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Friendly directors and the cost of regulatory compliance☆

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ABSTRACT

We present evidence that, following the passage of the Sarbanes-Oxley Act, firms responded to the increased requirement for outside director monitoring by substituting insiders with outside directors who have social or professional connections to their CEOs. This substitution was most significant in firms that have higher outside director monitoring costs – small, young firms, firms outside the S&P 1500 index, and firms with low analyst scrutiny. The addition of these "friendly" directors did not reduce firm performance, suggesting that it may have been an efficient response by firms aimed at lowering the additional monitoring costs imposed by the new regulations. Our findings suggest that, as with many other aspects of board composition, the determinants and consequences of appointing friendly directors vary with the costs and benefits of outside director monitoring.

1. Introduction

Corporate regulations are often a blunt, "one size fits all," instrument designed to influence or deter particular corporate behavior. Such laws are usually not (and in most cases, cannot even be) written to fit every single firm's individual operating or contracting environment. As a result, regardless of the aggregate welfare effects of any particular piece of regulation, the relative costs and benefits could vary significantly across firms. Some firms might face higher costs of complying with regulations, so these burdened firms are likely to take steps or even evolve new organizational mechanisms to mitigate these costs. As such, a full appraisal of the impacts of any regulations requires understanding how firms adapt their governance in response to the associated potential costs. In our study, we examine the unique role that executive networks – the social and professional connections of corporate executives – play in helping firms alleviate costs imposed by regulations pertaining to corporate boards of directors. Particularly, we investigate how the proportion of independent directors connected to CEOs changed around the passage of the Sarbanes-Oxley Act of 2002 (SOX). Our paper uncovers a potential benefit of friendly directors and in doing so, we provide a novel contribution to the debate on the costs and benefits of director monitoring and advising.

In response to public outcry following a string of high profile corporate scandals at the turn of the century, Congress responded by passing SOX with the aim of improving firm governance. In addition, working with the Securities and Exchange Commission (SEC),

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the major stock exchanges developed stricter exchange listing requirements. These rule changes offer a powerful and compelling context in which to identify the effects of executive networks on firms' response to regulations for at least two reasons. First, as Mulherin (2007) notes, the passage of SOX represented one of the most significant set of federal mandates on corporate governance. SOX goes beyond the usual form of "disclosure-oriented" regulations that are typically enforced through the SEC. Second, well-developed theory and prior empirical research allow us to predict the cross-sectional variations in the costs imposed by this piece of regulation. These theories allow us to, *ex-ante*, identify the firms most likely to tap their networks to ameliorate the costs of compliance.

While SOX and the new listing requirements have several facets, a central objective is to directly change and regulate the structure of corporate boards. The stricter exchange listing requirements explicitly require firms to have a majority of *independent* directors. SOX does not explicitly require a majority independent board, but it mandates the formation of several independent committees and tightens the definition of independence. Taken together, these regulations have the effect of imposing higher levels of outside director monitoring on firms.

One of the underlying motives for the passage of these rules was the belief that lack of board independence was a proximate cause of governance failures, and that boards that are more independent are uniformly good for all firms. However, even at the time of the passage of these rules, there was little systematic evidence to support this argument (Romano, 2005; Wintoki, 2007). Several studies examine large panels of firms covering the decades leading up to the passage of SOX and the new listing requirements, and generally find no systematic relation between board independence and firm performance (e.g., Bhagat and Black, 2002; Hermalin and Weisbach, 1991; Wintoki et al., 2012).

More importantly, theoretical advances in our understanding of the role and composition of corporate boards since the passage of SOX suggest that the costs and potential benefits of director monitoring and advising vary significantly across firms (Adams and Ferreira, 2007; Raheja, 2005; Harris and Raviv, 2008). These theoretical models emphasize the different trade-offs in the monitoring and advising functions between inside and outside directors. While both inside and outside directors can contribute to monitoring and advising, outside directors are especially beneficial for monitoring given their independence from the CEO. In contrast, inside directors are especially beneficial for advising given their knowledge of the firm/industry, and their closeness to the CEO. This difference suggests that, in firms or industries where the cost of transmitting firm-specific information to outside directors is high, the cost of outside director monitoring is high and, simultaneously, outside directors can contribute even less in an advisory capacity. In such circumstances, the overall monitoring and advisory cost-benefit trade-off may tip the optimal board towards one with more inside directors relative to outside directors. A series of empirical papers, mostly using data predating the passage of SOX, find evidence to support the predictions of these theoretical models (Boone et al., 2007; Lehn et al., 2009; Linck et al., 2008; Cicero et al., 2013). These papers find, for example, that small, young firms tend to have less outsider-dominated boards, suggesting that the cost of outsider-dominated boards is high for these firms.

These findings also suggest that, for a significant subset of firms, the new mandates on outside director monitoring stemming from SOX and the stricter exchange listing requirements may have pushed these firms away from their desired level of board independence. This set of firms will seek ways to reduce the added burden of outside director monitoring while still having to comply with the new rules. In this paper, we propose that one possible way for firms to achieve this goal is to replace inside directors with *friendly* outside directors – those who are socially or professionally connected to their firms' CEOs.

Replacing insiders with friendly outside directors allows firms to circumvent the new rules while still complying with the letter of the law. According to the SEC, a director who falls into any of the following six categories would be deemed as *not independent* (Fink, 2006): (1) employment by the firm within the past five years; (2) family relationship by blood or marriage with a top manager or other directors; (3) affiliation with the firm as a banker or creditor within the past two years; (4) affiliation with the firm as an investment banker within the past two years or within the upcoming year; (5) association with a law firm engaged by the corporation; (6) stock ownership resulting in the SEC designation of "control" person. These categories effectively exclude directors with direct financial and/or familial relationships with a firm from the pool of independent directors. However, they do not exclude directors connected to CEOs in other ways. The appointment of friendly directors allows firms to comply with the new rules that require greater board independence without taking on the additional burden of extra monitoring if we assume that friendly outside directors monitor the firm's top managers less than other outside directors. In addition, the more efficient information transmission between firms and these connected directors helps firms to reduce the costs associated with outside director monitoring.

Based on these arguments, we make and test three predictions. First, we predict that the average percentage of friendly (but otherwise independent) directors will have increased since 2004 (the year by which all firms are expected to be compliant with the regulations), as firms replace insiders with outside directors who are socially or professionally connected to their CEOs. Particularly, we predict that this increase will be more pronounced among firms that were *non-compliant* with the listing requirement of a majority independent board prior to the adoption of the regulations. We base this prediction on the premise that, on average, firms that did not have a majority of outside directors prior to the adoption of SOX were the ones that have higher costs of outside director monitoring.

Second, we predict that the increase in the percentage of friendly directors should be more concentrated in firms with higher costs of outsider monitoring, as measured by other well-established proxies – small, young firms that are outside the S&P 1500 index, and firms with less analyst scrutiny. Third, because the appointment of friendly directors in response to SOX essentially allows firms to stay around their preferred board structures, we predict that there would have been no significant declines in firm performance from this increase in the presence of friendly directors.

In a broad sample consisting of 13,547 firm-years between 2000 and 2010, we find evidence to support our predictions. We find an increase in board friendliness among firms that were *non-compliant* (i.e., did not have majority board independence) at the time SOX was adopted. While there has been little change in board friendliness in firms that were already compliant at the time of the

adoption of SOX, board friendliness increased by about 6 percentage points in firms that were non-compliant. As a result, by 2010, these non-compliant firms had twice as many friendly directors as they did on the eve of the adoption of SOX. We further show that in the post-SOX era, the increase in friendly directors has been higher in firms that prior literature has identified as having higher costs of outside director monitoring: small, young firms that are outside the S&P 1500 index, and have less analyst scrutiny.

Taken together, these results are consistent with our conjecture that the appointment of friendly directors was essentially an efficient way that firms chose to comply with the mandated higher levels of board independence while trying to mitigate the additional costs of outside director monitoring. This phenomenon was especially significant in firms that theory and prior empirical studies predict would be better off with lower levels of board independence. However, there are several potential alternative explanations to our findings. We then explore, and ultimately discount, these alternative explanations for our results.

The first and probably the most pertinent alternative explanation for our results is that firms that were non-compliant (i.e., firms that did not have majority independent boards prior to SOX) might be poorly governed firms. Following the passage of SOX, these firms might simply seek to find ways to get around the spirit of the law to maintain poor governance. Our analysis, however, casts doubt on this potential explanation. We find that non-compliant firms (who were the most likely to have added friendly directors) were not associated with lower profitability, either before or following the passage of SOX. Even among the non-compliant firms that added friendly directors, there was no evidence of a reduction in profitability following the passage of SOX. We also find that the addition of friendly directors was not associated with other firm characteristics that prior research suggests to be proxies for governance quality such as institutional ownership, the degree of concentrated ownership (block-holding), whether or not the CEO is the chair of the board (CEO duality), or the presence of anti-takeover provisions (*E*-index).

Another potential alternative explanation for our results is that, non-compliant firms, faced with the actual recruitment and compensation costs of having to quickly appoint several outside directors, simply turned to their social networks to reduce these essentially fixed transaction costs. Knyazeva et al. (2013) find that firms located in areas with more executives (who form the potential pool of outside directors) may find it less costly to hire outside directors, and consequently have more independent boards. However, directors recruited locally are more likely to be friendly directors because geographical proximity makes it more likely that the CEO shares professional or social connections with these individuals. This possibility means that if the fixed transaction costs of finding independent directors explains our results, we should observe that non-compliant firms located in areas with smaller potential pool of outside directors would have experienced a larger increase in the percentage of friendly directors than other firms would. Our results show that this pattern does not exist thus casting doubt on this alternative explanation.

We also consider the possibility that the increase in the percentage of friendly directors is merely coincidental with a general increase in the need to hire a significantly large number of independent directors in order to meet statutory obligations. A sudden increase in the demand for independent directors may have simply drawn in more professionals and other executives, who may not otherwise have been in the labor market for directors, but just happen to be connected to CEOs. If our results are due to this coincidence, we would find no difference in the friendliness of independent directors nominated by CEOs and those nominated by other parties in the firm's nexus of contracts (e.g., a major shareholder), or recruited via the use of an executive search firm. However, using a sample of firms with detailed data on how new directors were nominated between 2004 and 2008, we find no support for this hypothesis. Compared to other parties in the firm, or to executive search firms, CEOs were more likely to nominate friendly directors.

We believe our study makes several contributions that extend our understanding of executive networks and board structures. While prior research finds that networks influence several corporate policies, the role that these networks play in directly addressing the costs of regulations receives much less scrutiny.[1] Our paper sheds new light on our understanding of this issue. We show that firms use their CEOs' networks to alleviate the externally imposed higher costs of outside director monitoring. This finding might indicate that some firms deliberately tried to circumvent the spirit of the regulations and may at first blush be considered troubling. However, we show that this adjustment firms made to reduce the burden of inefficiently high board independence, as imposed by SOX and the new exchange listing requirements, had no detrimental effects on firm performance.

As we noted earlier, a key mechanism underlying the advising/monitoring cost-benefit trade-off between inside and outside directors is the cost of transmitting firm-specific information to outside directors, which determines whether inside and outside directors are added to the board as effective monitors or useful advisors. Our results, and the context in which we uncover them, extend our understanding of the theoretical determinants of board structure in a way that prior research recognizes but does not always emphasize. In small, growing firms that face highly uncertain information environments, managers need to preserve the flexibility to make tactical and strategic decisions without having to spend too much time informing otherwise uninformed outside directors. Such companies need to recruit directors who are willing to incur the personal cost of being informed, while putting their personal and professional reputations on the line, and who the CEO is comfortable confiding in such that these directors will be effective advisors. Prior to the regulatory change (SOX and the new exchange listing requirements), firms were able to fill these roles with inside directors. However, in the post-SOX era, firms turned to recruiting directors from the CEOs' own personal and professional networks to fill these board seats.

As such, while our results provide support for the “one size does not fit all” hypothesis, we also view them as providing support for what could be termed a “director recruitment” hypothesis. Executive networks are a way for young, growing firms to minimize the

[1] Executive networks (through board interlocks or the social and professional networks of executives and directors) have been shown to affect, among other policies, the design of executive compensation (Hwang and Kim, 2009; Wong et al., 2015), earnings management behavior (Chiu et al., 2013; Krishnan et al., 2011), the likelihood of chief executive officer dismissal following poor performance (Nguyen, 2012), capital investment decisions (Fracassi, 2016), and tax policy (Jiang et al., 2018).

recruitment costs that they faced from the sudden shock of having to replace inside directors with outsiders who could still provide effective advice to the CEO without increasing monitoring costs beyond what would be optimal for the firm. This finding has broader implications for how we may expect firms to respond to future regulatory mandates that require them to suddenly have to recruit directors with a specific background or characteristic.

In addition to uncovering a previously unexplored role for executive networks, our results have important policy implications. The upshot of our study is that, while outside director monitoring is often beneficial, its benefits do not always increase monotonically. For some firms, at some point, the costs may outweigh the benefits. A potential policy implication of our study is that regulations designed to reduce the prevalence of friendly directors need to consider the potential costly impact on a significant subset of firms (especially smaller, younger firms that have greater levels of outside director monitoring costs). Another policy implication is that a broader regulatory definition of "independence" may need to include social or professional connections beyond being directly affiliated with the company or been a relative of the CEO. It is noteworthy that the friendly directors in our study are generally not "gray" directors; friendly directors are directors that would almost certainly be classified as independent outsiders under current rules and listing requirements.[2]

Finally, a key innovation that distinguishes our study from prior work is our application of the cross-sectional variation of outside director monitoring costs derived from prior theoretical and empirical work in our study of the antecedents and effects of friendly directors. This analysis enables us to extend the findings from the two closest papers to ours – Krishnan et al. (2011) and Fracassi and Tate (2012). The former finds that firms, on average, increased the share of friendly directors on their boards following the passage of SOX while the latter finds that, on average, the effect of friendly directors on firm performance is negative. We essentially confirm these results but show that there is significant cross-sectional variation in the increase in friendly directors following the passage of SOX (it was concentrated in firms with high monitoring costs). We also demonstrate that there is significant cross-sectional variation in the impact of friendly directors on firm performance. Our analysis shows that the presence of friendly directors is, as theory predicts, endogenous to firm characteristics; and the impact of friendly directors varies with the associated costs and benefits.

2. Literature review, hypothesis development and empirical proxies

Theory suggests that outside directors who are independent of the CEO monitor CEO activities more intensely and thus reduce agency problems arising from the separation of ownership and control. Fama (1980) and Fama and Jensen (1983) argue that outside directors have strong reputational incentives to effectively monitor CEOs and other managers. Consistent with this argument, Weisbach (1988) finds that outside directors are more likely to replace CEOs at poorly performing firms, and Rosenstein and Wyatt (1990) find that the addition of an outsider to a corporate board is associated with a positive increase in stock price around the announcement.

However, theory also suggests that the net benefits of outside director monitoring do not increase monotonically with the number of outside directors. Outside director monitoring is costly and may exceed the associated benefits after a certain point. More importantly, the costs and benefits of outside director monitoring vary systematically across firms based on firm characteristics as well as operating and contracting environments.

