The Effect of Staggered Boards on Firm Value for Real Estate Investment Trusts

Ye Di

A Thesis in

The John Molson School of Business

Presented in Partial Fulfillment of the Requirements

For the Degree of Master of Science in Administration (Finance) at

Concordia University

Montreal, Quebec, Canada

March, 2018

CONCORDIA UNIVERSITY

School of Graduate Studies

This is to certify that the thesis prepared

By: Ye Di

Entitled: The Effect of Staggered Boards on Firm Value for Real Estate Investment Trusts

and submitted in partial fulfilment of the requirements for the degree of

Master of Science in Administration (Finance Option)

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Signed by the final Examining Committee:

_____ Chair

Kamal Argheyd

_____ Examiner

Saif Ullah

_____ Examiner

Ravi Mateti

_____ Supervisor

Thomas Walker

Approved by _____

Thomas Walker

_____

Date: April 28, 2018

ABSTRACT

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The purpose of this thesis is to examine the effect of staggered boards on firm value for real estate investment trusts (REITs). We argue that REITs are highly regulated firms in an environment where the takeover market is inactive. We investigate whether takeover devices function well and whether corporate governance hypotheses hold for REITs. We hypothesize that the inefficient management hypothesis does not hold for REITs and that staggered boards have no negative impact on firm value. We collect data for all REITs listed on Compustat and merge them with information from CRSP, BoardEx and company fillings from the SEC's EDGAR database over the period 1990 to 2016. We conduct an event study to test whether takeovers discipline inefficient managers in the real estate sector and estimate a logistic regression to examine whether staggered boards resist takeovers after controlling for prior firm performance, firm financials and board related variables. In addition, we estimate an ordinary least squares (OLS) regression to explore whether staggered boards enhance internal monitoring effectiveness and positively affect firm value. The results indicate that the market for corporate control in the real estate sector fails to discipline inefficient managers, however lower prior firm performance increases a firm's probability of becoming a takeover target. The results also reveal that staggered boards have a negative effect on shareholders' wealth regardless of takeover probability.

Acknowledgements

First and foremost, I would like to express my gratitude to my supervisor, Dr. Thomas Walker, for his experienced guidance, support, responsiveness and patience. I cannot imagine completing my thesis without you guiding through the whole process.

I would also like to extend my gratitude to Dr. Kuntara Pukthuanthong for her insightful advice. I am also grateful to my mentor Pedram Fardnia for excellent conversations and brainstorming sessions which truly helped me improve my thesis. Last but not least, I would like thank you Naomi who help with my write-up.

Last but not least, I want to thank my parents and friends who encourage me and support me.

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Introduction

This paper is concerned with the effect of staggered boards on firm performance in real-estate investment trusts (REITs). An agency problem exists between shareholders and management. Corporate governance forces managers to align themselves with shareholders, maximizing shareholders' interests. Bebchuk and Cohen (2005) demonstrate that there is a positive relationship between corporate governance and firm performance. However, mangers may take part in acquisitions that go against shareholders' interests. Shleifer and Vishny (1997) suggest that merger negotiations are investments that expand agency conflicts.

A staggered board is a corporate governance structure and a widely used anti-takeover measure. Under a staggered board structure, directors are typically assembled into three classes with successive annual re-elections occurring for only one class. Therefore, the number of years needed to re-elect all board directors is the same as the number of classes. The fact that it is hard to remove the majority of directors in a short period makes it one of the most effective measures to deter hostile suitors. A staggered board is a common feature of an REIT's corporate governance. Campbell et al. (2011) show that as many as 61% of REITs have a staggered board. Bebchuk, Coates, and Subramanian (2001) contend that firms with a staggered board present a formidable obstacle to a change-in-control bid when that bid is contested by target management. This is partly due to the increased cost of such a bid in the case of firms with a staggered board (Bebchuk and Cohen, 2005).

Several studies argue that staggered boards have a negative effect on shareholders' wealth based on the entrenched management hypothesis (Bebchuk and Cohen, 2005; Cremers and Nair, 2005; Faleye, 2007). This hypothesis holds the view that entrenched managers adopt takeover

strategies to insulate themselves from market discipline, thereby engaging in empire building and obtaining private benefits (Jensen, 1993). However, Rose (2009) argues that a staggered board is less likely to negatively affect firms that face lower takeover probability. She provides empirical evidence that the negative effect of staggered boards disappears for a subset of firms that do not operate in a hostile takeover market.

In the light of this recent evidence, we investigate the relationship between staggered boards and firm performance for REITs. We argue that the negative effect observed in general may not hold for REITs given that they operate in an environment where the takeover market is non-existent. REITs are highly regulated firms due to the following three aspects: (1) Ownership restrictions (5/50 rule): The five biggest owners of an REIT's common stock together may not own more than 50% of the total shares outstanding. (2) Income and Asset Restrictions: At least 75% of income must be derived from real estate-related sources and at least 75% of an REIT's assets must be held in the form of cash, government securities, and real estate-related assets. (3) Mandatory Payout Policy: REITs must pay out 95% of net "taxable" earnings. Given these special regulations, previous authors have suggested that external mechanisms of control are less important in the case of REITs. Allen and Sirmans (1987) were the first to argue that REITs are characterized by a lack of hostile takeovers, with only one reported hostile takeover from Moody's Bank and Finance Manual over the 1977-1983 period. Ghosh and Sirmans (2005) suggest that income and asset restrictions in REITs result in a lack of hostile takeovers and an absence of inter-industry mergers. Furthermore, the dispersed ownership structure makes it hard for large blockholders to gather stakes and pose a serious takeover threat. Campbell et al. (2011) argue that the market for corporate control is virtually nonexistent in the REIT sector; thus external corporate control is diminished and is replaced by internal governance. However, recent studies report contradictory findings.

Eichholtz and Kok (2008) find that the takeover market in REITs is active because there is a positive relationship between the likelihood of being targeted and pre-acquisition underperformance, which is in line with the inefficient management hypothesis. Mulherin and Womack (2015) examine the level of competition in the REIT mergers-and-acquisitions takeover market using a sample of 165 merges occurring during two merger waves. They find that REIT takeovers are as competitive as those in other industries. They also make an important contribution by defining hostile takeovers in a specific way for the REIT industry – namely, as unsolicited deals – and thus conclude that the market for corporate control is more active than previously thought.

