOARD_SIZE	The natural logarithm of total number of directors of the firm
BOARD_INDEP	The percentage of independent directors on the board
LNANALYSTS	The natural logarithm of firm's total number of analysts following
Deal characteristics	
RELATIVESIZE	Transaction value reported by SDC divided by the market value of the acquirer one month prior to the acquisition announcement
ALLCASH	A dummy variable that equals to one if the deal is fully financed by cash, and zero otherwise
ALLSTOCK	A dummy variable that equals to one if the deal is fully financed by stock, and zero otherwise
RELATEDID	A dummy variable that equals to one if bidder and target are from the same industries, zero otherwise
TENDEROFFER	A dummy variable that takes the value of one if the deal is tender, zero otherwise
COMPETINGBID	A dummy variable that takes the value of one if there are at least two acquirers making an offer to a target, zero otherwise
Other variables	
Entrenchment index	
Institutional ownership	
YOUNGCEO	A dummy variable that takes the value of one if the CEO is younger than 65 years old, zero otherwise
CEO VEGA	The natural logarithm of the CEO's vega
CEO TENURE	The natural logarithm of the CEO's tenure

(*continued*)

Table A1. Continued

Variable	Definition
CEO GENDER	A dummy variable equal to 1 if the CEO is female, and zero otherwise
BIDPREM	For public targets: The difference between the deal value and the market capitalisation one month before the deal announcement For private targets: The average bid premium paid to public targets in a given industry and year
PARACQ	A dummy variable equals to one if the bidder acquires less than 100%, and zero otherwise
LOGDAYS	The natural logarithm of the number of days between bid announcement and deal execution
COMPLETED	A dummy variable equals to one if the deal is completed, and zero otherwise

Source(s): Authors' own work

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