An example of how systematic cross-sectional variation in the cost of independent director monitoring arises builds on arguments drawn from Demsetz and Lehn (1985). They suggest that in uncertain environments, it may be extremely costly for outsiders to monitor management's actions effectively. In such an environment, board monitoring by independent directors may be relatively inefficient. Supporting this view, Hermalin and Weisbach (1998) show that with poorer information, the option to fire management is less valuable. Along similar lines, Raheja (2005) theorizes that the benefits of outside director monitoring are especially high in firms with large private benefits of control, which are, in practice, more likely to be bigger and older firms. Adams and Ferreira (2007) formalize the idea that, in some firms and circumstances, having one or more friendly directors may be optimal for the firm. They suggest that friendly directors give CEOs the confidence to share information without worrying that directors will interfere with their decision-making authority, which improves the quality of advice that CEOs receive from their boards.

Recent empirical studies provide support for these theoretical models that predict cross-sectional variations in the costs and benefits of outside director monitoring. These studies find that, prior to the passage of SOX and the new exchange listing requirements in 2002, small, young, and risky firms had a smaller proportion of outsiders on their boards (Boone et al., 2007; Coles et al., 2008; Linck et al., 2008). If these firm characteristics (size, age, and risk) are proxies for costs and benefits of independent director monitoring, these results suggest that firm characteristics may be significant determinants of optimal board composition. Imposing a high level of outside director monitoring on all firms may have a net adverse value effect on firms with high monitoring costs.

These cross-sectional differences in the costs and benefits of independent director monitoring may explain why several studies, most of which use data prior to the passage of SOX, find no significant cross-sectional relation between the extent of board independence and firm performance (e.g., Agrawal and Knoeber, 1996; Bhagat and Black, 2002; Hermalin and Weisbach, 1991; Wintoki et al., 2012). If firms choose boards that optimally trade-off the costs and benefits of independent director monitoring, we should expect no monotonic relations between the proportion of independent directors and firm value or performance.

Nevertheless, despite the lack of broad evidence to support the idea that independent boards are uniformly good for all firms, this

[2] Gray directors (such as defined by Shivdasani and (Shivadasani and Yermack, 1999)) are outside directors who are retired employees, relatives of the CEO, and persons with disclosed conflicts of interest such as outside business dealings with the company or interlocking director relationships with the CEO. We discuss this further in Section 5.7.

idea has come to be widely accepted by a large section of the public and business press. In the U.S., this prevailing belief was ultimately incorporated into the passage of the Sarbanes-Oxley Act of 2002 and the adoption of more restrictive listing rules by the major stock exchanges. As noted in the introduction, SOX and the exchange regulations directly affect boards of directors of firms by imposing higher outside director involvement in all public firms in one or more of the following ways: (1) Mandating a majority of outsiders on boards (based on the exchange requirements); (2) Mandating firms to have audit, nominating, and compensation committees consisting entirely of independent directors (based on both SOX and the exchange requirements); (3) Mandating that outside directors must meet regularly without the presence of insiders (based on the exchange requirements); and (4) Tightening the definition of director independence (based on both SOX and the exchanges' requirements).

The “one-size-fits-all” higher level of board independence mandated by SOX and the exchange listing requirements may be costlier for firms with higher outside director monitoring costs and fewer monitoring benefits than for other firms. Indeed, one study by Wintoki (2007), using stock returns around the debate and passage of SOX, finds that the returns for small, young, growing, research intensive firms were significantly more negative compared to other firms. These results suggest that even at the time of passage, investors viewed the regulations as being costlier (or less beneficial) for this group of firms. Other evidence suggests that increased costs of SOX compliance has been reflected not only in equity markets, but in debt markets as well. For example, Gao (2011) examines SOX's effects on the choice of bond market by foreign firms and finds that firms with higher SOX compliance costs rely less on U.S. bond markets after the passage of SOX.

All these points suggest that firms with high monitoring costs will seek ways to mitigate the potentially negative effects of the mandates imposed by SOX and the exchange listing requirements.[3] Some firms may choose to delist altogether (Doidge et al., 2010). However, there is another way in which firms with high monitoring costs could mitigate the costs of the regulations: choosing independent directors who satisfy all the legal definitions of independence but may be otherwise *friendly* to the CEO.

Basically, a director is considered *not independent* if he/she: (1) is an employee of the firm; (2) is a family member of one or more of the firm's top executives; or (3) has substantial business dealings with the firm (Fink, 2006). These categories effectively exclude directors with direct financial and/or familial relationships with a firm from the pool of potential independent directors. However, they do not exclude directors who are socially or professionally connected to CEOs in other ways. This omission in the regulations means that firms can replace insiders with legally independent friendly directors who may not monitor the CEO as intensely as less friendly directors.[4] Thus, firms can comply with the law without increasing monitoring costs by appointing friendly directors.

Given the possibility that the board independence requirements of SOX and stock exchanges may force firms that would otherwise be better off with less independent boards to adopt boards with inefficiently high levels of outside director monitoring, we make and test the following predictions. First, we predict that the average percentage of friendly (but otherwise independent) directors would have increased since the passage of SOX and the new exchange listing requirements, as firms replace insiders with outside directors who are socially or professionally connected to CEOs. Second, we predict that this increase in the percentage of friendly directors would be more concentrated in firms with higher costs of outsider monitoring. Third, because the appointment of friendly directors essentially allows firms to stay around their optimal board structures, we predict that there would have been no declines in firm performance from the increase in the presence of friendly directors in high monitoring cost firms.

Our first and primary proxy for the costs of outside director monitoring is the degree to which a firm's board was composed of outside (independent) directors at the time of the adoption of SOX and the exchange listing requirements. Prior to the passage of SOX, firms with lower levels of board independence are the ones that are most likely to face higher costs of outside director monitoring. Therefore, in most of our analysis, we divide firms into two groups: (1) *non-compliant* firms, which are those who had boards with $\leq$50% outside directors prior to the adoption of the new rules, and (2) *compliant* firms, who had majority independent boards at the time the rules were adopted. We predict a larger increase in the percentage of friendly directors since the passage of SOX in non-compliant firms than in compliant firms.

We also consider several other proxies for the cost of outside director monitoring. Using arguments developed in Raheja (2005) and Harris and Raviv (2008), Boone et al. (2007) and Linck et al. (2008) suggest and find evidence that outside director monitoring costs (benefits) decrease (increase) with firm size and firm age. We use two proxies for firm size – the market value of equity and membership of the S&P 1500 index. Firm age is the number of years for which the firm has been covered by the Compustat database. We also use the number of analysts following the firm as a proxy for the uncertainty of the firm's information environment and the ease of outside director monitoring. We predict a negative relation between the percentage of friendly directors appointed since the passage of SOX and these proxies for outside director monitoring costs – membership in the S&P 1500 index, firm size, firm age, and the number of analysts following the firm.

[3] Another (non-board related) example of this window-dressing behavior towards SOX compliance is the processes of hiring and negotiating with auditors. As pointed out by Beck and Mauldin (Beck and Mauldin, 2014), even though SOX mandates that the audit committee be in charge of negotiating audit fees with independent auditors, more powerful CFOs still have more influence on audit fees negotiations than the audit committees on their boards.

[4] The literature suggests that friendly directors, who are socially connected with CEOs, have easier access to information and monitor CEOs less intensely (e.g., (Cohen et al., 2008; Hwang and Kim, 2009)). While it is not the key empirical focus of our study, we find some evidence in our sample that this may be the case (see Table A7 of the Appendix), especially in firms we subsequently identify throughout the rest of the paper as having high monitoring costs. We find a positive association between the percentage of friendly directors on the board and CEO cash compensation in firms with high monitoring costs. We also find that, in high monitoring cost firms, CEO turnover-for-performance declines with the percentage of friendly directors on the board.

3. Data and sample selection

We obtain data on social networks and connections from the BoardEx dataset collected by Management Diagnostics Limited. This dataset contains comprehensive information on the demographic history of directors and top managers in the firms it covers. Due to limitations on the other datasets employed in our study, we use BoardEx data from 2000 to 2010 to construct our measure of social and professional connections between CEOs and their firms' directors.

We start by examining each director's role in a firm. Specifically, we identify directors classified as *inside* directors and those classified as *independent* directors (i.e., outside directors). Then for each CEO and each independent director in a firm, we track their employment history and other social activities as recorded in BoardEx. The employment history data cover all firms with which an individual is ever associated. Social activities include universities attended, services in armed force, and membership at social clubs/charities/organizations. Based on these data, we define an independent director as *friendly* when his or her professional and/or social activities history overlaps with that of the firm's CEO. To be classified as an overlapping connection, we require the two individuals to have been concurrently associated with the same organization. Besides the data on connections, we also obtain data on CEO age, as well as whether or not a CEO is also the chair of the firm's board from BoardEx.

We divide our firms into two groups based on the level of board independence at the time of the adoption of SOX and the exchange listing requirements. *Non-compliant* firms are those firms in which outside directors were a minority of the board, and *compliant* firms are those in which outside directors constituted > 50% of the board. SOX was passed in 2002 and most firms were expected to be fully compliant by 2004, so we measure compliance based on firms' board structure at the end of fiscal year 2003 (Linck et al., 2009).[5] Of the 2034 firms that have data in 2003, 1610 were compliant firms, while 424 were non-compliant firms. It is worth noting that non-compliant firms were disproportionately more likely to be outside the S&P 1500 index.[6] These statistics mean that limiting the analysis to just S&P 1500 firms would tend to leave out a large number of firms that have the highest monitoring costs and thus are most likely to add friendly directors in the post-SOX era. Expanding the sample beyond S&P 1500 firms allows us to increase the cross-sectional variation in monitoring costs in our sample.

We match the data from BoardEx with Compustat to get firm financial data. From Compustat, we obtain data on debt, number of business segments, firm age, market and book value of common equity, and research and development expenses. We follow Linck et al. (2008) and define free cash flow (FCF) as operating income before depreciation minus total income taxes, change in deferred taxes, interest expense, preferred dividends, and dividends on common stock, scaled by total assets. For additional analysis, we also obtain the zip codes for all firms covered by Compustat, and use this information to compose a list of firms that are located within a 60-mile radius for each firm in our sample. We define these firms as local firms to our sample firms. We match our BoardEx data to CRSP and I/B/E/S to obtain data on returns and number of analysts following the firms' stocks. We describe our data composition for all variables in Table A1 of the Appendix and provide summary statistics in Table 1. To account for the potential effect of outliers, continuous variables are winsorized at the 1st and 99th percentiles.

4. Empirical analysis

4.1. The trend in board friendliness between 2000 and 2010

We start our empirical analysis with a univariate examination of how the percentage of friendly and other independent directors changed between 2000 and 2010. Fig. 1(a) shows the trend in the proportion of corporate boards consisting of statutory independent directors. The average level of board independence across all firms rose from just over 50% in 2000 to just under 70% by the end of the decade. A significant factor contributing to this trend was the post-SOX increase in the percentage of outside directors in non-compliant firms who had to add statutorily independent directors to meet the mandates imposed by SOX and the exchange listing requirements.

Fig. 1(b) summarizes the percentage of directors that were friendly in both non-compliant and compliant firms between 2000 and 2010. Among compliant firms, there was little change in the percentage of friendly directors (which hovered around 9%) over the course of the decade. In sharp contrast, the percentage of friendly directors in non-compliant firms doubled from about 6% in 2000 to over 12% by 2010. This increase happened almost entirely after the adoption of SOX and the exchange listing requirements in 2002. This pattern suggests that part of the increase in statutory board independence in non-compliant firms was achieved either by adding friendly but otherwise independent directors to their boards, or by replacing inside directors with friendly directors. Indeed, Fig. 1(b) suggests that non-compliant firms had a lower percentage of friendly directors than compliant firms in the pre-SOX era, while this difference reversed post SOX. This reversal is consistent with the notion that firms with higher outside director monitoring costs used friendly directors to comply with the new regulations. Prior to the passage of SOX, firms with high costs of outside director monitoring could avoid this cost by simply including more insiders and fewer outsiders on their boards (i.e., making them non-compliant with SOX). However, SOX required these firms to increase their board independence, and in response, these firms hired more friendly directors, which led to the significant increase in board friendliness among non-compliant firms that we observe.

[5] In unreported analysis, we replicate our analysis through the paper using compliance at the end of fiscal year 2002. We find that our inference remains unchanged.

[6] Of the 2034 firms for which we have data in 2003, 46.9% were S&P 1500 firms. However, among the non-compliant firms only 32.5% were S&P 1500 firms.

Table 1
Summary statistics.

Variable	N	Mean	Standard deviation	Q1	Median	Q3
% Friendly directors	13,547	0.1007911	0.18412	0	0	0.166667
Statutory independence	13,547	0.6885897	0.1469726	0.6	0.714286	0.8
Number of analysts following (Log)	13,547	1.695469	1.224919	0	1.94591	2.70805
Market value of equity (Log)	13,547	6.702322	2.008811	5.48524	6.709103	7.955957
SOX	13,547	0.7953791	0.4034393	1	1	1
Debt	13,547	0.1574902	0.1680309	0.0004597	0.118642	0.258428
Number of segments (Log)	13,547	1.761661	0.667288	1.386294	1.386294	2.302585
Firm age	13,547	22.44962	15.57676	11	17	32
Market-to-book	13,547	3.471079	4.208817	1.467248	2.298818	3.743665
R&D	13,547	0.051933	0.0999931	0	0.005449	0.064218
FCF	13,547	0.0297619	0.1981201	0.0251265	0.072367	0.113157
Adj. EBIT	13,547	2.02265	3.379244	0.3497927	0.848268	1.972671
CEO age	13,547	54.71831	7.851903	49	55	60
CEO duality	13,547	0.4612091	0.4985114	0	0	1
Number of local firms (Log)	13,547	4.753006	1.576604	3.988984	5.273	5.828946
ROA	13,546	−0.01449	0.2304085	−0.017065	0.042444	0.083118
CEO nominated	2861	0.0979	0.297	0	0	0
CEO nominated (%)	1979	0.107	0.299	0	0	0

% Friendly directors is the percentage of a firm's independent directors who are socially or professionally connected with the firm's CEO. *Statutory independence* is the percentage of a firm's directors who are classified as independent, as defined by regulations. *Number of analysts following (Log)* is the natural logarithm of the number of analysts following the firm's stock. *Market value of equity (Log)* is the natural logarithm of the market value of a firm's common shares ($ million). *SOX* is a binary variable with value one for observations in years starting from 2004, and zero otherwise. *Debt* is defined as long-term debt standardized by total assets. *Number of segments (Log)* is the natural logarithm of the number of business segments. *Firm age* is the number of years for which the firm has been included in Compustat. *Market-to-book* is defined as market value of common shares divided by book value of common shares. *R&D* is the firm's R&D expense divided by total assets. *FCF* is calculated as the sum of (operating income before depreciation minus total income taxes, change in deferred taxes, interest expense, preferred dividends, and dividends on common stock) scaled by total assets. *Adj. EBIT* is earnings before interest and taxes scaled by total assets, adjusted by industry mean EBIT/total assets. *CEO age* is the age of the firm's CEO in the corresponding year. *CEO duality* is a binary variable with value one if the CEO is also the chair of the board, and zero otherwise. *ROA* is defined as net income divided by total assets. *Number of local firms (Log)* is the natural logarithm of the number of Compustat firms within 60 miles of the focal firm. *CEO nominated* is a binary variable with value one if a newly appointed director is nominated by their CEO, and zero otherwise. *CEO nominated (%)* is the percentage of newly appointed directors in a firm-year who are nominated by their CEO. All continuous variables are winsorized at the 1st and 99th percentiles.