The objectives of this paper are threefold. First, we examine whether takeovers discipline the senior managers of inefficiently performing REIT firms as they do in other sectors. To achieve our objective, we test whether targets underperform their counterparts in the period before takeovers. Following Martin and McConnell (1991) and Kennedy and Limmack (1996), we specifically explore whether targets classified as undergoing a "disciplinary" takeover obtain lower returns than targets in a non-disciplinary (control) group. These groups are defined based on CEO changes; that is, if a CEO is not retained for the 2 years after the bid announcement, the takeover is labeled as "disciplinary". In addition, if the pre- and post-bid CEO change is the result of a disciplinary bid, we would expect that disciplinary bids reduce the inefficient allocation of resources and improve both the performance and the managerial efficiency of target firms. Then, we also investigate whether targets subject to disciplinary takeovers will achieve higher abnormal returns than those in the non-disciplinary group around the bid period.

Second, we argue that under the assumption of a non-existent takeover market in REITs, staggered boards are less likely to be adopted to resist hostile takeovers as entrenched managers are already immune to market discipline. Because it is difficult to remove the whole board at the

same time, we argue that the effect of staggered boards on monitoring managers for long-term investments dominates in REITs. Therefore, the presence of a staggered board should lower the probability that a firm becomes a target for takeover and we predict a negative relationship between staggered boards and takeover probability.

Finally, the principal objective of this study is to examine whether the observed negative effect of staggered boards on firm value holds for REITs. Since this negative relationship is the consequence of an intensive market for corporate control, it may not apply to an industry in which the hostile market is absent. The notion here is straightforward: the more intensive the takeover market, the greater the extent to which entrenched managers are exposed to takeover threats. Staggered boards resist market discipline for managers and thus decrease shareholder wealth. Specifically, because REITs operate in a market that is free of hostile takeovers, the negative effect of staggered boards disappears as entrenched managers are free from market discipline and less likely to adopt staggered boards to insulate themselves from hostile acquisitions. From the perspective of the characteristics of staggered boards as we previously discussed, staggered boards allow directors to serve for multi-year terms (Ahn and Shrestha, 2013). Previous literature emphasizes the negative effect of this feature as directors are elected only every three years and undervalue the potential positive effect of staggered boards. Koppes et al. (1999) argue that the presence of a staggered board can be regarded as a vehicle for allowing boards to focus on long-term investment plan. However, less attention has been paid to the potential positive effect of staggered boards on firm value in other sectors as this effect is masked by the negative effect of the anti-takeover stance. Thus, if there is a positive relationship between the presence of staggered boards and firm value, we argue that the negative effect of the staggered boards on firm value can

be offset or even replaced by the potential positive effect for firms that operate in a non-existent hostile market and face lower takeover probability.

To achieve our objectives, we collect all available REIT firms from Compustat and merge with CRSP, and BoardEx. We manually check whether a firm has adopted a staggered board using company filings provided by EDGAR. We obtain 315 unique firms and 3755 firm-year observations over the period 1990-2016. We conduct an event study before and around the bid announcement to assess whether the market for corporate control disciplines inefficiently managing firms. To assess the effect of staggered boards on takeover probability and firm value, we carry out logistic regression and OLS regression models with year and firm fixed effects. In these models, we include firm accounting control variables and selected variables related to a firm's internal corporate governance.

The main findings are as follows. First, we do not obtain significant differences between the disciplinary group and the non-disciplinary group with regard to targets' abnormal returns. Second, there is a negative relationship between the presence of staggered boards and takeover probability. We also find that there is a negative association between prior firm performance and takeover probability. This implies that the market for corporate control disciplines poorly-managed firms, therefore supporting the inefficient management hypothesis. Lastly, staggered boards are negatively associated with firm performance, although the negative effect disappears when independent directors dominate.

The paper is organized as follows. In the next two sections, we review the related literature and develop our hypotheses. In section 4, we describe our sample selection procedure and define the independent variables, dependent variables and control variables. In section 5, we conduct an

event study, logistic regression and OLS regression. In section 6, we present the results. Section 7 concludes.

Literature Review

A series of recent studies have explored the conflicts of interest between shareholders and management. Managers may implement value-destroying projects in order to gain personal value and wealth. Several studies have explored the association between the quality of corporate governance and firm performance (Gompers et al., 2003; Bebchuk and Cohen, 2005; Cremers and Nair, 2005). Gompers et al. (2003) found that firms with stronger shareholder rights have higher firm value. They created a Governance Index (referred to as GIM) using Investor Responsibility Research Center (IRRC) data based on 24 corporate governance factors to proxy for shareholder rights. Managers tend to make decisions that are not value-maximizing for shareholders when they are protected by anti-takeover provisions (Ferreira and Laux, 2007). This is in line with the finding that an active hostile takeover market makes it less likely for managers to undertake negative NPV projects at the expense of shareholders (Jensen and Ruback, 1983; Bebchuk, 2002). However, it is important to appreciate that the GIM index reveals the aggregate effects of ATPs and does not provide information on the effect of any given anti-takeover device on firm value (Bebchuk and Cohen, 2005; Sokolyk, 2011).

As described in the introduction, a staggered board is a corporate governance structure that is widely used as an effective anti-takeover measure. Evidence of the powerful effect of staggered boards with regard to deterring takeovers, along with evidence of a lower probability of acquisition once a bid has been made, has been well documented (Daines and Klausner, 2001; Bebchuk et al., 2002; Bates et al., 2008; Sokolyk, 2011). In other words, in the event of poor managerial

performance, targets with a staggered board are less likely to receive a takeover bid than other targets. Furthermore, studies show that staggered boards are associated with lower firm value, for example, as measured by Tobin's q (Bebchuk and Cohen, 2005). Jensen (1993) holds the view that the protection offered by a staggered board reduces the firm's exposure to hostile market threats, thereby benefitting managers. According to Cremers and Nair (2005), who proposed a three-factor entrenchment index (one of the factors being the presence of a staggered board), entrenched managers are able to insulate themselves from the hostile takeover market, which in turn causes reduced firm valuation. Similarly, Faleye (2007) shows that CEOs of firms with staggered boards face lower forced turnover probability, are less likely to leave involuntarily due to poor performance, and receive compensation that are less sensitive to firm financial performance.