In Fig. 2, we examine the change (relative to the level in 2000) in the percentage of friendly directors in non-compliant and compliant firms. This figure shows that between 2000 and 2003, there was no distinguishable change in the percentage of friendly directors in either non-compliant or compliant firms. However, from 2003, the change in percentage of friendly directors in these two groups started to diverge. There was a significant increase in the percentage of friendly directors in non-compliant firms such that by 2010, the percentage of friendly directors in non-compliant firms was 6 percentage points higher than it was in 2000. In sharp contrast, the percentage of friendly directors in compliant firms did not change between 2000 and 2010. This univariate *difference-in-differences* in the percentage of friendly directors in compliant and non-compliant firms after 2003 was statistically significant at the 1% level. Taken together, Figs. 1 and 2 provide the first piece of evidence in support of our prediction that firms faced with higher costs of outside director monitoring were more likely to respond to SOX by adding friendly directors to their boards.

4.2. Board independence, monitoring costs, and board friendliness

While Fig. 2 provides suggestive evidence that firms with higher costs of outside director monitoring were more likely to comply with SOX by bringing friendly directors on their boards, many other factors and firm characteristics may concurrently affect firms' choice of directors. To account for these factors, we carry out multivariate difference-in-differences analysis using the following specification:

$$Friendly\ Directors_{i,t} = \alpha + \beta \times Non\_compliant_i \times SOX_t + \gamma \times Non\_compliant_i + \theta \times SOX_t + Controls_{i,t} + Fixed\ effect + \epsilon_{i,t} \quad (1)$$

As discussed in Section 3, our primary proxy for the costs of outside director monitoring is the binary variable *Non_compliant*, which equals one if the firm's board had a minority of outside directors in 2003, and zero otherwise. *SOX* is a binary variable that captures the post-SOX period, which equals one for observations in years starting from 2004 and afterwards, and zero otherwise. Our control variables are the other determinants of board independence proposed by Linck et al. (2008). Specifically, we include long-term debt (as a percentage of total assets), number of business segments, age of the firm, market-to-book ratios, level of R&D expenses, and level of free cash flows for the firm. Furthermore, we control for earnings before interest and taxes after adjusting for their industry means to measure the firm's past performance. Lastly, we include CEO age, and whether (or not) the CEO also chairs the board (CEO duality) to control for CEO characteristics. In our regressions, we include both year and industry fixed effects (based on the Fama-French 48 industry classifications), and report standard errors clustered by firm.

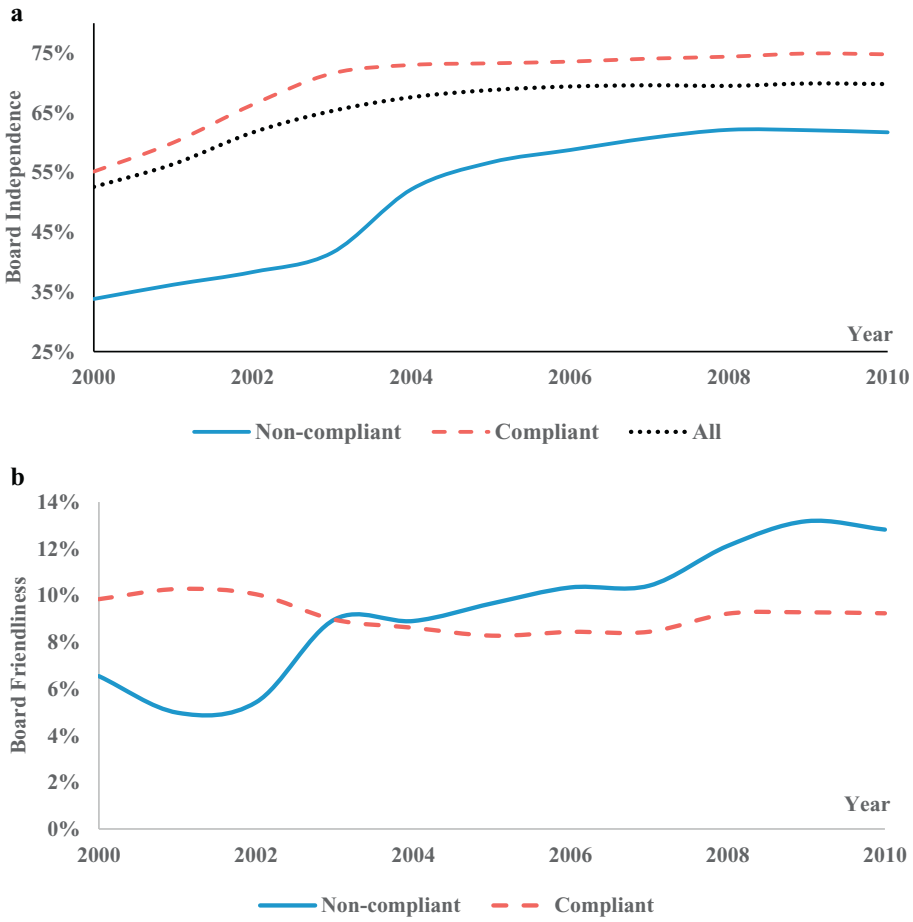

Fig. 1. Secular trends in board friendliness and board independence between 2000 and 2010 a: Board independence in all, non-compliant, and compliant firms: 2000–2010; b: Percentage of friendly directors in non-compliant and compliant firms: 2000–2010.
Fig. 1a shows the secular trend in board independence across all firms, non-compliant-firms, and compliant firms. Fig. 1b shows the secular trend in the percentage of friendly directors in non-compliant firms and compliant firms. Friendly directors are directors who are socially and professional connected to the CEO. *Non-compliant* firms have boards with a minority of independent directors in 2003. *Compliant* firms have boards where > 50% of the directors are independent in 2003.

The key variable of interest in our model is the interaction between the variables *Non_compliant* and *SOX*. We predict that firms that were non-compliant in 2003 (i.e., those that have higher costs of outside director monitoring) experienced a greater increase in the percentage of friendly directors on their boards after the adoption of SOX than compliant firms (i.e., $\beta > 0$). Column (1) of Table 2 presents the results from using a sample that includes all the firms for which we have data in 2003 (the year in which firms are classified as non-compliant or compliant). The results show that the estimated coefficient on the interaction term *Non_compliant* × *SOX* is 0.0617 ($t = 4.082$). Thus, in the period following the adoption of SOX, the share of independent directors that were friendly increased by about 6 percentage points more in non-compliant firms than in compliant firms. This magnitude is similar to that documented in the univariate analysis (presented in Fig. 2). In line with our prediction, non-compliant firms, who have higher costs of outside director monitoring, were more likely to respond to the new SOX mandates by appointing directors who are socially or professionally connected to their CEOs.

The analysis in column (1) of Table 2 uses all firms in our sample with data as of 2003. A potential concern is that the characteristics of firms that were compliant with the independent director requirements of SOX were different from those that were not compliant in a way that is correlated with the likelihood of appointing friendly directors after the passage of SOX. To address this concern, we carry out our analysis using a sample where we match each *treatment* firm (i.e., non-compliant firm) to a *control* firm that was already compliant with SOX in 2003 with otherwise similar characteristics. We use two different methods to choose our control firms. In both methods, we match each of our treatment firms to one control firm based on the following four factors: natural logarithm of market value, R&D expense, industry-adjusted earnings before interest and taxes, and CEO age. These four variables are factors that Linck et al. (2008) find to be significant determinants of board independence.

Our first method involves creating a matched control sample using propensity score matching (PSM). We calculate propensity scores based on the four factors discussed above, as well as industry fixed effects. We restrict our control firm to the ones from the

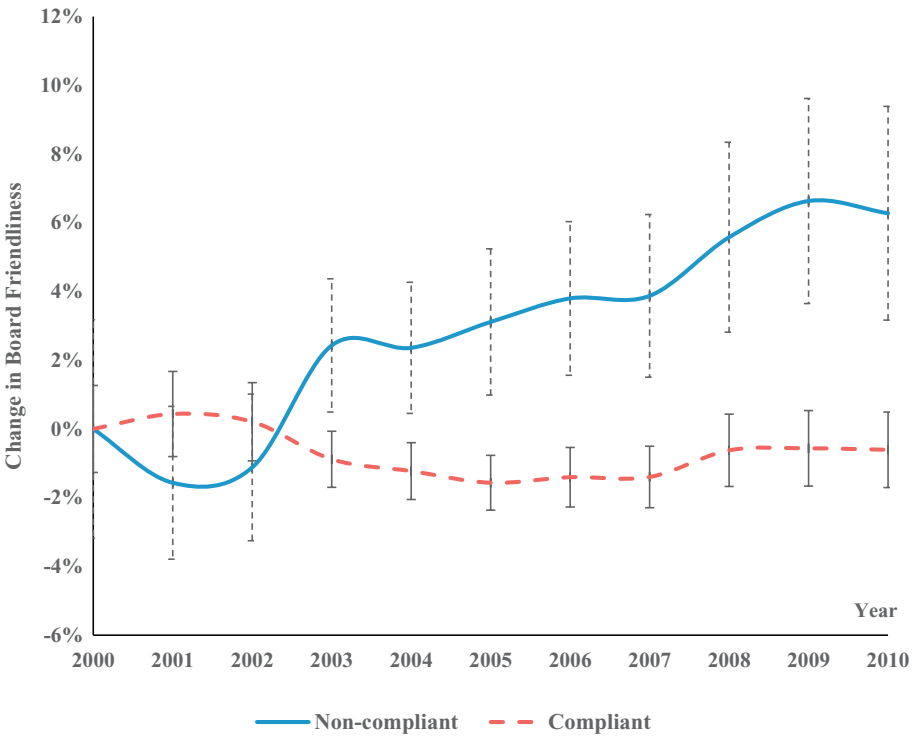

Fig. 2. Change in board friendliness in non-compliant and compliant firms.
This figure shows the change in percentage board friendliness in *non-compliant* and *compliant* firms since 2000. *Non-compliant* firms have boards with a minority of independent directors in 2003. *Compliant* firms have boards where > 50% of the directors are independent in 2003. Error bars represent the 95% confidence interval around the mean.

same industry as the matched treatment firm. As a test of covariate balance, in Panel B of Table 2, we present *t*-tests of the differences between the PSM matched control and treatment groups for the four matching criteria. As shown, we find 276 pairs of one-to-one treatment-control firms, and the two groups are quite similar along all the characteristics we use to make the matches. We then perform a regression similar to that specified in Eq. (1) on this matched sample. We present the results in column (2) of Panel A in Table 2. The coefficient estimate on the interaction of *Non_compliant* and *SOX* is 0.0434 (t = 2.490), which indicates that non-compliant firms were more likely to increase the percentage of friendly directors on their boards after the passage of SOX than their compliant counterparts. This result is similar to that for the full sample in column (1).

Although PSM is widely used in finance and accounting research to identify matched control firms, King et al. (2011) suggest that PSM might lead to control samples that approximate random matching due to the fact that PSM relies on only one factor – the estimated *pscore* – to execute the matching. To deal with this drawback, King et al. (2011) propose an alternative matching procedure using Coarsened Exact Matching (CEM). CEM stratifies the sample firms into bins based on each of the chosen covariates and then matches based on the strata. We follow King et al. (2011) to recreate our matched sample using CEM. In Panel C of Table 4, we present *t*-tests of the differences between the CEM matched control and treatment groups for the four matching criteria and find that the treatment and control groups are quite similar along these characteristics. We then replicate the analysis specified by Eq. (1) using the CEM matched sample. We present the results in column (3) of Panel A in Table 2. Again, our inference remains unchanged when we use this matched sample; firms that were non-compliant in 2003 were subsequently more likely to appoint friendly directors.

Finally, in column (4) of Table 2, we replace the binary variable *Non_compliant* with a continuous measure of the percentage of outside directors firms had in 2003 (we term this continuous variable *Statutory Independence*). As with the *Non_compliant* variable, we predict that firms with fewer outside directors at the time SOX was adopted have higher costs of outside director monitoring and would have added more friendly directors in the post-SOX period. Consistent with our expectation, we find a negative coefficient estimate on the interaction between *Statutory Independence* and SOX (estimate = −0.126, t = −3.452).

4.3. Firm characteristics, monitoring costs, and change in board friendliness

In section 4.2, we use the percentage of outside directors at the time SOX was adopted to measure firms' costs of outside director monitoring. In this section, we consider a broader set of firm characteristics that theory and prior literature suggest are direct proxies for outside director monitoring costs. We perform this analysis for two reasons. First, using board structure at 2003 as a proxy for outside director monitoring costs means that we cannot use information from firms that enter our sample from 2004 onwards. Second, monitoring costs may have changed for individual firms following the adoption of SOX. Firm characteristics, which vary over

Table 2
Friendly directors in the post-SOX era and board independence in 2003.

Panel A: Regression results

	All firms	PSM sample	CEM sample	All firms
	(1)	(2)	(3)	(4)
Non-compliant × SOX	0.0617***	0.0434**	0.0443**	
	(4.082)	(2.490)	(2.254)	
Non-compliant	−0.0538***	−0.0417**	−0.0446**	
	(−3.905)	(−2.403)	(−2.266)	
Statutory independence × SOX				−0.126***
				(−3.452)
Statutory independence				0.116***
				(3.208)
Market value of equity (Log)	0.00676***	0.00585*	0.00290	0.00674***
	(3.037)	(1.650)	(0.715)	(3.045)
SOX	0.000781	0.0214	0.0515	0.0967***
	(0.0405)	(0.616)	(1.369)	(2.915)
Debt	0.0339	0.0343	0.0178	0.0334
	(1.273)	(0.662)	(0.291)	(1.260)
Number of segments (Log)	0.00436	0.0132	0.0169	0.00440
	(0.777)	(1.423)	(1.529)	(0.789)
Firm age	−0.00252**	−0.00487**	−0.00479*	−0.00254**
	(−2.119)	(−2.094)	(−1.732)	(−2.129)
Firm age squared	2.38e-05	5.76e-05	5.37e-05	2.36e-05
	(1.336)	(1.417)	(1.135)	(1.317)
Market-to-book	0.000105	0.00195	0.00335	0.000109
	(0.129)	(0.963)	(1.278)	(0.134)
R&D	0.0926**	0.0712	0.0688	0.0926**
	(1.997)	(1.000)	(0.693)	(2.000)
FCF	−0.00186	0.0257	0.0173	−0.00137
	(−0.0994)	(0.935)	(0.534)	(−0.0732)
Adj. EBIT	0.000129	0.000846	0.00144	5.73e-05
	(0.357)	(1.101)	(1.577)	(0.159)
Number of local firms (Log)	0.00370	0.00718*	0.00510	0.00362
	(1.338)	(1.899)	(1.157)	(1.313)
CEO age	0.00135***	0.000231	0.000143	0.00138***
	(2.816)	(0.308)	(0.157)	(2.875)
CEO duality (t−1)	0.00252	−0.00277	−0.00380	0.00227
	(0.336)	(−0.202)	(−0.234)	(0.302)
Constant	−0.0496	−0.0667	0.121	−0.136**
	(−1.066)	(−0.903)	(1.447)	(−2.443)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	10,215	3558	2810	10,215
Adjusted R-squared	0.047	0.094	0.092	0.047

Panel B: Difference between treatment and control firms for means of variables on which samples are matched (PSM matching)

Variable	Difference	t-stat
Market value of equity (Log)	0.0529	0.34
R&D	−0.00443	−0.47
Adj. EBIT	−0.0223	−0.09
CEO age	1.0942	1.48
Note: 276 treatment firms and 276 matched control firms		

Panel C: Difference between treatment and control firms for means of variables on which samples are matched (CEctM matching)

Variable	Difference	t-stat
Market value of equity (Log)	0.0694	0.42
R&D	−0.00278	−0.29
Adj. EBIT	0.0187	0.08
CEO age	0.945	1.19
Note: 217 treatment firms and 217 matched control firms		

The dependent variable in all regression models is *%Friendly Directors*, which is the percentage of a firm's directors who are connected with the firm's CEO. Other variables are as defined in Table A1 of the Appendix. *t-statistics* based on robust standard errors clustered at the firm level are reported in parentheses. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

Table 3
Friendly directors in the post-SOX era: Firm characteristics and monitoring costs.