However, several studies give an alternative perspective and show a positive effect of staggered boards on firm performance. Ahn and Shrestha (2013) find that the effects of staggered boards on firm valuation vary depending on the characteristics of the firm. They show that staggered boards benefit firms with higher advising needs and lower monitoring costs. Chemmanur and Jiao (2012) document that staggered boards reduce the propensity of managers to undertake projects that are not in the best interests of shareholders. Consistent with the bonding hypothesis of takeover defenses, several authors note that staggered boards increase firm value by strengthening the firm's commitment to a business investment strategy (Shleifer and Summers, 1988; Johnson et al., 2015). They show that staggered boards are positively associated with Tobin's q for firms which have important business relationships.

Rose (2009) also offers an alternative perspective. She finds that the effect of staggered boards on firm value varies depending on the takeover probability firms face. Using outside ownership concentration as a proxy for takeover probability, she provides empirical evidence to

show that the negative effect of staggered boards on Tobin's q disappears for a subset of firms that operate in a non-existent hostile takeover market.

In this paper, our objective is to analyze how the takeover-resistant character of staggered boards affects firms in the REIT sector. We argue that the previously observed negative relationship between staggered boards and firm valuation relies on an intensive market for corporate control and thus may not apply when the hostile market is absent. In addition to the evidence presented by Rose (2009) on this matter, Campbell et al. (2011) argue that the negative effect of ATPs on firm value is dependent on the intensity of the takeover market. In other words, the entrenched management hypothesis may not be retained for firms operating in an inactive market for corporate control. There is additional evidence that the inefficient management hypothesis may not hold for REITs. For example, the fact that abnormal returns following the announcement of an acquisition are lower (although still positive) for real-estate targets than for targets in other sectors has been well documented (McIntosh et al., 1989; Campbell et al., 1998 and 2011). Friday and Sirmans (1998) account for this finding by pointing to the institutional restrictions of the real-estate sector, which result in inefficient external corporate governance.

Although no previous studies have examined the effect of staggered boards on firm value for REITs, there are several studies that have examined the relationship between the corporate governance of REITs and their performance. It is generally accepted (e.g. see Feng et al., 2005) that good corporate governance is associated with higher financial performance. However, Bianco et al. (2007) find that there is a positive relationship between good corporate governance and firm value during the year 2004, whereas the effect is diminished in 2006, reflecting the ineffectiveness of takeover index when comparing performance across firms in REITs. The recent results make it interest to explore how anti-takeover devices affect firm value. Therefore, we aim to analyze

whether the inefficient management hypothesis holds for the real-estate sector by focusing on (a) the performance of target REITs following disciplinary and non-disciplinary takeovers and (b) the effect of staggered boards on long-term shareholder wealth.

To summarize, to the best of our knowledge, this is the first paper that analyzes the relationship between staggered boards and firm valuation in REITs. Campbell et al. (2011) find that the presence of staggered boards is not associated with negative abnormal returns in REITs, which is contrary to the previous view of the adverse effects of staggered boards. They attribute this finding to abundant takeover threats in REITs, such that managers are immune from market discipline. Following Rose (2009) and Campbell et al. (2011), if the negative effect of staggered boards on firm value relies on an active takeover market, this effect should not be observed for REITs. As we discussed previously, the character of staggered boards have two side effects on firm value; that is, first, the presence of staggered boards may entrench managers, thereby negatively affecting the firm value; second, a staggered board election structure benefits firm by providing board continuity, stability and independence, thereby implementing closer monitoring and positively affecting firm value. The negative effect of staggered boards dominate in other sectors, whereas the negative effect of staggered boards may be neutralized due to the lack of a takeover market in REITs. Thus, we argue that staggered boards may help to monitor long-term investments and may provide benefits to directors who are not aligned with management. In an REIT environment, the presence of a staggered board can be regarded as increasing internal monitoring, thereby increasing firm value. Therefore we expect to observe a positive relationship between staggered boards and firm value.

Hypotheses

Based on the extant literature, we develop the following three hypotheses:

Hypothesis 1: Absence of takeover mechanism in REITs makes the disciplinary mechanism on poorly managed firms ineffective. If there is indeed no significant difference in abnormal returns between the disciplinary group including all targets with a change of CEO and the respective control group including all targets without a change of CEO before takeovers and around takeovers, we can conclude that the market for corporate control is inactive in REITs.

Hypothesis 2: If there is a positive relationship between the presence of staggered boards and firm value in REITs, we can conclude that the observed negative effect of staggered boards can be offset and replaced by a potential positive effect offered by a staggered board for firms that operate in an inactive market.

Hypothesis 3: If there is a negative effect of staggered boards on takeover probability, we can conclude that REITs with staggered boards are less likely to become takeover targets because board classification makes it hard to remove the whole board at one time and gains control of a company through takeovers.

Data

Sample construction

My data is concentrated on the REITs which have the four-digit SIC code 6798. The data sample period is over the period from 1990 to 2016. First, we sort Compustat by four-digit SIC code 6798. This sample covers 586 unique firms and 6321 firm-year observations. The main dependent variable in this paper is firm value which is measured by Tobin's q following several

earlier studies which explore the relationship between staggered boards and firm value (Gompers et al., 2003; Faleye, 2007; Cremers et al., 2017). I only retain firms that are available for data from Compustat and CRSP. I measure Tobin's q using the data related to the market value of common stock, the book value of common stock, the book value of total assets, and deferred taxes. Second, I merge my sample with CRSP database. If the data for the market value of equity is missing from Compustat, I replace it as the number of shares outstanding times the stock price at the end of the year, following Konijn et al. (2011). The data sample reduces to 373 unique firms and 4327 firm-year observations after constructing the dependent variable. Then, I hand collected the key explanatory variable of interest, staggered boards from EDGAR database. There are 13 firms removed from the data sample list because of non-existence on SEC, the lack of company fillings DEF 14A, or lack of information on staggered boards. The data sample reduces to 360 unique firms and 4259 firm-year observations. Then, I collect internal corporate governance information as control variables. For this paper, we focus on the board size, board composition, and unitary leadership from BoardEx available on Wharton Research Data Services. In order to keep consistency of the data sample size through the analysis, I only keep firm-year observations with non-missing value of required firm-specific variables and board information. Moreover, I obtain mergers and acquisition transactions from Securities Data Corporation (SDC) database.

Our final sample consists of 3755 firm-year observations by 315 unique firms and is associated with 75 mergers and acquisitions transactions on SDC over the period from 1990 to 2016.

Variable definitions

Firm value

Several authors use Tobin's q as a measurement of firm value when they investigate the relationship between the corporate governance mechanism and firm value in REITs (Morck et al., 1988; Gompers et al., 2003; Bauer et al., 2010). Consistent with the earlier studies, I use the ratio of the market value of the assets to book value of the assets. Following Kaplan and Zingales (1997), we define the market value of assets as the sum of the book value of the assets plus the market value of equity minus the book value of equity and deferred taxes from Compustat. As an additional measurement of market value of equity for the missing value, we calculate it by multiplying the number of shares outstanding by the price per share at the end of the year from CRSP data.

Control variables

In order to mitigate potential biases due to omitted variables and isolate the effects of staggered boards on firm value, we control for other variables that have influence on firm value documented by literature. We provide variable definitions of all control variables in the Appendix A. First, I control for the differences of firm financials. We define firm size as the natural logarithm of total assets. The growth opportunities are less for larger and mature firms. Konijin et al. (2011) find that there is a negative relationship between firm size and firm value. The bigger the firm is, the less operating efficiency a firm has (Faleye, 2007; Konijin et al., 2011). Leverage can be positively or negatively associated with firm value. On the one hand, Jensen (1986) argues that leverage can bring advantages to firm through its discipline role by debt, therefore increasing external monitoring effectiveness. On the other hand, leverage may affect firms through the riskiness of debt or debt constraint on investment (McConnell and Servaes, 1995). Stock liquidity is calculated by the turnover rate. Maug (1998) and Koniji et al. (2011) show that there is a positive association between share liquidity and firm value. Profitability is commonly used as a proxy for

growth opportunities. Since Tobin's q is not only a measurement for firm value, but also a good indicator for growth opportunities, it is necessary to control for profitability, and leverage (McConnell and Servaes, 1995; Yermack, 1996; Ahn et al., 2012). Following Ahn et al. (2012), we define profitability as operating margin. We also control for dividend yield following Eichholtz and Kok (2008). Low dividend payout ratio might indicate that the firm has less cash available for distribution or firm retain cash for other financial activities instead of distributing to shareholders (Jensen, 1986). That is, firms are in poor financial position and find it difficult to payout dividends or managers of firms with large number of free cash flow are more likely to get involved in activities that are value-destroying, thus we expect that there is a positive relationship between dividend yield and firm value. We also have a set of governance control variables that are identified to greatly affect firm value from the perspective of internal governance monitoring mechanisms (Fama and Jensen, 1983; Jensen, 1993; Shivdasani, 1993; Yermack, 1996; Hermalin and Weisbach, 1998). Thus, we control for board size, CEO duality and board composition. In line with the view that REITs operate in a weak market for corporate control, we have argued thus far that the internal governance mechanism is more important for REITs than for firms in other sectors. Three characteristics of board structure have been shown to alleviate the agency problem between managers and shareholders: smaller board size, the presence of independent directors, and CEO duality. The positive effect of a smaller board size on coordination and cohesiveness was first documented by Lipton and Lorsch (1992) and Jensen (1993). Yermack (1996) provides consistent evidence that board size is negatively associated with Tobin's q. Eisenberg et al. (1998) and Mak and Kusnadi (2004) report a negative relationship between board size and firm value for small firms and firms in Singapore and Malaysia, respectively. However, recent studies show the apparently contradictory result that large board size can be associated with higher firm value as the proportion of independent directors who sit on the board is the key factor that affects firm value.

Finkelstein et al. (2009) argue that outsider directors with diverse backgrounds are in a better position to provide sound advice to management. This leads into the second characteristic that has been shown to reduce agency problems, namely, the presence of independent directors. Boards with a higher proportion of independent directors implement more effective monitoring (Fama and Jensen, 1983; Friday and Sirmans, 1998). Independent directors are those who have no business relationship with the firm except for their directorship. Therefore, independent directors are more likely to monitor managerial decision-making under the assumption that it needs to be in the interests of shareholders' wealth. Thirdly, CEO duality reduces the power of board independence on disciplining and monitoring the CEO (Core et al., 1999). Ghosh and Sirmans (2003) find a negative relationship between CEO duality and board independence in the real-estate sector.

Methodology

Pooled Ordinary Least Squared Regression (Pooled OLS regression)

The relationship between staggered boards and firm value is analyzed using the following base model:

$$\begin{aligned} Firm\ value_{it} = \alpha &+ \beta_1 (Staggered\ board)_{it} + \beta_2 Firm\ Size_{i(t-1)} + \beta_3 Leverage_{i(t-1)} \\ &+ \beta_4 Share\ Liquidity_{i(t-1)} + \beta_5 Profitability_{i(t-1)} \\ &+ \beta_6 Dividend\ Payout_{i(t-1)} + \beta_7 Board\ Size_{it} \\ &+ \beta_8 Board\ Composition_{it} + \beta_9 Unitary\ Leadership_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

We specifically develop different models based on the base model in order to serve the purpose of the study. The dependent variable is firm value which is measured by Tobin's q and independent variable is staggered board. We expand the vector of control variables in the base model. All firm financial control variables are calculated one year prior and label as t-1. Staggered

boards are based on the fiscal year t because the firm is unable to quickly adopt or remove a staggered board in order to resist being acquired of a forthcoming takeover (Sokolyk, 2011). First, we start our study by a pooled ordinary least squared regression (pooled OLS). Second, following Cremers et al. (2017), we differentiate the effect of staggered boards on firm value between cross-sectional association and long-term time series association. Hence, we use different fixed effects estimators in our model.

In model (2), we regress the same pooled OLS with a year fixed effect to remove variations over the time period, providing the cross-sectional association of staggered boards and Tobin's q.

$$Firm\ value_{it} = \alpha + \beta_1 (Staggered\ board)_{i(t-1)} + \beta_2 X_{i(t-1)} + \beta_3 V_{it} + \beta_n Year\ Dummies\ + \varepsilon_{it} \quad (2)$$

Where $X_{i(t-1)}$ is a vector of control variables related to firm financials, and

V_{it} is a vector of board related variables.

In model (3) and (4), we add a firm fixed effect estimator to control for the possible time-invariant characteristics of each firm, thereby reducing the potential bias and providing evidence about the time series association of how staggered boards affect firm value.

$$Firm\ value_{it} = \alpha + \beta_1 (Staggered\ board)_{i(t-1)} + \beta_2 X_{i(t-1)} + \beta_3 V_{it} + \beta_n Firm\ Dummies + \varepsilon_{it} \quad (3)$$

$$Firm\ value_{it} = \alpha + \beta_1 (Staggered\ board)_{i(t-1)} + \beta_2 X_{i(t-1)} + \beta_3 V_{it} + \beta_n Firm\ Dummies + \beta_m Year\ Dummies + \varepsilon_{it} \quad (4)$$

Where $X_{i(t-1)}$ is a vector of control variables related to firm financials, and

V_{it} is a vector of board related variables.