	(1)	(2)	(3)	(4)	(5)
S&P1500 × SOX	−0.0546***				
	(−4.433)				
Number of analysts following (Log) × SOX		−0.0101**			
		(−2.398)			
Market value of equity (Log) × SOX			−0.0100***		
			(−3.265)		
Firm age × SOX				−0.00157***	
				(−5.205)	
Negative stock return × SOX					0.0355***
					(3.909)
S&P1500	0.00543				
	(0.420)				
Number of analysts following (Log)		−0.00388			
		(−0.881)			
Negative stock return					−0.0118
					(−1.167)
Market value of equity (Log)	0.0114***	0.0105***	0.0147***	0.00607***	0.00744***
	(5.057)	(4.419)	(4.351)	(3.182)	(3.702)
Firm age	−0.00574***	−0.00624***	−0.00648***	−0.00544***	0.000893
	(−5.784)	(−6.421)	(−6.609)	(−5.919)	(0.0433)
SOX	0.0768***	0.0492**	0.120***	0.0735***	0.0384
	(3.306)	(2.113)	(3.464)	(3.308)	(1.634)
Debt	0.0386*	0.0427*	0.0390*	0.0356	0.00551
	(1.663)	(1.821)	(1.663)	(1.515)	(1.101)
Number of segments (Log)	0.00569	0.00465	0.00543	0.00496	−0.00610***
	(1.140)	(0.928)	(1.082)	(0.989)	(−6.272)
Firm age squared	7.08e-05***	7.59e-05***	8.02e-05***	8.39e-05***	7.48e-05***
	(4.617)	(5.037)	(5.287)	(5.409)	(4.953)
Market-to-book	−0.000460	−0.000385	−0.000240	−0.000256	−0.000299
	(−0.654)	(−0.546)	(−0.342)	(−0.364)	(−0.422)
R&D	0.0760*	0.0898**	0.0812**	0.0790*	0.0834**
	(1.843)	(2.176)	(1.981)	(1.926)	(2.023)
FCF	−0.00655	−0.00913	−0.0118	−0.0111	−0.0128
	(−0.390)	(−0.545)	(−0.703)	(−0.664)	(−0.764)
Adj. EBIT	0.000134	0.000236	0.000172	8.08e-05	0.000195
	(0.351)	(0.616)	(0.450)	(0.211)	(0.510)
Number of local firms (Log)	0.00236	0.00248	0.00127	0.00144	0.00177
	(1.020)	(1.053)	(0.540)	(0.616)	(0.756)
CEO age	0.00122***	0.00122***	0.00131***	0.00132***	0.00131***
	(2.991)	(2.982)	(3.214)	(3.237)	(3.228)
CEO duality (t−1)	0.00311	0.00338	0.00175	0.00175	0.00211
	(0.478)	(0.517)	(0.267)	(0.267)	(0.323)
Constant	−0.0669	−0.0405	−0.0909*	−0.0409	−0.0118
	(−1.451)	(−0.855)	(−1.778)	(−0.892)	(−0.246)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	13,547	13,547	13,547	13,547	10,215
Adjusted R-squared	0.063	0.058	0.055	0.057	0.056

The dependent variable in all regression models is *%Friendly directors*, which is the percentage of a firm's directors who are socially or professionally connected with the firm's CEO. Other variables are as defined in Table A1 of the Appendix. *t-statistics* based on robust standard errors clustered at the firm level are reported in parentheses. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

time allow us to capture changes in the cost of outside director monitoring over our sample period. To examine the effect of this broader set of proxies for outside director monitoring costs on board friendliness, we employ the following empirical specification:

$$Friendly\ Directors_{i,t} = \alpha + \beta \times Monitoring\ Cost_{i,t} \times SOX_t + \gamma \times Monitoring\ Cost_{i,t} + \theta \times SOX_t + Controls_{i,t} + Fixed\ effect + \epsilon_{i,t} \quad (2)$$

In Eq. (2), *Monitoring Cost* is one of the following four proxies (as discussed in section 2):

- *S&P 1500*: whether the firm is included in the S&P1500 index in year *t*;
- *Number of Analyst Following (Log)*: the natural logarithm of (1 + number of analysts following the firm in year *t*−1);
- *Market Value of Equity (Log)*: firm size in year *t*, measured as the natural logarithm of (1 + firm's market value);
- *Firm Age*: firm age in year *t*, measured as the number of years for which the firm has been included in Compustat.

We present the results from estimating Eq. (2) in Table 3. Column (1) of Table 3 shows the results from using presence in the S&P 1500 index as the proxy for monitoring costs. The coefficient estimate for the interaction term between *S&P 1500* and *SOX* is −0.0546 ($t = -4.433$). This result indicates that firms outside of the S&P 1500 index – those with higher outside director monitoring costs – experienced a larger increase in the percentage of friendly directors post SOX than other firms. Column (2) presents the results when we use the number of analysts following a stock to proxy for the cost of outside director monitoring. The coefficient estimate on the interaction term between *Number of Analyst Following (Log)* and *SOX* is −0.0101 ($t = -2.398$), meaning that firms with lower analyst coverage experienced a larger increase in percentage of friendly directors post SOX. The results are similar to those from column (1): firms with higher outside director monitoring costs experienced a larger increase in the percentage of friendly directors following the adoption of SOX.

We observe similar results in columns (3) and (4) when we use firm size and firm age as proxies for monitoring costs. The coefficient estimates on the interaction terms between *Market Value of Equity (Log)* and *SOX*, and between *Firm Age* and *SOX*, are −0.0100 ($t = -3.265$) and − 0.00157 ($t = -5.205$), respectively. Taken together, the results in Tables 2 and 3 provide strong support for the hypothesis that, following the adoption of SOX and tighter listing requirements, firms with higher outside director monitoring costs were more likely to appoint friendly directors than other firms.[7]

4.4. Stock returns around SOX and board friendliness

An alternative measure for monitoring costs and/or the advising benefits of outside directors is the market reaction around the passage of SOX. Wintoki (2007) finds that firms that face the highest costs of outside director monitoring and the lowest potential benefits of having outside directors (typically, as we have noted, young, small, growth firms operating in uncertain environments) experienced negative returns around the period over which Congress debated and passed SOX. This finding suggests that another potential measure of monitoring costs during our sample period is the stock market reaction around the passage of SOX. Firms that experienced a negative stock market response around the passage of SOX would be the most likely to appoint friendly directors in the post-SOX period.

To determine which firms experienced a negative abnormal return around the passage of SOX, we follow Wintoki (2007), and calculate the daily abnormal return from a regression of daily returns on the three factors from Fama and French (1993): the excess return on the market, the return difference between a portfolio of "small" and "big" stocks, and the return difference between a portfolio of "high" and "low" book-to-market stocks, augmented with a momentum factor from Carhart (1997), which is the return difference between a portfolio of stocks with high returns in the past year and a portfolio of stocks with low returns in the past year. We perform this analysis over the period from January to July 2011 during which legislation involving SOX was introduced, debated and eventually passed by Congress. We next create a variable, *Negative Stock Return*, which equals one for all firms that experienced a negative abnormal return around the passage of SOX, and is zero otherwise. We then estimate Eq. (2) using *Negative Stock Return* as the measure of monitoring cost.

The results of this analysis are presented in column (5) of Table 3. The estimated coefficient of the interaction of *Negative Stock Return* and *SOX* is positive and significant (estimate = 0.0355, $t = 3.909$). This result supports our prediction that firms with higher costs of outside director monitoring (i.e., those that experienced negative abnormal returns around the passage of SOX) were more likely to respond to the new SOX mandates by appointing directors who are socially or professionally connected to their CEOs.

4.5. Firm profitability and SOX-induced increase in board friendliness

Our analysis thus far suggests that the firms most likely to be burdened by the costs of externally imposed outside director monitoring (beyond what may be efficient) responded by appointing independent but friendly directors. If this decision was indeed an efficient response to SOX, there should be no adverse performance consequences, especially for firms with higher costs of outside director monitoring. In this section, we test this prediction using variations of the following specification:

$$ROA_{i,t} = \alpha + \kappa \times Non\_compliant_i + \beta \times \Delta Friendly\ Directors_{i,t} + \gamma \times Non\_compliant_i \times \Delta Friendly\ Directors_{i,t} + Controls_{i,t} + Fixed\ effects + \epsilon_{i,t} \quad (3)$$

The variable *ΔFriendly Directors* captures SOX-induced changes in board friendliness and is measured as the difference in the percentage of friendly directors between year t and the year 2003 (*ΔFriendly Directors* equals zero for the years before 2003). The dependent variable is firm performance, proxied by return on assets (ROA). In Eq. (3), γ (which is the estimated coefficient on the interaction between *Non_compliant* and *ΔFriendly Directors*) captures the difference in the effects that SOX-induced changes in board friendliness had on the performance for non-compliant and compliant firms.

We present the results from estimating Eq. (3) in column (1) of Panel A in Table 4. As shown, the coefficient estimate on the interaction between *Non_compliant* and *ΔFriendly Directors* is not significant (−0.0347, $t = -0.834$). This result indicates that the non-compliant firms that experienced an increase in the percentage of friendly directors did not experience measurable declines in

[7] Our analysis throughout most of the paper uses data from 2000 to 2010. In a series of robustness tests, we examine if tightening the window around the passage of SOX (using 2000–2002 as the pre-SOX era, and 2005–2007 and the post-SOX era) changes or strengthens our results. We find that this tighter window does not change our inference, even though we lose > 60% of observations (see Table A2 of the Appendix for a summary of the results of this particular set of robustness tests).

Table 4
Firm profitability and friendly directors.

Panel A: Firm profitability and changes in the percentage of friendly directors

	(1)	(2)
Non-compliant	−0.00282	−0.0124
	(−0.317)	(−0.892)
Δ Friendly directors	0.0397*	
	(1.680)	
Non-compliant × Δ Friendly directors	−0.0347	
	(−0.834)	
Non-compliant × SOX		0.0110
		(0.778)
SOX	0.0145	0.0140
	(0.801)	(0.774)
Market value of equity (Log)	0.0430***	0.0430***
	(18.79)	(18.77)
Debt	−0.0147	−0.0146
	(−0.954)	(−0.946)
Firm age	0.000228	0.000232
	(1.279)	(1.301)
Market-to-book	−0.00326***	−0.00327***
	(−3.000)	(−3.010)
R&D	−0.702***	−0.703***
	(−8.675)	(−8.654)
Sales std	−0.0589**	−0.0591**
	(−2.317)	(−2.317)
CEO age	0.000809**	0.000810**
	(2.288)	(2.299)
CEO duality	−0.00137	−0.00115
	(−0.263)	(−0.220)
Board size	−0.0111***	−0.0112***
	(−7.915)	(−7.953)
Statutory independence	−0.0213	−0.0232
	(−1.112)	(−1.194)
Constant	−0.206***	−0.202***
	(−4.941)	(−4.862)
Industry fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	11,650	11,650
Adjusted R-squared	0.307	0.307

Panel B: Firm profitability and percentage of friendly directors

	Full sample	Compliant	Non-compliant	Full sample
	(1)	(2)	(3)	(4)
Friendly directors	−0.0190	−0.0308*	0.0140	−0.0312*
	(−1.310)	(−1.818)	(0.431)	(−1.851)
Friendly director × Non-compliant				0.0539*
				(1.666)
Non-compliant				−0.00683
				(−0.700)
Market value of equity (Log)	0.0431***	0.0420***	0.0495***	0.0432***
	(18.80)	(16.83)	(9.080)	(18.83)
Debt	−0.0142	−0.00973	−0.0598*	−0.0140
	(−0.918)	(−0.579)	(−1.700)	(−0.907)
Age	0.000217	0.000201	0.000169	0.000221
	(1.230)	(1.135)	(0.284)	(1.248)
Market-to-book	−0.00326***	−0.00229**	−0.0106**	−0.00325***
	(−3.002)	(−2.204)	(−2.511)	(−3.001)
R&D	−0.702***	−0.722***	−0.523**	−0.701***
	(−8.629)	(−8.129)	(−2.574)	(−8.621)
Sales std	−0.0585**	−0.0762**	−0.0226	−0.0601**
	(−2.299)	(−2.203)	(−0.463)	(−2.333)
CEO age	0.000830**	0.00103**	−0.000113	0.000849**
	(2.354)	(2.546)	(−0.138)	(2.396)
CEO duality	−0.000916	−0.00441	0.0142	−0.000842
	(−0.176)	(−0.842)	(0.812)	(−0.161)

(*continued on next page*)

Table 4 (*continued*)

Panel B: Firm profitability and percentage of friendly directors

	Full sample	Compliant	Non-compliant	Full sample
	(1)	(2)	(3)	(4)
Board size	−0.0112***	−0.0112***	−0.0113***	−0.0113***
	(−8.026)	(−7.404)	(−3.116)	(−8.058)
Statutory independence	−0.0177	0.00237	−0.139***	−0.0191
	(−1.017)	(0.107)	(−3.212)	(−1.002)
Constant	−0.193***	−0.233***	−0.0112	−0.190***
	(−5.152)	(−5.355)	(−0.178)	(−5.003)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	11,650	9736	1914	11,650
Adjusted R-squared	0.307	0.301	0.363	0.307

In all specifications, the dependent variable is return on assets (ROA). *Δ Friendly directors* is the change in the percentage of a firm's directors who are connected with the firm's CEO between year *t* and 2003, for all the years after 2003, and zero for other years. Other variables are as defined in Table A1 of the Appendix. *t-statistics* based on robust standard errors clustered at the firm level are reported in parentheses. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

performance, relative to other firms, after the adoption of SOX. Thus, we do not find evidence to support the argument that a SOX-induced increase in board friendliness among firms with high outside director monitoring costs is associated with adverse effects on firm performance. Indeed, the results in column (1) of Panel A show that the association between firm performance and SOX-induced changes in the percentage of friendly directors is somewhat positive at conventional levels of statistical significance (the coefficient estimate on *ΔFriendly Directors* is 0.0397 with a *t*-statistic of 1.680). In column (2) of Panel A, we repeat the analysis specified by Eq. (3) with the simplifying assumption that all non-compliant firms added friendly directors in the post-SOX period, and that these non-compliant firms increased the percentage of friendly directors by the same amount. Again, we find no significant decline in performance in non-compliant firms in the post-SOX period.

One possible explanation for our finding is that the increase in the presence of friendly directors may have led to an increase in the size of the overall network of the outside directors. Friendly directors may be connected to other influencers and business leaders and this increase in network size may be counteracting the negative effect of friendly directors. We perform robustness tests in which we explicitly control for the change in the size of the network of outside directors between 2003 and year *t*. We find that controlling for change in outside director network size does not affect our inference; there is no measurable difference in performance for non-compliant firms that increased the presence of friendly directors (detailed results of these tests are reported in Table A3 of the Appendix).