Event Study

In this section, we test the effectiveness of external governance in REITs. Our hypothesis tested is based on the view that takeovers discipline inefficiently performing firms and reallocate resources. We then test whether the targets subject to disciplinary takeovers in REITs show lower abnormal returns in the period before the takeover and receive higher takeover premium around bid announcements. Following Kennedy and Limmack (1996), I divided the sample of takeovers into two groups, with group A including all targets in which CEO is not retain for the two years after bid announcements. Group B includes all targets in which CEO is retain for the same period. Of the 75 takeovers, 37 were included in group A and the others were included in group B. We define group A as disciplinary group and group B as non-disciplinary group. We compare differences in abnormal returns between group A and group B in the period before the takeover around takeovers. Following McIntosh et al. (1989) and Olgun (2005), we adopt the standard market model to measure the abnormal returns before and after bid announcements during the following 6 sub-periods: days (-14, -8), days (-7, -1), days (-1, +1), event day (0), days (0, +1), and days (-7, +7). We perform an event study using Eventus provided by Wharton Research Data Services (WRDS). The models are based on the CRSP value-weighted market index. The estimation window used in this paper is (-255, -46). This study use cumulative abnormal returns (CARs) for measuring abnormal returns. Equation (5) is the market model which uses prior daily returns to estimate the parameters.

$$E(R)_{i,t} = \alpha_i + \beta_i R_{mt} + \varepsilon_{i,t}, t = 1,2, \ldots . . T \quad (5)$$

Where R_{it} is the return on firm i for period t and R_{mt} is the market return for period t.

The estimation window used in this paper is (-255, -46) and the event day is day 0.

Equation (6) is used to estimate the abnormal return $AR_{i,t}$.

$$AR_{i,t} = R_{i,t} - E(R)_{i,t} \quad (6)$$

Equation (7) is used to measure the cumulative effects from event day p to event day q for each takeover i.

$$CAR_{i,p,q} = \sum_{t=p}^{q} AR_{i,t} \quad (7)$$

The statistical significance of differences across sub-groups are tested based on p-value, assuming unequal variances.

Logistic Regression Model

We estimate a logistic model to test whether staggered boards actually deter takeover bids. The dependent variable is a binary variable and is coded as 1 if a firm were acquired during our data period from 1990 to 2016, and 0 otherwise. We pool all firm year observations and thus have 3755 firm year in total, of which 75 are coded as 1 and 3680 are coded as zero. We control prior firm financial performance in our model because recent studies argue that poor firm performance increases the probability that a firm become a target in a takeover bid (Graham et al., 2002). This finding holds for real estate sector as well (Eichholtz and Kok, 2008). We define prior firm performance as total assets in previous years. We control for certain firm characteristics and governance variables based on the existing studied in order to isolate the effects of staggered boards on the probability to receive a bid in takeover activity. We include firm size, probability, leverage, share liquidity, and dividend yield. All accounting control variables are calculated one year prior to the year in which targets were acquired. We also employ a set of control variables related to governance mechanism, including board size, CEO duality and board composition. We expect that large non-executive dominated board combined with non CEO-duality suggest higher corporate

governance mechanism which reduce the probability of becoming a takeover target. The estimated logistic model has the following functional form:

$$BID_{it} = \alpha_{it} + \beta_1(Stggered\ board)_{it} + \beta_2 X_{i(t-1)} + \beta_3 V_{it} + \varepsilon_{it} \quad (8)$$

where:

BID_{it} is a dummy variable and equal to one if firm i was a target in a takeover event in year t, zero otherwise.

α_{it} is a constant

$X_{i(t-1)}$ is a vector of control variables related to firm financials,

V_{it} is a vector of board related variables.

Results

Summary statistics

<Insert **Table 1** here>

The summary statistics for a selection of financial and accounting variables are presented in Table 1 during data period from 1990 to 2016. We only include the firms in the sample that have financial data available in Compustat and CRSP, which results in 3755 firm-year observations in total. The average Tobin's q in our sample is 1.2603 which is slightly lower than the average of Tobin's q during the period from 2004 to 2006 reported in Bianco et al. (2007). Thirty seven percent of the REITs firms have staggered boards in our sample while about 60 % of the U.S. firms have staggered boards for other sectors presented by Bebchuk and Cohen (2005) and Ahn et al. (2012). This evidence may reveal that the anti-takeover devices are less likely to be taken by entrenched

managers in order to resist takeover bids. The total assets of REITs ranges from $9.20 million to $24.86 billion, with an average of a little less than $2.76 billion compared to other sectors. Firm size is measured as the natural logarithm of total assets. The average firm size of REITs is 6.88 which is similar to other sectors. The average leverage ratio is 49.9%. Feng et al. (2005) and Ling and Petrova (2011) find a similar observation and report that the leverage ratio of REITs is 51% on average. In other sectors, Ahn et al. (2012) report the mean average leverage ratio is 29% which is definitely lower than that of REITs. This evidence intuitively gets better insight in the view that the REITs face more capital market monitoring of management investment decisions. The mean and median share liquidity are 1.1224 and 0.8009 respectively. The mean and median profitability for our sample are 0.052 and 0.054, respectively, which is lower than the mean of 0.122 and median of 0.134 reported by Faleye (2007) concentrated on firm sample in other sectors. The mean dividend yield is 6.84 which is consistent with literatures on REITs during recent years (Bianco et al., 2007; Ling and Petrova, 2011). REIT boards consist of an average of eight members, with the smallest board having four members, and the largest consisting of 17 members. The average for unitary leadership is 0.44 which implies the proportion of REITs where the CEO also serves as the chairman of the board of directors. The statistics are considerably lower than that for other sectors (0.68) reported. The number for board composition for our sample shows that REITs have maximum of 92 % of the board directors that are not affiliated with firms or top executives of the firm and have minimal or no business dealings with the company, with the average value is 68.3%. These statistics are higher than reported by Friday and Sirmans (1998) for REITs during the periods from 1980 to 1994. These board related statistics show a favorable enhanced internal monitoring effects concentrated on the board independence for REITs. Ghosh and Sirmans (2003) contribute the increasing proportion of independent directors to the institutional ownership of REITs shares.