The results in Panel A of Table 4 may, at first blush, appear to contrast with those reported in Fracassi and Tate (Fracassi and Tate, 2012), who find a negative association between firm value and the percentage of directors with connections to the CEO. However, it is worth noting that the analysis in Panel A captures the effects that *changes in board friendliness* in response to SOX have on firm performance, rather than the general effect of the *level of board friendliness* on performance (which is the key focus of Fracassi and Tate, 2012). As we document in the previous sections, firms with higher costs of outside director monitoring (i.e., non-compliant, smaller, younger, non-S&P 1500 firms with less analyst coverage) experienced more changes in board friendliness than those with lower outside director monitoring costs. The change in board friendliness following the passage of SOX was thus concentrated in firms in which the costs of outside director may equal or exceed the benefits, i.e., firms in which the effect of friendly directors is not negative.

In Panel B of Table 4, we thus examine the association between the general *level* of board friendliness and firm profitability across our sample, rather than just the effect of *changes* in board friendliness following the passage of SOX. In column (1) of Panel B in Table 4, we examine the effect of friendly directors on firm performance in general. The coefficient estimate on the percentage of friendly directors is negative but falls just short of significance at conventional levels (estimate = −0.0190, $t = -1.310$). Because the incentives for increasing friendly directors are different for compliant and non-compliant firms, we split the sample into compliant and non-compliant firms in columns (2) and (3) of Panel B. In the sample of compliant firms, we find a negative and significant relation between the percentage of friendly directors and firm performance (estimate = −0.0308, $t = -1.818$), which is consistent with the results in Fracassi and Tate (2012). In contrast, in the sample of non-compliant firms, the coefficient estimate on the percentage of friendly directors is insignificantly different from zero (estimate = 0.0140, $t = 0.431$). The results in columns (2) and (3) of Panel B suggest that while friendly directors may reduce performance in firms with low monitoring costs, this negative effect of friendly directors might not apply to firms with high monitoring costs. In column (4) of Panel B, we examine the effect of friendly directors on firm performance by including the interaction between *Non_compliant* and *Friendly Directors*. We find that the estimated coefficient on this interaction is positive and significant (estimate = 0.0539, $t = 1.666$), while the coefficient estimate on *Friendly Directors* is negative and significant (estimate = −0.0312, $t = -1.851$). This result confirms the findings from columns (2) and (3).

The results in Panel B of Table 4 are consistent with the hypothesis that the impact of friendly directors varies with firms' costs of outside director monitoring. In firms with relatively low outside director monitoring costs (e.g., compliant firms), there is a negative

association between the percentage of friendly directors and firm profitability. This negative relation is consistent with the findings from Fracassi and Tate (2012), who focus on the average effect of friendly directors on firm performance and use a sample consisting of S&P 1500 firms that theory suggests will have low outside director monitoring costs. In contrast, in firms with high monitoring costs, friendly directors do not necessarily have a detrimental effect on firm performance. Taken together, the results in Table 4 provide support for the conjecture that the addition of friendly directors by firms with high costs of outside director monitoring was an efficient response to reduce the additional burden of outside director monitoring imposed by SOX and the exchange listing requirements.

5. Alternative explanations and additional analysis

5.1. Are the firms that added friendly directors after the passage of SOX poorly governed firms?

Our results thus far suggest that firms who face high costs of outside director monitoring responded to the increased outside director monitoring mandates of SOX and the exchange listing requirements by replacing inside directors with outsiders who are connected to their CEOs. These connected friendly directors are likely to monitor the CEO less intensively than unconnected outsiders, thus allowing these firms to keep the level of outside director monitoring close to what would be optimal for value maximization. However, an alternative explanation for our results is that non-compliant firms (who had a minority of outside directors on their boards prior to the adoption of SOX) were merely poorly governed firms at the time of the adoption of SOX and the exchange listing requirements. These firms, in trying to protect their poor governance, appointed friendly directors in their efforts to circumvent the spirit of the new regulations.

While we do not completely discount the possibility that some firms with a minority of independent directors on the eve of the adoption of SOX are indeed poorly governed firms, systematically poor governance of these firms does not appear to explain our results. One piece of evidence for this argument comes from Section 4.5, where we show that non-compliant firms were not systematically poorer performers than compliant firms. The results in Section 4.5 also show that the addition of friendly directors in response to SOX did not appear to reduce performance either generally, or in non-compliant firms specifically. Thus, these results by themselves cast doubt on the alternative explanation that non-compliant firms who added friendly directors are merely poorly governed firms who chose to remain that way.

Nevertheless, firm profitability may not fully capture the extent to which firms that added friendly directors in the post-SOX era were, *ex-ante*, poorly governed firms. We examine this further by assessing the extent to which other measures of governance are associated with increases in the percentage of friendly directors in the post-SOX era. We focus on four firm characteristics that prior literature suggests may serve as proxies for governance quality – the extent of institutional ownership (Chung and Zhang, 2011), large block ownership (Becker et al., 2011), whether or not the CEO is chair of the board (Core et al., 1999), and a composite of anti-takeover provisions that may entrench managers (Bebchuk et al., 2009). To determine the extent to which each of these governance measures relates to the appointment of friendly directors following the adoption of SOX, we carry out regressions using the following specification:

$$\begin{aligned} Friendly\ Directors_{i,t} = {} & \alpha + \kappa \times Gov\_Proxy_{i,t} + \gamma \times Non\_compliant_i \times Gov\_Proxy_{i,t} + \theta \times Gov\_Proxy_{i,t} \times SOX_t \\ & + \beta \times Non\_compliant_i \times Gov\_Proxy_{i,t} \times SOX_t + Controls_{i,t} + Fixed\ effects + \epsilon_{i,t} \end{aligned} \quad (4)$$

The variable *Gov_Proxy* is one of the following four proxies for quality of governance:

- *Institutional Holding* is the percentage of a firm's shares held by institutional investors;
- *Block-holding* is the total percentage of a firm's shares held by individuals or institutions who individually own at least 5% of a firm's shares;
- *CEO Chair* is a binary variable that equals one (zero, otherwise) if the CEO is also the chair;
- *E-Index* is the firm's entrenchment index, from (Bebchuk et al., 2009).

The coefficient (θ) on the interaction term, *Gov_Proxy* × *SOX*, provides a general estimate of the effect that governance had on changes in the percentage of friendly directors in response to SOX. The coefficient (β) on the interaction term, *Non_compliant* × *Gov_Proxy* × *SOX*, provides an estimate of the effect that governance had on changes in the percentage of friendly directors in non-compliant firms.

We present the results from estimating Eq. (4) in Table 5. We find no significant association between governance and additions of friendly directors, either in general, or in non-compliant firms specifically, using any of our governance proxies. These results further cast doubt on the alternative explanation that firms that added friendly directors to their boards following the adoption of SOX were uniquely poorly governed firms. To the extent that our proxies reflect inherent measures of governance quality, the results show that governance did not predict subsequent increases in the percentage of friendly directors that were added to the firm's board.

5.2. A tight local labor market for directors?

An alternative explanation for the increase in the percentage of friendly directors in non-compliant firms' boardrooms is that the labor market for independent directors may be especially tight for these firms. Knyazeva et al. (2013) find that the number of local

Table 5
Friendly directors and governance.

	(1)	(2)	(3)	(4)
Institutional holding	−0.0368			
	(−1.373)			
Non-compliant × Institutional holding	0.0804			
	(1.384)			
Institutional holding × SOX	0.0199			
	(0.804)			
Non-compliant × Institutional holding × SOX	−0.0674			
	(−1.138)			
Block-holding		−0.0189		
		(−0.728)		
Non-compliant × Block-holding		0.0754*		
		(1.787)		
Block-holding × SOX		0.0230		
		(0.911)		
Non-compliant × Block-holding × SOX		−0.0633		
		(−1.236)		
CEO chair			0.0117	
			(1.122)	
Non-compliant × CEO chair			−0.0284	
			(−1.065)	
CEO chair × SOX			0.000871	
			(0.0777)	
Non-compliant × CEO chair × SOX			0.0183	
			(0.586)	
E-index				0.00776
				(1.368)
Non-compliant × E-index				−0.0162*
				(−1.843)
E-index × SOX				−0.00491
				(−1.115)
Non-compliant × E-index × SOX				0.0118
				(1.298)
Non-compliant × SOX	0.102***	0.0892***	0.0498**	0.0352
	(2.905)	(3.902)	(2.281)	(1.403)
Non-compliant	−0.111***	−0.0936***	−0.0376*	−0.0306
	(−3.328)	(−5.007)	(−1.852)	(−1.253)
Market value of equity (Log)	0.00698***	0.00598***	0.00659***	0.0107***
	(2.617)	(2.640)	(2.951)	(3.046)
SOX	−0.0107	−0.00990	0.000595	0.0303
	(−0.415)	(−0.480)	(0.0291)	(1.395)
Debt	0.0110	0.00756	0.0334	0.0127
	(0.519)	(0.355)	(1.256)	(0.460)
Number of segments (Log)	0.00190	0.00205	0.00451	−0.00194
	(0.350)	(0.377)	(0.804)	(−0.303)
Firm age	−0.00239**	−0.00239**	−0.00246**	−0.00263**
	(−2.207)	(−2.207)	(−2.059)	(−2.087)
Firm age squared	2.26e-05	2.31e-05	2.27e-05	2.20e-05
	(1.364)	(1.396)	(1.266)	(1.174)
Market-to-book	−0.000355	−0.000258	9.48e-05	0.000683
	(−0.494)	(−0.365)	(0.117)	(0.711)
R&D	0.0985**	0.0996**	0.0942**	0.172**
	(2.110)	(2.147)	(2.026)	(2.031)
FCF	0.0165	0.0128	−0.00167	−0.0682*
	(0.885)	(0.673)	(−0.0887)	(−1.727)
Adj. EBIT	5.98e-05	2.40e-05	0.000110	0.000205
	(0.156)	(0.0629)	(0.306)	(0.526)
Number of local firms (Log)	0.00448*	0.00435*	0.00364	0.00422
	(1.722)	(1.682)	(1.316)	(1.187)
CEO age	0.00127***	0.00129***	0.00128***	0.00230***
	(2.759)	(2.800)	(2.597)	(4.043)

(*continued on next page*)

Table 5 (*continued*)

	(1)	(2)	(3)	(4)
CEO duality (t − 1)	0.00291	0.00256	−0.00499	−0.000171
	(0.405)	(0.354)	(−0.951)	(−0.0207)
Constant	−0.0199	−0.0260	−0.0472	−0.173***
	(−0.419)	(−0.548)	(−1.004)	(−3.182)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	9296	9293	10,215	5936
Adjusted R-squared	0.047	0.047	0.048	0.067

The dependent variable in all regression models is *%Friendly directors*, which is the percentage of a firm's directors who are socially or professionally connected to the firm's CEO. *Institutional holding* is the percentage of a firm's shares held by institutional investors. *Block-holding* is the total percentage of a firm's shares held by individuals or institutions who individually own at least 5% of a firm's shares. *CEO chair* is a binary variable that equals one (zero, otherwise) if the firm's CEO is also the chair of the board. *E-index* is the firm's entrenchment index. Other variables are as defined in Table A1 of the Appendix. *t-statistics* based on robust standard errors clustered at the firm level are reported in parentheses. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

firms (and by extension, the number of local business executives) is a significant predictor of board independence. They argue that firms, especially smaller ones, tend to hire directors from their local markets. With more firms in their local markets, the focal firms have a larger potential supply of independent directors from these surrounding firms' executives. This larger supply of independent directors lowers the cost of appointing independent directors, thus allowing firms to hire more of these directors.

However, the passage of SOX shifted the demand curve for independent directors outward, which, in turn, increased the fixed costs of hiring independent directors (Linck et al., 2009). Non-compliant firms, which are usually smaller firms, thus faced a relatively higher fixed cost of hiring independent directors in the post-SOX era. The constraints on finding independent directors is further exacerbated if these non-compliant firms are also more likely to be located in smaller metropolitan areas with a limited supply of firms and/or business executives than compliant firms. Therefore, one way in which these firms can comply with higher board independence mandates without incurring the costs of hiring fully independent directors is by tapping statutorily independent but *friendly* directors who are in their social networks. As such, our findings in the previous sections may simply reflect the possibility that, when required to appoint independent directors, constraints on the pool of available independent directors forced non-compliant firms to hire friendly independent directors, rather than non-compliant firms deliberately choosing friendly directors as a second best solution towards achieving efficient board structures.

We explicitly explore this alternative explanation by examining the relation between the size of local labor markets for independent directors and boards' percentage of friendly directors. In a similar manner to our prior analysis, we estimate the following regression:

$$\begin{aligned} Friendly\ Directors_{i,t} = {} & \alpha + \theta \times Num\ of\ Local\ Firms_{i,t} \times SOX_t + \beta \times Non\_compliant_i \times Num\ ofLocal\ Firms_{i,t} \times SOX_t \\ & + \gamma \times Non\_compliant_i \times Num\ ofLocal\ Firms_{i,t} + \kappa \times Num\ of\ Local\ Firms_{i,t} + Controls_{i,t} + Fixed\ effect + \epsilon_{i,t} \end{aligned} \quad (5)$$

Num of Local Firms is the natural logarithm of the size of local independent director market. We follow Knyazeva et al. (2013) in defining this proxy as the number of firms located within 60 miles of the focal firm.[8] We also include the same set of control variables as we do in Eq. (2) to account for other possible determinants of board independence. The labor market constraint alternative explanation predicts that, after the effective implementation of SOX, firms located in areas with more constrained labor markets for independent directors (i.e., smaller value for *Num of Local Firms*) would have increased the percentage of friendly directors more. More importantly, this effect should be more pronounced in non-compliant firms. If this alternative explanation is relevant, we expect a significantly negative coefficient for the triple interaction term between *Num of Local Firms*, *SOX* and *Non-compliance* (i.e., $\beta < 0$ equation in Eq. (5)).

Before conducting our regression analysis, we compare the size of local labor markets for independent directors for non-compliant firms and compliant firm respectively. We find that the average number of local firms is 248 for non-compliant firm and 245 for compliant firm. Thus, there is no significant difference in the relative sizes of the labor markets for independent directors for non-compliant and compliant firms. This piece of evidence does not lend support to the argument that our results are driven simply by the possibility that non-compliant firms are more likely to be in places with tighter labor markets for directors.

We present the results from estimating Eq. (5) in Table 6. Column (1) shows the results obtained from running the regression analysis for the full sample. Consistent with the idea that, in general, firms located in areas with smaller labor markets for independent directors were more likely to add friendly directors in the post-SOX period, we find a significantly negative coefficient estimate on the interaction term, *Number of local firms (Log)* × *SOX* ($\theta = -0.00630$; $t = -1.825$). However, more relevant to our

[8] The results are similar when we use 100 miles radius to define local firms.

Table 6
Director labor market and board friendliness.