< Insert **Table 2** here >

Table 2 presents the Pearson correlation coefficients between financial accounting variables, board relation control variables and firm performance variable. The statistics reveal significant relationships. There is negative relationship between staggered boards and Tobin's q however the correlation coefficient is insignificant. In line with our expectations, there are positive relation between profitability and Tobin's q. Leverage and unitary leadership are negatively associated with Tobin's q, respectively. Consistent with the view presented by Finkelstein and Hambrick (1996), board size can be positively related to Tobin's q conditional on the high proportion of independent directors on boards for REITs. Consistent with previous literatures (Ghosh and Sirmans, 2003), larger firms generate revenue and operating profitability with the different economies of scale in REIT industry. There is a significantly negative relationship between dividend yield and firm value which is consistent with the view presented by Wang et al. (1993). They argue that for REITs, higher dividend ratio is one of the most important tool for shareholders to monitoring management for poor-governed firms in terms of free cash flow retained for future investment.

Target firms abnormal returns

< Insert **Table 3** here >

Target abnormal returns were calculated by the market model defined earlier in methodology part. Table 3 reports the abnormal returns for all targets. Panel A presents the abnormal returns during pre-bid periods and panel B presents the excess returns around bids. There is little evidence that the targets presented negative abnormal returns prior to bid. That is, the inefficient management hypothesis may not hold for REITs because of the lack of evidence of poor performance of targets before takeovers. There are positive returns prior the bid (-7, -1), which may be due to the information leakage before bid announcements in line with the view argued by

Higson and Elliott (1993). Column 2 and column 3 show abnormal returns for two subgroups which are classified by the CEO tenure in 2 years after the bids. If CEOs is not retain for 2 years after bids, the bid is classified in the disciplinary group, also named as group a, otherwise group b. The last column presents the results of the test of difference between mean CARs for two subgroups. The difference of abnormal returns between disciplinary and non-disciplinary groups is -0.06 prior to the bid (-14, -8) but the difference is not significant. Targets in disciplinary group continue to underperform their counterparts around bids although the differences of mean CARs between two subgroups are not significant. These statistics may be interpreted from the perspective of the function of disciplining managers. The market for corporate control in the REITs is failed to discipline managers via takeovers. However, table 3 presents results from the (-1, +1) window and (-7, +7) window indicate that targets exhibit positive abnormal returns of 8.44 (p-value <.0001) and 9.25 (p-value <.0001) respectively. These results are consistent with the inefficient management hypothesis, which provides some interesting results that are not fully in line with our expectations. We argue that the results may be explained by the view that poor performance is the drive of takeovers, therefore the market for corporate control discipline poor-managed firms. In order to confirm our view, we then test whether the prior performance of REITs is negatively associated with takeover likelihood and whether takeover devices function well in the special environment for REITs.

Takeover likelihood and staggered boards

< Insert **Table 4** here >

Table 4 presents results of the effects of staggered boards on firm's takeover probability. We use the logistic model where the dependent variable is a dummy variable to indicate whether the firm becomes a target in a takeover event. Control variables include financial accounting variables

and board control variables. However, the staggered boards have insignificantly negative effects on takeover likelihood. We measure previous firm performance using Tobin's q in prior years. There is significantly negative relationship between prior firm performance and takeover probability. That is, the poor performance is one of the most important motivation for bidders to acquire firms. Consistent with the evidence provided by Eichholtz and Kok (2008), the takeovers act to discipline targets with poor performance, in line with the inefficient management hypothesis.

Univariate test

In order to analyze the effects of staggered boards on firm value, we run a univariate test first. Table 5 reports descriptive statistics for firm financials variables and board characteristics variables with difference mean and difference median in the final two columns.

<Insert **Table 5** here>

Firms with staggered boards have lower Tobin's q than those without staggered boards although the difference is not statistically significant. Firms with staggered boards are on average smaller than those without staggered boards. Firms with staggered boards are also levered more. Profitability and dividend yield are slightly higher for firms with staggered boards than those without staggered boards. This result reveals that firms with staggered boards tend to have higher growth opportunities. Firms with staggered boards are less liquid than firms without staggered boards. In addition to accounting variables, we also examine several governance variables. Firms with staggered boards have smaller board size, less independent directors than those without staggered boards. In addition, for firms with staggered boards, CEO is less likely to serve as the chair of the board, but the difference mean is not statistically significant.

Overall, the univariate test provides the evidence that firms with staggered boards have favorably different traits compared to firms without staggered boards. Thus, it is necessary and important to control for firm financials and corporate governance characteristics to isolate the effects of staggered boards on firm value.

Multivariate test between staggered boards and firm value

Table 5 presents the test result examining the relationship between staggered boards and Tobin's q by using the ordinary least squared regression (OLS regression) specification, following Bebchuk and Cohen (2005) and Faleye (2007). Column (5) control for year fixed effects and column (6) control for year and firm fixed effects.

< Insert **Table 6** here >

Model (1) is the base model in which Tobin's q is regressed on the staggered boards and other control variables including firm size, leverage, share liquidity, profitability and dividend yield. The results provides the evidence that the staggered boards have negative effects on firm value for REITs, which is similar with the evidence presented for other sectors in prior literatures. The coefficient of staggered boards is -0.023 and statistically significant at the 10 % level. The positive relationship between firm size and firm value is contrast with our expectation. The coefficient of dividend yield is in a negative sign, which is reverse to our expectation. This result can be explained by the special regulation environment of REITs. Wang et al. (1993) argue that mandatory payout policy make REITs highly regulated firms. Shareholders monitor management investment decisions by requiring greater dividend only from poorly performing REITs, therefore, higher dividend yield is correlated with severe agency problems in REITs. That is, there is negative relation between dividend yield and firm performance.

We next include corporate governance variables, board size, CEO duality (Unitary leadership) and board composition. In model (2) and (3), we introduce board size and unitary leadership respectively. The board size is positively related with firm value. However, the magnitude and statistical significance of the coefficient of staggered boards on firm value remain same as the model (1). In mode (4), we introduce board composition to the model. The negative effects of staggered boards disappear combined with positive relationship between board composition and firm value. Higher board composition is a good indicator of independent board related to good corporate governance as well. This result implies that when the board is independent, the adverse effects of staggered boards disappear.

Conclusion and Discussion

In this paper, we examine whether the market for corporate control disciplines inefficient management by comparing the abnormal returns to targets between disciplinary group and non-disciplinary group by event study. The results show that in the period before takeovers, the abnormal returns of disciplinary group are not significantly lower than those of non-disciplinary group. In addition, abnormal returns of disciplinary group fail to dominate those of non-disciplinary group around takeovers. Then, we analyze the relationship between the presence staggered boards and takeover probability, we fail to find negative relationship between staggered boards and takeover likelihood, however prior firm performance is negatively related to takeover probability. These results imply although the market for corporate control does not directly discipline managements, it is not virtually non-existent as previously noted because the poor performing firms face higher likelihood of becoming targets, thereby providing empirical evidence for the inefficient management hypothesis. Furthermore, we explore the relationship between the presence of staggered boards and firm by estimate an OLS regression. As we discussed earlier, there are two

side effects of staggered boards and firm value. The evidence that the potential benefit of board classification is masked by its negative effect is emphasized by pointing to the entrenched management hypothesis in other sectors. In this paper, we investigate whether the positive effect of staggered boards dominate due to the REIT environment with special regulations. In REITs, we find that the negative effect of staggered boards on firm performance remained despite of the less active takeover market. In addition, we show that the negative effect of staggered boards disappear when we include board composition into our model. We define the proportion of independent directors who sit on boards as board composition. That is, poorly managed firms tend to adopt staggered boards, thereby exacerbating agency conflicts and altering firms' exposure to market discipline. In contrast, firms with good corporate governance may bring value to shareholders' wealth by adopting staggered boards to provide board independence, stability, and closer monitoring on managers when they plan for future investments. To sum up, the market discipline is effective when the firm underperform the others in REITs although there is little hostile takeover. The negative effect of staggered boards on firm value can be neutralized when the board is independent.

List of Tables

Table 1: Descriptive statistics

This table presents sample descriptive statistics for the main dependent and independent variables. The sample consists of 315 unique firms and 3755 firm-year observations after merging all available REITs information from Compustat, CRSP, the SDC and BoardEx from 1990 to 2016. Staggered board information is collected from the SEC's EDGAR database by identifier CIK or company name. All continuous variables are winsorized at the 1st and the 99th percentile. See Appendix A for variable definitions.

Variable	N.Obs	Mean	Median	Standard Deviation	Minimum	Maximum
Tobin's q	3755	1.2603	1.1819	0.4045	0.3061	5.6885
Staggered board	3755	0.3686	0.0000	0.4825	0.0000	1.0000
Total assets ($ million)	3755	2763.42	1178.86	4277.22	9.199	24857.43
Leverage	3755	0.4993	0.5033	0.2149	0.0000	0.9533
Share liquidity	3755	1.1224	0.8009	1.1102	0.0374	6.5332
Profitability	3755	0.0522	0.0540	0.0341	-0.0759	0.1436
Dividend yield	3755	0.0684	0.0620	0.0512	0.0000	0.3085
Board size	3755	8.1997	8.0000	2.0663	4.0000	17.0000
Unitary leadership	3755	0.4410	0.0000	0.4966	0.0000	1.0000
Board composition	3755	0.6834	0.6666	0.1308	0.2000	0.9231

Table 2: Correlation Matrix

This table presents Pearson's correlations among variables. Statistical significance is based on the p-values and is indicated at the 1%, 5%, and 10% levels by ***, **, and *, respectively.

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	Tobin's q	1.0000	.	.	.	.	.	.	.	.	.
(2)	Staggered board	-0.0197	1.0000	.	.	.	.	.	.	.	.
(3)	Ln(Firm size)	0.1274***	-0.0722***	1.0000	.	.	.	.	.	.	.
(4)	Leverage	-0.0475***	0.0871***	0.3641***	1.0000	.	.	.	.	.	.
(5)	Share liquidity	-0.0123	-0.0518***	0.4464***	0.2017***	1.0000	.	.	.	.	.
(6)	Profitability	0.2821***	0.1303***	-0.0925***	-0.0432***	-0.2268***	1.0000	.	.	.	.
(7)	Dividend yield	-0.2530***	0.0681***	-0.0477***	0.1456***	0.1596***	0.1304***	1.0000	.	.	.
(8)	Board size	0.0977***	-0.0461***	0.1675***	0.0327**	0.0031	0.0415**	-0.0355**	1.0000	.	.
(9)	Unitary leadership	-0.0292*	-0.0115	-0.1976***	-0.0032	-0.0943***	0.0079	0.0235	-0.0508***	1.0000	.
(10)	Board composition	0.2001***	-0.0992***	0.3046***	0.0712***	0.2457***	-0.0886***	-0.1112***	-0.0274*	-0.0804***	1.0000

Table 3: Targets' abnormal return for disciplinary and control group

Target mean abnormal returns for the disciplinary group and the control group. Target abnormal returns are based on a market model Event study in Eventus. We present p-values in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10%, respectively, based on a two-tailed test.

Days Relative to Announcement	CAR (%)	CAR (%)	CAR (%)	CAR DIFF (%)
	All Targets	Disciplinary Group A	Non-Disciplinary Group B	Difference A-B
Panel A: Pre-bid period				
(-14, -8)	-0.17	-0.20	-0.14	-0.06
	(0.7008)	(0.7941)	(0.7612)	(0.9460)
(-7,-1)	1.34***	1.33	1.35***	-0.02
	(0.0062)	(0.1205)	(0.0064)	(0.9851)
Panel B: Bid period				
(-7,+7)	9.25***	8.32***	10.17***	-1.85
	(<.0001)	(<.0001)	(<.0001)	(0.4227)
(0,+1)	8.07***	7.47***	8.67***	-1.20
	(<.0001)	(<.0001)	(<.0001)	(0.5576)
0	6.41***	5.31***	7.54***	-2.23
	(<.0001)	(0.0002)	(<.0001)	(0.2599)
(-1,+1)	8.44***	8.09***	8.80***	-0.71
	(<.0001)	(<.0001)	(<.0001)	(0.7280)

Table 4: Logistic regression model of the effect of staggered boards on takeover likelihood

Logistic regression estimates of the effect of staggered boards on takeover likelihood. The dependent variable equals one if the firm received a bid during the period from 1990 to 2016, and zero otherwise. We control for prior firm performance using Tobin' q. All models control for year fixed effects. We present p-values in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10%, respectively, based on a two-tailed test.