	Full sample	Compliant	Non-compliant
	(1)	(2)	(3)
Number of local firms (Log) × SOX	−0.00630*	−0.00609*	−0.00161
	(−1.825)	(−1.770)	(−0.231)
Non-compliant × Number of local firms (Log) × SOX	0.00397		
	(0.501)		
Non-compliant × Number of local firms (Log)	−0.00163		
	(−0.200)		
Non-compliant	−0.0455		
	(−1.003)		
Non-compliant × SOX	0.0423		
	(0.954)		
Market value of equity (Log)	0.00666***	0.00637***	0.00667
	(2.985)	(2.660)	(1.082)
SOX	0.0275	0.0264	0.101
	(1.054)	(1.010)	(1.599)
Debt	0.0343	0.0355	0.0401
	(1.285)	(1.205)	(0.612)
Number of segments (Log)	0.00434	0.00218	0.0120
	(0.773)	(0.352)	(0.894)
Firm age	−0.00249**	−0.00230*	−0.00200
	(−2.095)	(−1.808)	(−0.536)
Firm age squared	2.34e-05	2.26e-05	2.13e-06
	(1.315)	(1.197)	(0.0360)
Market-to-book	8.66e-05	0.000137	−0.00200
	(0.106)	(0.160)	(−1.001)
R&D	0.0949**	0.0970*	0.0722
	(2.049)	(1.828)	(0.813)
FCF	−0.00137	−0.0166	0.0344
	(−0.0729)	(−0.778)	(0.758)
Adj. EBIT	0.000116	1.79e-05	0.000964
	(0.317)	(0.0473)	(0.865)
Number of local firms (Log)	0.00827**	0.00711*	0.00845
	(1.976)	(1.697)	(1.088)
CEO age	0.00135***	0.00152***	0.000424
	(2.813)	(2.809)	(0.410)
CEO duality (t−1)	0.00262	0.00550	−0.0125
	(0.349)	(0.711)	(−0.564)
Constant	−0.0740	−0.0729	−0.196*
	(−1.580)	(−1.407)	(−1.892)
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Observations	10,215	8460	1755
Adjusted R-squared	0.048	0.042	0.150

The dependent variable in all regression models is *Friendly directors*, which is the percentage of a firm's directors who are connected with the firm's CEO. Other variables are as defined in Table A1 of the Appendix. *t-statistics* based on robust standard errors clustered at the firm level are reported in parentheses. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

analysis, we find no evidence to support the argument that tight local labor markets for directors can explain our finding that non-compliant firms were more likely than compliant firms to hire friendly directors in the post-SOX era. As shown in column (1) of Table 6, the coefficient estimate on the three-way interaction term, *Non-compliance × Number of local firms (Log) × SOX*, is not significantly different from zero ($\beta = 0.00397$, $t = 0.501$). In columns (2) and (3), we estimate Eq. (5) separately for non-compliant and compliant firms.[9] We find that the coefficient estimate on the interaction term, *Number of local firms (Log) × SOX*, is significantly negative ($\theta = -0.00609$; $t = -1.770$) in the sample of compliant firms but not different from zero in the sample of non-compliant firms ($\theta = -0.00161$; $t = -0.231$). Thus, it does not appear that non-compliant firms in tight labor markets were more likely to hire friendly directors than those in less tight markets were. Taken together, the results in this section suggest that tight labor markets do not explain the increase in friendly directors among non-compliant firms.

[9] [9] This setup requires us to drop the variable *Non-compliant* and its associated interactions from the estimation.

5.3. Increased demand but constant supply of independent directors?

Our analysis thus far suggests that firms with higher outside director monitoring costs were more likely than other firms to replace inside directors with friendly outside directors since the passage of SOX. Another potential alternative explanation for our results is that this increase in the percentage of friendly directors is merely coincidental with an increase in the need to hire directors who are more independent in general. The supply of well-educated, experienced and competent individuals is finite, and will increase slowly in response to a sudden increase in the demand for these individuals. The SOX-induced shock to the demand for independent directors may have simply drawn professionals and other executives that just happen to be more connected to CEOs, but who otherwise may not have been considered for directorships, into the labor market for directors. If this alternative explanation was driving our findings, we would find no difference in the friendliness of independent directors nominated by CEOs and those nominated by other parties in the firm's nexus of contracts (e.g., a major shareholder), or recruited via the use of an executive search firm. In other words, if the increase in board friendliness was just a demand-driven shock rather than a deliberate effort to reduce excess monitoring, there should be no difference in the friendliness of directors nominated by various constituents of the firm. We explore this idea further in this section.

Akyol and Cohen (2013) note that the SEC passed a regulation, which became effective in 2004, that requires firms to disclose their director nomination process in their proxy statements. They manually collect data on who nominated those newly appointed directors for a sample of publicly traded firms from 2004 to 2008.[10] Specifically, they identify directors nominated because of a merger, or are recommended by: (i) the CEO; (ii) a search firm; (iii) other executives; (iv) an independent director; (v) a major shareholder; (vi) the firm's nominating committee.

We merge the data from Akyol and Cohen (2013) into ours and identify whether a newly appointed independent director is connected with the CEO.[11] Because there are no shared director identifiers from their data and BoardEx, we match the data by firm CIKs and director names. Our matching procedure results in a sample of 2861 unique newly appointed independent directors. We then employ a logistic regression to investigate whether or not friendly directors are more likely to be nominated by CEOs. Specifically, we carry out the following regression:

$$\log(\textit{odds ratio of friendly director}_{j,i,t}) = \alpha + \beta \times \textit{CEO Nominated}_{j,i,t} + \textit{Controls}_{i,t} + \textit{Fixed Effects} + \epsilon_{i,t} \quad (6)$$

CEO Nominated is a binary variable with value of one (and zero, otherwise) if the CEO of their firm nominated a newly appointed director.[12] We include, as control variables, market value of equity, board size, statutory independence, and CEO age. We also include the size of the CEO's network, *CEO Network Size (Log)*, to account for the possibility that CEOs who have larger networks are more likely to recommend directors who fall within their networks even if they are not recommending these directors for their friendliness.

We report the results from this analysis in Panel A of Table 7. We first run our test with firm fixed effects and document the results in column (1). As shown, the estimated coefficient on the *CEO Nominated* variable is 1.517 ($z = 4.311$). This result supports our hypothesis that newly appointed independent directors were more likely to be friendly if they were nominated by CEOs. Indeed, given that we use firm-fixed effects in this regression, the results suggest that even *within* firms, CEOs were more likely to nominate friendly directors than other individuals or parties.

It is however noteworthy that the use of firm fixed effects significantly reduces the sample size (only 578 out of the original sample of 2861 director appointments are used in the firm fixed effects regression). This reduction in sample size is because 758 firms appointed only either friendly or unfriendly directors. This significant reduction in sample size might pose a concern to our findings. As such, in column (2), we run our test using only industry fixed effects. The results from column (2) show that our findings are not due to the smaller sample; *CEO Nominated* still has a positive and significant estimated coefficient of 1.009 ($z = 4.829$).

In addition to the director-level analysis, we perform a similar investigation at the firm level. Specifically, we carry out a regression of the percentage of friendly directors in a firm on the percentage of newly appointed independent directors who were nominated by CEOs (we include the same controls and fixed effects as in Eq. (6) above). We report our results in Panel B of Table 7. As shown, the results are similar to the ones obtained from the director-level analysis. CEOs were more likely to nominate friendly directors than other individuals or parties.

The results in Table 7 clearly show that friendly directors were more likely to be nominated by the CEO (as opposed to being nominated by other parties), rather than a general demand shock leading to the nominations of individuals who just happen to be connected to the CEO. However, one of the consequences of SOX and the exchange listing requirements was to nudge firms towards recruiting directors with significant financial management training and experience. These types of individuals, given their ability and prior experience, may be more likely to be connected to the CEO. This possibility means that our results in Table 7 may simply be explained by CEOs being more likely to recommend financial experts, or higher quality individuals in general, in order to help their firms to fulfil their need for highly qualified directors. In a series of robustness tests (details of which are reported in Panel A in Table

[10] We thank Ali Akyol and Lauren Cohen for sharing their manually collected data with us. We provide only a brief description of their data in our paper. Interested readers should refer to their original paper for further details.

[11] We focus on independent directors from the Akyol and Cohen (Akyol and Cohen, 2013) data, because, in our framework, inside directors are already considered friendly with respect to monitoring their CEOs.

[12] It is possible that a newly appointed director is nominated by more than one party (e.g., by both the CEO and outside directors). We classify the director as CEO nominated if at least one of the nominating parties is the CEO. In untabulated analysis, we employ a stricter definition of CEO nomination, where we require a director to be nominated by only the CEO. Our results using this alternative definition are similar to those reported.

Table 7
Friendliness of newly appointed independent directors.

Panel A			Panel B		
	(1)	(2)		(1)	(2)
CEO nominated	1.517***	1.009***	CEO nominated (%)	0.113***	0.0787***
	(4.311)	(4.829)		(2.921)	(3.331)
CEO network size (Log)	0.0614	0.254***	CEO network size (Log)	−0.00170	0.00967***
	(0.350)	(2.807)		(−0.269)	(2.731)
Market value of equity (Log)	0.881**	−0.0433	Market value of equity (Log)	0.0431***	−0.000182
	(2.549)	(−0.630)		(2.592)	(−0.0407)
Board size	0.0131	0.0206	Board size	0.00131	0.00222
	(0.107)	(0.313)		(0.158)	(0.540)
Statutory independence	−0.330	0.151	Statutory independence	−0.0843	−0.0332
	(−0.146)	(0.151)		(−0.608)	(−0.542)
CEO age	0.0167	0.00323	CEO age	0.000783	0.000374
	(0.520)	(0.242)		(0.487)	(0.473)
Constant		−2.959**	Constant	−0.261	0.0508
		(−2.299)		(−1.333)	(0.596)
Firm fixed effects	Yes	No	Firm fixed effects	Yes	No
Industry fixed effects	No	Yes	Industry fixed effects	No	Yes
Year fixed effects	Yes	Yes	Year fixed effects	Yes	Yes
N	578	2645	Observations	1924	1924
Pseudo R-squared	0.0729	0.0634	Adjusted R-squared	0.018	0.015

CEO nominated is a binary variable with value one if the newly appointed independent director is nominated by their CEO, and zero otherwise. *CEO nominated (%)* is the percentage of newly appointed independent directors in a firm-year that is nominated by their CEO. Other variables are as defined in Table A1 of the Appendix. In Panel A, the dependent variable is *Friendly director*, a binary variable with value one if the newly appointed independent director is socially or professionally connected with the CEO, and zero otherwise. z-*statistics* are reported in parentheses. In Panel B, the dependent variable is *%Friendly director*, the percentage of Friendly Directors among all newly appointed directors in a firm-year. Standard errors are calculated by clustering at the firm level. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

A4 of the Appendix), we find that this does not appear to be the case. CEOs were not more likely to have nominated directors who either: (i) attended a highly selective college; (ii) were qualified financial managers; or (iii) had extensive management experience.[13]

5.4. Are friendly directors more likely to be included on key board committees?

Although SOX and the corresponding exchange rules effectively require all firms to have majority independent boards, this requirement on director independence is more stringent for three key board committees – the audit, compensation, and nomination committees. Specifically, firms are required to maintain 100% independence on these committees. In order to comply with these rules, firms who had not already complied needed to either appoint new independent directors to these committees, or simply appoint existing independent directors to these committees.

This possibility means that the new rules not only increased monitoring costs in general, they also had the consequence of concentrating these higher outside director monitoring costs in these three specific board committees. If firms responded to the independent director mandates of SOX by appointing independent, yet friendly directors, we expect this adjustment to be especially pertinent in these board committees. Hence, we expect that firms with higher costs of outside director monitoring (i.e., non-compliant firms) to be more likely to put friendly directors on these three specific committees after the passage of SOX. We test this prediction using a logistic regression model:

[13] This particular set of tests investigates whether or not CEOs are more likely to nominate independent directors with higher quality. We also perform additional analysis to investigate whether or not, in response to SOX, firms used their executive networks to recruit high-quality independent directors. Particularly, we test whether friendly directors are more likely, after the passage of SOX, to have either gone to selective schools, have financial management expertise, or more experience in general. The results are reported in Panel B of Table A4. The coefficient estimates on the interaction term, *Friendly* × *SOX*, are significantly negative in columns (1)–(4) and insignificantly different from zero in columns (5) and (6). The negative and/or significant estimates on this interaction term suggests that firms, in response to the demand for high quality independent directors after SOX, did not tend to use their CEOs' networks to merely hire friendly directors who either went to selective schools, have financial management expertise, or more experience in general. In addition, the coefficient estimates on the three-way interaction, *Non-compliant* × *Friendly* × *SOX*, are not different from zero in all specifications. Because non-compliant firms were more likely to hire friendly directors, this suggests that firms with higher monitoring costs were not more likely than other firms to use their executives' networks to recruit to selective schools, have financial management expertise, or more experience in general.

Table 8
Director friendliness and board committee inclusion.

	Full sample	Compliant	Non-compliant
Friendly director	−0.196	−0.195	−0.835*
	(−1.505)	(−1.503)	(−1.700)
Friendly director × SOX	−0.0796	−0.0775	0.848*
	(−0.608)	(−0.595)	(1.773)
Non-compliant	0.454***		
	(2.863)		
Non-compliant × SOX	−0.184		
	(−1.056)		
Friendly director × Non-compliant	−0.516		
	(−0.989)		
Friendly Director × Non-compliant × SOX	0.827*		
	(1.665)		
Market value of equity (Log)	−0.0871***	−0.0850***	−0.0279
	(−3.876)	(−3.485)	(−0.542)
SOX	0.0928	0.0806	1.218***
	(0.517)	(0.437)	(3.018)
Debt	−0.215	−0.215	0.106
	(−1.065)	(−0.984)	(0.200)
Number of segments (Log)	0.00265	0.00373	−0.0826
	(0.0525)	(0.0692)	(−0.633)
Firm age	0.00819	0.00799	0.0162
	(0.844)	(0.768)	(0.488)
Firm age squared	−0.000200	−0.000207	−0.000149
	(−1.325)	(−1.284)	(−0.260)
Market-to-book	−0.00379	−0.00367	0.0128
	(−0.529)	(−0.492)	(0.442)
R&D	−0.871*	−0.897*	−1.223
	(−1.799)	(−1.725)	(−1.060)
FCF	0.323*	0.249	0.190
	(1.677)	(1.152)	(0.504)
Adj. EBIT	0.00328	0.00389	−0.00412
	(0.710)	(0.807)	(−0.239)
Number of local firms (Log)	−0.0641**	−0.0706**	−0.0331
	(−2.368)	(−2.353)	(−0.486)
CEO age	−0.00469	−0.00486	−0.00438
	(−1.306)	(−1.236)	(−0.470)
CEO duality (t – 1)	0.0213	0.0151	0.0863
	(0.354)	(0.233)	(0.549)
Constant	3.304***	3.337***	12.81***
	(5.692)	(5.495)	(9.250)
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Observations	59,626	52,046	7511
Pseudo R-squared	0.0221	0.0218	0.0465

The dependent variable is a binary variable that equals one (zero otherwise) when an independent director belongs to any of the following three committees – audit committee, compensation committee, and nomination committee. Other variables are as defined in Table A1 of the Appendix. *z-statistics* are reported in parentheses. Standard errors are clustered at the firm level. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

$$\begin{aligned}\log(\textit{odds ratio of being included on the three key committees}_{j,i,t}) = {} & \alpha + \kappa \times \textit{FriendlyDirector}_{j,i,t} + \gamma \times \textit{FriendlyDirector}_{j,t} \times \textit{SOX}_t \\ & + \theta \times \textit{FriendlyDirector}_{j,i,t} \times \textit{Non\_compliant}_i \\ & + \beta \times \textit{FriendlyDirector}_{j,t} \times \textit{Non\_compliant}_i \times \textit{SOX}_t + \textit{Controls}_{i,t} \\ & + \textit{Fixed effects}_{i,t} + \epsilon_{i,t} \end{aligned} \quad (7)$$

β, which is the estimated coefficient on the interaction term, *Friendly Director* × *Noncompliance* × *SOX*, measures the extent to which friendly directors are more likely to be included on the audit, compensation and nomination committee.