Variables	(1)	(2)
Intercept	-3.111***	-3.446***
	(<.0001)	(0.0001)
Staggered board[t]	-0.101	-0.107
	(0.3991)	(0.3754)
Tobin's q [t-1]	-0.744*	-0.777*
	(0.0695)	(0.0629)
Firm size[t-1]	0.0511	0.032
	(0.5609)	(0.7301)
Leverage[t-1]	0.3457	0.381
	(0.5519)	(0.5159)
Share liquidity[t-1]	-0.4587**	-0.454**
	(0.0216)	(0.0247)
Profitability[t-1]	0.903	0.863
	(0.8104)	(0.8200)
Dividend yield[t-1]	3.450	3.320
	(0.1228)	(0.1328)
Board size[t]		0.039
		(0.4991)
Unitary leadership[t]		-0.066
		(0.7852)
Board composition[t]		0.292
		(0.7613)
# of firm-year observations	3755	3755
Prob. > ChiSq	0.0687	0.1309
Pseudo R-squared	0.02	0.03

Table 5: Univariate tests to compare the characteristics of REITs with and without staggered boards

This table reports the mean and median characteristics of REITs with staggered boards and those without staggered boards. The sample consists of 3755 firm-year observations, of which 1384 observations are in the group with staggered boards and 2371 observations are in the annual board structure group. The last two columns report differences in means and medians, with p-values for a t-test and a Wilcoxon Signed Rank Test for the two subgroups, *, **, and *** represent statistical significance at the 10%, 5% and 1% levels, respectively. P-values are reported in the last two column in brackets.

	Staggered board structure (1)		Annual board structure (0)			
Variables	Mean	Median	Mean	Median	Diff. Mean	Diff. Median
Tobin's q	1.2499	1.1735	1.2664	1.1861	-0.0165 (0.2068)	-0.0126 (0.4128)
Firm size	6.7253	6.7623	6.9757	7.2144	-0.2504*** (<.0001)	-0.4521*** (<.0001)
Leverage	0.5238	0.5182	0.4850	0.4947	0.0388*** (<.0001)	0.0235*** (<.0001)
Share liquidity	1.0472	0.7488	1.1664	0.8385	-0.1192*** (0.0012)	-0.0897*** (0.0011)
Profitability	0.0580	0.0604	0.0488	0.0496	0.0092*** (<.0001)	0.0108*** (<.0001)
Dividend yield	0.0730	0.0691	0.0658	0.0578	0.0072*** (<.0001)	0.0112*** (<.0001)
Board size	8.0751	8.0000	8.2725	8.0000	-0.1974*** (0.0036)	0.0000 (0.1638)
Unitary leadership	0.4335	0.0000	0.4454	0.0000	-0.0119 (0.4801)	0.0000 (0.4803)
Board composition	0.6665	0.6667	0.6933	0.7000	-0.0269*** (<.0001)	-0.0333*** (<.0001)
# of Obs.	1384	1384	2371	2371		

Table 6: Multivariate regression of the effect of staggered boards on firm performance

This table contains results for a series of OLS regressions of the effects of staggered boards on Tobin's q. The dependent variable in each regression is Tobin's q, which is calculated by the market value of equity divided by the book value of total assets. Staggered board equals one if directors are elected for staggered terms, and zero otherwise. Columns (1)-(4) are pooled time-series cross-sectional regressions. Column (5) includes year dummies and column (6) includes year and firm fixed effects. All variables are winsorized at the 1st and 99th percentile. We present p-values in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10%, respectively, based on a two-tailed test.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Staggered board[t]	-0.023*	-0.022*	-0.022*	-0.012	-0.002	-0.173
	(0.0614)	(0.0824)	(0.0861)	(0.3315)	(0.8474)	(0.2953)
Firm size[t-1]	0.032***	0.030***	0.030***	0.020***	0.011**	-0.049***
	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(0.0149)	(<.0001)
Leverage[t-1]	-0.091***	-0.089***	-0.091***	-0.083***	-0.074**	-0.077**
	(0.0027)	(0.0033)	(0.0030)	(0.0055)	(0.0108)	(0.0219)
Share liquidity[t-1]	0.023***	0.024***	0.024***	0.015**	-0.006	0.013**
	(0.0003)	(0.0001)	(0.0001)	(0.0203)	(0.4309)	(0.0364)
Profitability[t-1]	4.137***	4.106***	4.106***	4.116***	4.784***	2.879***
	(<.0001)	(.<0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)
Dividend yield[t-1]	-2.315***	-2.309***	-2.310***	-2.151***	-1.960***	-0.929***
	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)
Board size[t]		0.010***	0.010***	0.013***	0.015***	0.002
		(0.0004)	(0.0004)	(<.0001)	(<.0001)	(0.6075)
Unitary leadership[t]			0.007	0.009	0.010	0.023
			(0.5946)	(0.4417)	(0.3646)	(0.1167)
Board composition[t]				0.525***	0.322***	0.135**
				(<.0001)	(<.0001)	(0.0387)
# of unique firms	315	315	315	315	315	315
# of firm-year observations	3755	3755	3755	3755	3755	3755
Adj. R square	0.190	0.193	0.193	0.217	0.291	0.610
F-stat	147.91***	128.94***	112.83***	116.80***	44.94***	15.37***
Year Fixed Effects:	NO	NO	NO	NO	YES	YES
Firm Fixed Effects:	NO	NO	NO	NO	NO	YES

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Appendix

Appendix A: Variable definitions

This table defines our main dependent and independent variables and provides the data sources used to construct them. All accounting variables are constructed from Compustat and board related variables are constructed from BoardEx. In each case, they refer to the most recent fiscal year end. Variables constructed from CRSP are calculated at the end of the year. Staggered board information is obtained from company filing DEF 14A on the SEC's EDGAR database.

Variable	*Description*	*Source*
Tobin's q	Market value/book value: (bv (total assets) + mv (equity) - bv (equity)-deferred taxes)/bv (total assets).	Compustat; CRSP
Staggered board	Staggered board dummy, equal to 1 when the firm has a classified board structure, and 0 when the firm has an annual board structure.	EDGAR
Ln(size)	The natural logarithm of total assets.	Compustat
Leverage	Total debt/total assets: (long-term debt + debt in current liabilities)/total assets.	Compustat
Share liquidity	Turnover: annual average of daily trading volume/the number of shares outstanding.	CRSP
Profitability	Earnings before interest (EBIT)/Total assets.	Compustat
Dividend yield	Dividends per share/Closing share price.	Compustat
Board size	Total number of directors on the board.	BoardEx
Unitary leadership	Unitary leadership dummy, equal to 1 when the CEO serves as board chairman, and 0 otherwise.	BoardEx
Board composition	Ratio of independent directors to total board size.	BoardEx