We present the results from estimating Eq. (7) in Table 8. As predicted, we find in column (1) of Table 8 that after the adoption of SOX, friendly directors in non-compliant firms were more likely to serve on the three key committees; the estimated coefficient on *Friendly Director* × *Non-compliant* × *SOX* is positive and significant (β = 0.827, t = 1.665). In columns (2) and (3), we estimate Eq. (7) separately for non-compliant and compliant firms.[14] We find that friendly directors were more likely to be included on the three

[14] This setup requires dropping the variable *Non_compliant* and its associated interactions from the estimation.

committees only among non-compliant firms; the coefficient estimate on the interaction term, *Friendly Director* × *SOX*, is significantly positive ($\gamma = 0.848$; $t = 1.773$) in the sample of non-compliant firms but not different from zero in the sample of compliant firms ($\gamma = -0.0775$; $t = -0.595$).

5.5. CEO turnover and friendly directors

Our definition of friendly directors as those who share social or professional connections to the CEO means that the percentage of friendly directors changes (mechanically) with CEO turnover. This fact has a number of potential implications for our results. One is that board composition itself could affect the identity of the hired CEO. Directors who currently sit on a board may hire a CEO with whom they are connected. As such, the degree of friendliness on the board may have arisen from the choice of CEO by current directors rather than the appointment of friendly directors by the existing CEO. Another implication is that changes in monitoring cost could themselves affect the propensity to experience CEO turnover.

These implications might affect the interpretation of our results. To address this potential issue, we examine the extent to which firms appoint friendly directors in a sample that excludes every firm that had at least one CEO turnover in the post SOX period.[15] We carry out this analysis using the five proxies for cost of monitoring that we discussed in Section 4: a minority of independent directors on the eve of SOX (*Non_compliant*), membership of the S&P 1500 index (*S&P 1500*), analyst coverage (*Number of Analyst Following*), market value (*Market Value of Equity*), and age (*Firm Age*). We present the results in Table A5 of the Appendix. We find that our inference that firms with higher monitoring costs were more likely to add friendly directors following the passage of SOX remains unchanged. We find a positive coefficient estimate on the interaction between *SOX* and *Non_compliant*, and negative coefficient estimates on the interactions between *SOX* and each of the four other proxies for monitoring costs (although that on *Number of Analysts Following* falls just short of significance at the conventional levels).

5.6. Measuring board friendliness and the strength of individual connections

Our definition of board friendliness relies on the typical assumption in the literature that all social and professional networks are equal. In other words, a director is friendly regardless of how the connection between the director and the CEO was established. However, a strong argument could be made that this definition of friendliness may be somewhat simplistic. For example, two individuals who have served on the same board at the same time are much more likely to have a close professional and personal relationship than two individuals that happen to have attended the same university at the same time (who may or may not have regularly crossed paths).

In this subsection, we examine the robustness of our key findings to a measure of board friendliness that assigns different weights to connections based on the likely strength of those connections. Specifically, we assign a weight based on decreasing order of strength (from 5 to 0, respectively) to each of six types of connections between two individuals as follows: (i) both served on the same board; (ii) both worked in the same organization in which one was a director and the other was not; (iii) both worked in the same organization but neither were directors; (iv) both attended the same university; (v) any other type of connections; and (vi) no connections. We then estimate Eq. (1) using this strength-weighted measure of friendly directors as the dependent variable. The results which are reported in column (1) of Table A6 of the Appendix show that our inference remains unchanged: the percentage of friendly directors increased more significantly after SOX in firms with higher cost of monitoring.

5.7. Friendly directors, co-opted directors, gray directors, and networks as hiring channels

Coles, Naveen and Daniel (Coles et al., 2014) present evidence that co-opted directors – directors appointed after the start of the tenure of the current CEO – may be less effective monitors of the CEO. This finding raises the possibility that the likelihood that a firm may appoint a friendly director in the post-SOX period may depend on the degree to which the board is already co-opted. To examine this possibility, we estimate our model for the propensity to add friendly directors (Eq. (1)) while controlling for the percentage of the board that is co-opted. We present the results in column (2) in Table A6. The results show a negative association between the percentage of friendly directors and percentage of co-opted directors, reflecting the fact that firms with co-opted directors have already lowered the costs of outside director monitoring and thus have less need for friendly directors. However, more pertinent for us is that accounting for co-opted directors does not change our inference with respect to friendly directors in the post-SOX period. The interaction between Non-compliant and SOX remains significant and positive. Firms with higher monitoring costs and lower benefits from outside directors were more likely to appoint friendly directors in the post-SOX era regardless of the number of co-opted directors.

Next, we examine the extent to which there is an overlap between friendly directors and “gray” directors. Gray directors (such as defined by Shivadasani and Yermack, 1999) are outside directors who are retired employees, relatives of the CEO, and persons with disclosed conflicts of interest such as outside business dealings with the company or interlocking director relationships with the CEO. It is possible that the increase in the number of friendly directors may simply reflect an increase in the number of gray directors. To investigate this possibility, we obtain the number of such gray directors from the RiskMetrics database. An inspection of the data

[15] We note that removing every single firm with at least one CEO turnover comes at the cost of losing almost 50% of our sample observations (potentially weakening the power of our tests).

suggests that there is little overlap between gray directors and friendly directors. Over our entire sample period, only 2.46% of our directors are classified as gray directors. Prior to SOX, the percentage of directors classified as gray was 4.36% and this declined to 1.63% probably as a result of the tighter definitions of independence and requirement for higher overall independence prescribed by SOX and the exchange listing requirements respectively. The decline in the percentage of gray directors in the post-SOX era is in sharp contrast to the increase in friendly directors over the same period that we document throughout the paper.

We estimate our model for the propensity to add friendly directors (Eq. (1)) while controlling for the percentage of gray directors. We present the results in column (3) in Table A6. The results show that firms with higher monitoring costs and lower benefits from outside directors monitoring were more likely to appoint friendly directors in the post-SOX period and that this inference was not affected by the number of directors classified as gray directors.

Finally, we examine the extent to which the overall size of the network of all of the firms' top managers and directors affects the propensity to appoint friendly directors. Because existing managers and directors have better understanding of the quality of potential independent directors in their networks, it is also possible that firms with deeper networks would hire directors from those who are in the networks of their existing directors. If this is generally true, our findings might be explained simply by the possibility that firms with larger executive and director networks are more likely to hire independent directors from their networks.

We estimate our model for the propensity to add friendly directors (Eq. (1)) while controlling for the size of a firm's networks (defined as the logarithm of number of connections a firm has through its directors). We present the results in column (4) in Table A6. As shown, firms with larger networks are more likely to hire friendly directors; however, our finding that non-compliant firms were more likely to add friendly directors after SOX is not affected by adding this additional control.

6. Conclusion

The Sarbanes-Oxley Act of 2002 (SOX) and the new rules passed by stock exchanges in response to high profile corporate failures at the turn of the century imposed higher levels of board independence on all firms with publicly traded equity or debt in the U.S. This “one-size-fits-all” solution was intended to solve the problem of breakdowns in corporate governance that was perceived to be associated with several high-profile corporate failures in the early 2000s. However, recent research suggests that firms have optimal board structures that are determined by their firm characteristics. Therefore, the “one-size-fits-all” regulation may have the unintended consequence of pushing firms with lower optimal board independence levels away from their equilibrium by demanding significantly greater presence of outside directors.

In this paper, we show that firms, in an attempt to reduce the adverse effects imposed by SOX and the new exchange rules, increased the presence of friendly independent directors on their boards after SOX. We define friendly directors as those who are deemed independent by the letter of the law, but who share social or other professional connections to the CEO. Friendly independent directors are less likely to monitor CEOs than other independent directors. By substituting insiders with outside directors who are socially or professionally connected to CEOs, firms are able to circumvent the stricter requirements on board independence imposed by the new regulations, while still complying with the letter of the law.

We also show that the increase in the percentage of friendly directors following the passage of SOX is more prevalent among firms with higher outside director monitoring costs (e.g., smaller, young firms and firms with less analyst coverage) who also tend to be the firms with lower benefits from outside monitoring. This finding indicates that, while, on average, there was a general increase in the appointment and prevalence of friendly directors, firms that bear the largest relative regulatory burden from SOX were more likely to do so. This increase, however, appears to have had no negative effects on performance, suggesting that it may simply reflect firms' efforts to maintain optimal board structures. We rule out several alternative explanations of our findings. For example, we show that this phenomenon cannot be explained by the idea that poorly governed firms using their CEOs' friends to deliberately protect their bad governance. We also demonstrate that our finding cannot be attributed to tight labor markets due to an increased demand for qualified independent directors.

Our findings provide evidence that using friendly independent directors to replace insiders has served as a way to help firms avoid the higher costs of outside director monitoring imposed by SOX and stock exchanges. Overall, our results contribute to the debate on the costs and benefits of outside director monitoring. Our study also sheds new light on the understanding of how executive networks can be beneficial to firms.

Appendix A

Table A1
Key variable definitions.

Variable	Definition
Adj. EBIT	Earnings before interest and taxes (EBIT) scaled by total assets, adjusted by industry mean EBIT/total assets
Firm age	Number of years for which the firm has been included in Compustat
CEO age	The CEO's age in the corresponding year
CEO duality	A binary variable with value one if the CEO is also the chair of the board, and zero otherwise
CEO nominated	A binary variable with value 1 if a newly appointed independent director is nominated by their CEO
CEO nominated (%)	The percentage of newly appointed independent directors who are nominated by their CEOs in a firm-year

(*continued on next page*)

Table A1 (*continued*)

Variable	Definition
Debt	Long-term Debt/total assets
FCF	Free cash flow (as defined in Linck et al., 2008)
Leverage	Total liabilities normalized by total assets
Market-to-book	Market value of common shares/Book value of common shares
Market value of equity (Log)	Natural logarithm of the market value of a firm's common shares ($ million)
Number of analysts following (Log)	Natural logarithm of the number of analysts following the firm's stock
Number of local firms (Log)	Natural logarithm of the number of COMPUSTAT firms within 60 miles of the focal firm
Number of segments (Log)	Natural logarithm of the number of business segments
Non-compliant	A binary variable with value 1 for firms with Statutory Independence (in 2003) ≤ 50%
ROA	Net income/total assets
R&D	R&D expense/total assets
SOX	A binary variable with value one for observations in years starting from 2004, and zero otherwise
S&P1500	A binary variable with value one for stocks included in S&P 1500 index, and zero otherwise
Statutory independence	Percentage of independent directors on a firm's board (using statutory definition of independence) in 2003
% Friendly directors	Percentage of a firm's independent directors who are socially and/or professionally connected with the CEO

Table A2
Friendly directors in the post-SOX era: A smaller window.

	(1)	(2)	(3)	(4)	(5)
Non-compliant × SOX	0.0363***				
	(2.868)				
S&P1500 × SOX		−0.0225**			
		(−2.069)			
Number of analyst following (Log) × SOX			−0.00618		
			(−1.368)		
Market value of equity (Log) × SOX				−0.00586*	
				(−1.797)	
Firm age × SOX					−0.00102***
					(−3.153)
Non-compliant	−0.0372***				
	(−2.851)				
S&P1500		−0.0152			
		(−1.320)			
Number of analyst following (Log)			−0.00443		
			(−0.970)		
Market value of equity (Log)	0.0103***	0.0120***	0.0110***	0.0122***	0.00757***
	(3.076)	(4.990)	(4.329)	(3.464)	(3.623)
Firm age	−0.00261**	−0.00447***	−0.00476***	−0.00496***	−0.00439***
	(−2.108)	(−4.279)	(−4.570)	(−4.733)	(−4.379)
SOX	−0.0127	0.0241	0.0197	0.0594*	0.0359*
	(−0.597)	(1.129)	(0.858)	(1.677)	(1.652)
Debt	0.0307	0.0455*	0.0528**	0.0509**	0.0480*
	(0.949)	(1.799)	(2.068)	(1.997)	(1.877)
Number of segments (Log)	0.00189	0.0138**	0.0118**	0.0125**	0.0121**
	(0.285)	(2.551)	(2.173)	(2.318)	(2.247)
Firm age squared	2.57e-05	5.40e-05***	5.59e-05***	5.99e-05***	6.27e-05***
	(1.318)	(3.249)	(3.369)	(3.582)	(3.668)
Market-to-book	0.000767	7.92e-05	0.000124	0.000242	0.000226
	(0.702)	(0.0971)	(0.152)	(0.297)	(0.277)
R&D	0.0130	0.0752*	0.0771*	0.0706*	0.0692*
	(0.203)	(1.830)	(1.866)	(1.707)	(1.675)
FCF	−0.0917***	−0.0263	−0.0244	−0.0268	−0.0262
	(−2.623)	(−1.384)	(−1.286)	(−1.403)	(−1.363)
Adj. EBIT	0.000336	0.000142	0.000122	6.85e-05	2.74e-05
	(0.701)	(0.277)	(0.238)	(0.133)	(0.0535)
Number of local firms (Log)	0.00517	0.00282	0.00277	0.00209	0.00220
	(1.473)	(1.129)	(1.105)	(0.836)	(0.879)
CEO age	0.00136**	0.00112***	0.00101**	0.00110***	0.00110***

(*continued on next page*)

Table A2 (*continued*)

	(1)	(2)	(3)	(4)	(5)
	(2.500)	(2.638)	(2.358)	(2.586)	(2.585)
CEO duality (t − 1)	0.00316	0.00620	0.00709	0.00566	0.00580
	(0.384)	(0.899)	(1.024)	(0.820)	(0.841)
Constant	0.0144	−0.0991**	−0.0695	−0.0920*	−0.0654
	(0.215)	(−2.141)	(−1.449)	(−1.781)	(−1.419)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	4229	6605	6605	6605	6605
Adjusted R-squared	0.045	0.048	0.046	0.043	0.045

The dependent variable in all regression models is *%Friendly Directors*, which is the percentage of a firm's directors who are socially or professionally connected with the firm's CEO. Other variables are as defined in Table A1 of the Appendix. The sample for all regressions consists of the years 2000–2002 (pre-SOX) and 2005–2007 (post-SOX). *t-statistics* based on robust standard errors clustered at the firm level are reported in parentheses. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

Table A3
Firm profitability and friendly directors: controlling for outside director network size.

	(1)	(2)
Non-compliant	0.00290	−0.00864
	(0.361)	(−0.602)
Δ friendly directors	0.00885	
	(0.321)	
Non-compliant × Δ friendly directors	−0.0402	
	(−0.582)	
Non-compliant × SOX		0.0137
		(1.020)
Δ independent director network size	−0.000669	−0.000708
	(−0.774)	(−0.828)
SOX	0.0139	0.0140
	(1.013)	(1.019)
Market value of equity (Log)	0.0258***	0.0258***
	(10.98)	(11.03)
Debt	−0.0952***	−0.0951***
	(−6.115)	(−6.117)
Firm age	0.000121	0.000124
	(0.872)	(0.893)
Market-to-book	0.00322***	0.00323***
	(3.764)	(3.757)
R&D	−0.791***	−0.791***
	(−7.263)	(−7.235)
Sales std	−0.0420*	−0.0416*
	(−1.724)	(−1.718)
CEO age	0.000543	0.000542
	(1.510)	(1.512)
CEO duality	−0.000388	−0.000355
	(−0.0798)	(−0.0733)
Board size	−0.00602***	−0.00599***
	(−5.670)	(−5.720)
Statutory independence	0.00116	−0.00205
	(0.0687)	(−0.119)
Constant	−0.158***	−0.157***
	(−4.166)	(−4.115)
Industry fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	7003	7003
Adjusted R-squared	0.287	0.287

In all specifications, the dependent variable is return on assets (ROA). *Δ Friendly directors* is the change in the percentage of a firm's directors who are connected with the firm's CEO between year *t* and 2003, for all the years after 2003, and zero for other years. *Δ independent director network size* is the change in the size of a firm's independent directors' networks between year *t* and 2003, for all the years after 2003, and zero for other years. Other variables are as defined in Table A1 of the Appendix. *t-statistics* based on robust standard errors clustered at the firm level are reported in parentheses. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

Table A4
Quality of newly appointed independent directors.

Panel A

	Ivy		Financial expert		Experience	
	(1)	(2)	(3)	(4)	(5)	(6)
CEO nominated	−0.122	0.00220	0.163	0.0676	0.0215	0.0537
	(−0.261)	(0.0119)	(0.397)	(0.356)	(0.525)	(0.861)
CEO network size (Log)	0.0564	0.0643	0.183	0.0592	0.00323	0.0260*
	(0.404)	(1.255)	(1.603)	(1.227)	(0.127)	(1.815)
Market value of equity (Log)	−0.404	0.0697	0.0382	−0.0745	0.00231	0.0518***
	(−1.310)	(1.258)	(0.149)	(−1.416)	(0.0738)	(3.022)
Board size	0.0784	−0.0554	−0.195*	−0.0514	−0.0160	0.0215
	(0.682)	(−1.129)	(−1.802)	(−1.155)	(−1.261)	(1.463)
Statutory independence	−0.210	1.601**	2.681	1.018	0.627**	0.0669
	(−0.0963)	(1.963)	(1.459)	(1.384)	(2.149)	(0.278)
CEO age	0.0242	0.00667	0.00422	−0.00981	0.00185	0.000472
	(0.909)	(0.566)	(0.163)	(−0.942)	(0.524)	(0.148)
Constant		−2.324*		1.517	1.618***	1.121***
		(−1.917)		(1.311)	(3.732)	(3.044)
Firm fixed effects	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	455	2505	533	2520	2690	2690
Pseudo R-sqr/Adjusted R-sqr	0.0389	0.0547	0.0313	0.0422	0.010	0.063

Panel B

Non-compliant × Friendly × SOX	0.275	0.152	−0.152	−0.183	0.0334	0.0790
	(1.212)	(0.696)	(−0.666)	(−0.909)	(0.479)	(1.554)
Friendly × SOX	−0.159**	−0.189***	−0.144**	−0.105*	0.0323	0.0312
	(−2.127)	(−2.883)	(−2.107)	(−1.705)	(1.461)	(1.490)
Non-compliant × Friendly	−0.0472	−0.0402	0.194	0.0652	−0.00825	−0.0622
	(−0.198)	(−0.201)	(0.815)	(0.351)	(−0.105)	(−1.103)
Non-compliant × SOX	−0.0696	−0.0385	−0.00527	0.0396	−0.0370	−0.0169
	(−0.921)	(−0.563)	(−0.0787)	(0.633)	(−1.613)	(−0.962)
Non-compliant	−0.0103	–	−0.00588	–	−0.0201	–
	(−0.107)		(−0.0684)		(−0.668)	
Friendly	0.216***	0.282***	0.176**	0.196***	0.164***	0.128***
	(2.639)	(5.102)	(2.328)	(3.699)	(6.999)	(5.397)
SOX	−0.311***	−0.250***	0.237***	0.305***	−0.0559***	0.0336***
	(−5.910)	(−4.406)	(5.053)	(5.714)	(−3.157)	(2.817)
CEO network size (Log)	0.0166	−0.0113	0.0204*	0.00245	0.0268***	−0.00166
	(1.189)	(−1.059)	(1.756)	(0.250)	(5.388)	(−0.566)
Market value of equity (Log)	0.0586***	−0.00374	−0.0221**	−0.00593	0.0560***	0.0128**
	(4.493)	(−0.222)	(−2.229)	(−0.381)	(12.54)	(2.199)
Board size	0.0125	0.00737	−0.0342***	−0.00240	0.00991**	−0.00698***
	(0.994)	(0.792)	(−3.248)	(−0.275)	(2.115)	(−2.837)
Statutory independence	0.0410	0.107	0.515***	0.133	0.0394	0.00977
	(0.221)	(0.793)	(3.461)	(1.072)	(0.627)	(0.291)
CEO age	−0.00121	−0.00211	−0.00422**	−0.00398**	−0.00197**	−0.000566
	(−0.462)	(−1.026)	(−2.007)	(−2.105)	(−2.077)	(−0.999)
Constant	−1.090***		−0.0217		1.292***	1.894***
	(−4.048)		(−0.0956)		(15.01)	(32.59)
Firm fixed effects	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	81,727	74,711	81,727	79,841	89,306	89,306
Pseudo R-sqr/Adjusted R-sqr	0.0109	0.00152	0.0131	0.00176	0.063	0.004

CEO nominated is a binary variable with value one if the newly appointed independent director is nominated by their CEO, and zero otherwise. *Friendly* is a binary variable with a value of one if the director is an independent director who is socially or professional connected with the CEO, and zero otherwise. Other variables are as defined in Table A1 of the Appendix. In both panels, the dependent variable in columns (1) and (2) is *Ivy*, a binary variable with a value of one if the director attended an Ivy League college, and zero otherwise. The dependent variable in columns (3) and (4) is *Financial expert*, a binary variable with a value of one if the director holds a finance degree or other related degrees and designations (MBA, CFA, CPA); and have a value of zero otherwise. The dependent variable in columns (5) and (6) is *Experience*, the number of board seats for the director. Panel A is based on a sample of newly appointed independent directors, and Panel B is based on all independent directors. z- (or t-) *statistics* are reported in parentheses. Standard errors are calculated by clustering at the firm level. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

Table A5
Friendly directors in the post-SOX era: Excluding firms with CEO turnover.

	(1)	(2)	(3)	(4)	(5)
Non-compliant × SOX	0.0682***				
	(3.878)				
S&P1500 × SOX		−0.0316**			
		(−2.308)			
Number of analyst following (Log) × SOX			−0.00909		
			(−1.464)		
Market value of equity (Log) × SOX				−0.00853*	
				(−1.895)	
Firm age × SOX					−0.00201***
					(−4.625)
Non-compliant	−0.0603***				
	(−3.845)				
S&P1500		−0.0120			
		(−0.822)			
Number of analyst following (Log)			−0.00396		
			(−0.614)		
Market value of equity (Log)	0.00681**	0.0121***	0.0114***	0.0146***	0.00706**
	(2.095)	(3.797)	(3.174)	(3.027)	(2.492)
Firm age	−0.000664	−0.00554***	−0.00601***	−0.00614***	−0.00475***
	(−0.357)	(−3.735)	(−4.072)	(−4.128)	(−3.443)
SOX	0.00124	0.0454	0.0400	0.101*	0.0811**
	(0.0352)	(1.079)	(0.897)	(1.842)	(2.000)
Debt	0.0627*	0.0473	0.0577*	0.0546*	0.0519
	(1.747)	(1.462)	(1.768)	(1.667)	(1.590)
Number of segments (Log)	−0.00161	0.00554	0.00311	0.00379	0.00322
	(−0.192)	(0.731)	(0.411)	(0.501)	(0.425)
Firm age squared	−2.08e−06	6.74e-05***	7.14e-05***	7.42e-05***	7.82e-05***
	(−0.0722)	(2.829)	(3.002)	(3.099)	(3.216)
Market-to-book	0.000379	−0.000362	−0.000348	−0.000146	−0.000229
	(0.313)	(−0.343)	(−0.330)	(−0.140)	(−0.222)
R&D	0.174***	0.127**	0.136**	0.125**	0.123*
	(2.597)	(2.004)	(2.124)	(1.975)	(1.949)
FCF	0.0475**	0.0141	0.0190	0.0155	0.0180
	(1.967)	(0.590)	(0.794)	(0.658)	(0.760)
Adj. EBIT	−1.24e-05	0.000206	0.000214	0.000179	0.000104
	(−0.0265)	(0.409)	(0.425)	(0.353)	(0.205)
Number of local firms (Log)	−0.000244	−0.00251	−0.00202	−0.00320	−0.00298
	(−0.0566)	(−0.728)	(−0.583)	(−0.924)	(−0.861)
CEO age	0.00158**	0.00129**	0.00123*	0.00126**	0.00128**
	(1.976)	(2.055)	(1.931)	(2.006)	(2.024)
CEO duality (t−1)	0.00108	−0.00449	−0.00290	−0.00470	−0.00479
	(0.0897)	(−0.445)	(−0.287)	(−0.464)	(−0.474)
Constant	−0.0727	−0.0446	−0.0196	−0.0601	−0.0376
	(−1.039)	(−0.672)	(−0.268)	(−0.800)	(−0.552)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	5139	7109	7109	7109	7109
Adjusted R − squared	0.095	0.088	0.086	0.083	0.087

The dependent variable in all regression models is *%Friendly Directors*, which is the percentage of a firm's directors who are socially or professionally connected with the firm's CEO. Other variables are as defined in Table A1 of the Appendix. All regressions are based on the sample that excludes all firms that experienced CEO turnover after 2004. *t-statistics* based on robust standard errors clustered at the firm level are reported in parentheses. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

Table A6
Friendly directors, co-opted directors, and gray directors.

	(1)	(2)	(3)	(4)
Non-compliant	−0.228**	−0.0553***	−0.0621***	−0.0540***
	(−2.202)	(−3.997)	(−3.748)	(−3.941)
Non-compliant × SOX	0.232**	0.0627***	0.0525***	0.0591***
	(2.263)	(4.182)	(2.806)	(4.061)
Percentage of co-opted directors		−0.0231**		
		(−2.427)		

(*continued on next page*)

Table A6 (*continued*)

	(1)	(2)	(3)	(4)
Percentage of gray directors			−0.0261	
			(−0.769)	
Firm network size (Log)				0.00894*
				(1.658)
Market value of equity (Log)	0.0246*	0.00698***	0.00938**	0.00453*
	(1.664)	(3.106)	(2.562)	(1.770)
Firm age	−0.0159**	−0.00249**	−0.00146	−0.00221*
	(−2.269)	(−2.111)	(−1.139)	(−1.857)
SOX	0.0674	0.00284	0.00843	−0.00423
	(0.615)	(0.146)	(0.415)	(−0.210)
Debt	0.148	0.0342	0.0209	0.0285
	(0.881)	(1.278)	(0.694)	(1.045)
Number of segments (Log)	0.0122	0.00423	−0.00327	0.00228
	(0.326)	(0.752)	(−0.479)	(0.403)
Firm age squared	0.000184*	2.37e-05	7.96e-06	1.80e-05
	(1.860)	(1.340)	(0.417)	(1.001)
Market-to-book	−0.000354	7.02e-05	−0.000364	0.000167
	(−0.0712)	(0.0859)	(−0.373)	(0.201)
R&D	0.259	0.0963**	0.193**	0.0880*
	(0.749)	(2.057)	(1.989)	(1.862)
FCF	−0.161	−0.000439	−0.0481	0.00469
	(−1.209)	(−0.0232)	(−1.115)	(0.247)
Adj. EBIT	−0.00213	0.000154	−3.23e-05	1.26e-05
	(−1.038)	(0.416)	(−0.0673)	(0.0341)
Number of local firms (Log)	0.00546	0.00350	0.00391	0.00272
	(0.316)	(1.268)	(1.051)	(0.970)
CEO age	0.0130***	0.00135***	0.00242***	0.00157***
	(3.789)	(2.838)	(4.101)	(3.311)
CEO duality (t−1)	0.000753	0.00343	−0.00259	0.00300
	(0.0146)	(0.461)	(−0.306)	(0.404)
Constant	−0.465*	−0.0487	−0.147**	−0.120*
	(−1.739)	(−1.031)	(−2.530)	(−1.946)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	12,342	10,135	5498	9975
Adjusted R-squared	0.049	0.048	0.060	0.047

The dependent variable in all regression models is *%Friendly Directors*, which is the percentage of a firm's directors who are socially or professionally connected with the firm's CEO (column (1) uses connection the strength weighted measure of *Friendly Directors* defined in Section 5.6). Other variables are as defined in Table A1 of the Appendix. *t-statistics* based on robust standard errors clustered at the firm level are reported in parentheses. ***, **, * indicates significance at the 1%, 5% and 10% level respectively.

Table A7
Board monitoring and friendly directors.

Variables	(1)	(2)	(3)	(4)	(5)
Friendly directors × Non-compliant	0.617*	0.195	−1.884**	0.0832	0.00894
	(1.922)	(1.235)	(−1.995)	(0.993)	(0.155)
Friendly directors × Market return × Non-compliant		−0.289	1.434*		
		(−1.415)	(1.819)		
Friendly directors	−0.141	−0.0781	0.171	0.0489	0.00935
	(−1.181)	(−0.974)	(0.483)	(0.798)	(0.336)
Market return		0.0563**	0.0170		
		(2.134)	(0.567)		
Friendly directors × Market return		0.172	−0.714*		
		(1.323)	(−1.894)		
Market return × Non-compliant		0.0318	−0.168		
		(0.764)	(−1.239)		
Market value of equity (Log)	0.108***	0.00227	−0.0443	0.0248***	−0.00455
	(5.092)	(0.0801)	(−0.669)	(3.366)	(−0.713)
Debt	−0.393***	−0.0684	0.398	0.0850*	−0.0145
	(−3.097)	(−0.759)	(0.884)	(1.811)	(−0.472)
Age	0.211*	0.118	0.0400	0.000591	0.000742
	(1.724)	(0.958)	(0.0973)	(0.333)	(0.103)
Market-to-book	0.00316	0.00541**	−0.0367**	0.00350**	0.00162

(*continued on next page*)

Table A7 (*continued*)

Variables	(1)	(2)	(3)	(4)	(5)
	(1.216)	(2.036)	(−2.470)	(2.518)	(1.307)
R&D	−0.304	−0.370	2.849**	−0.128	−0.0792
	(−1.000)	(−1.604)	(2.404)	(−0.800)	(−0.609)
Sales std	−0.104**	0.0118	−0.636	−0.0114	0.110***
	(−2.084)	(0.235)	(−1.466)	(−0.196)	(2.911)
CEO age	0.00886**	0.00378*	0.145***	−0.000530	−0.000915
	(2.451)	(1.888)	(19.61)	(−0.559)	(−1.139)
CEO duality	−0.0758*	−0.0381	0.627***	−0.0125	0.0113
	(−1.938)	(−1.210)	(6.122)	(−0.690)	(1.378)
Board size	0.000301	0.00245	0.226***	0.001000	−9.65e-05
	(0.0401)	(0.428)	(7.252)	(0.232)	(−0.0664)
Statutory independence	0.0654	0.00465	−3.695***	0.0839	0.0178
	(0.505)	(0.0444)	(−7.574)	(1.053)	(0.603)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	8787	8425	9077	1490	14,349
Adj/pseudo R-squared	0.110	0.061	0.167	0.034	0.003

The dependent variable in Column (1) is the natural logarithm of CEO cash compensation; the dependent variable in Column (2) is change in CEO cash compensation; the dependent variable in Column (3) is a binary variable with a value of one if the CEO is new, the dependent variable in Column (4) is the sum of the three-day cumulative abnormal returns for all merger and acquisition announcements in a year, and the dependent variable in Column (5) is the earnings management measure (proxied by the (Kothari et al., 2005) performance matched discretionary accrual measures). Other variables are as defined in Table A1 of the Appendix. *t-statistics* based on robust standard errors clustered at the firm level are reported in parentheses. ***, **, * indicates significance at the 1%, 5% and 10% levels respectively.

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