Staggered Boards and Private Benefits of Control*

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Abstract: This paper provides evidence that staggered boards are associated with higher private benefits of control. We proxy for private benefits using the value of voting rights (i.e., control premium) estimated from option prices. We find that companies with staggered boards have higher control premiums, and de-staggering their boards decreases the control premiums. Exploiting plausibly exogenous court rulings, we confirm that weakening the effectiveness of staggered boards decreases the control premiums. Moreover, changes in control premiums around the court rulings are negatively related to the corresponding stock market reactions. Overall, our findings are consistent with the entrenchment view on staggered boards.

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Staggered (or classified) boards of directors are arguably one of the most prevalent and effective anti-takeover measures observed in the current corporate governance structure among US public firms (Bebchuk, Coates, and Subramanian (2002), Cremers, Litov, and Sepe (2014)). Yet, evidence remains mixed as to whether they harm or help shareholder value. In a firm with a staggered board, only a fraction (usually one-third) of the board members are up for election at an annual shareholder meeting. Thus staggered boards provide a potent anti-takeover mechanism by impeding potential contenders from obtaining the majority of board seats. Critics argue that insulating firms from the market for corporate control leads to entrenchment of the incumbent managers and reduces firm value (see, e.g., Bebchuk and Cohen (2005), Faleye (2007), Masulis, Wang, and Xie (2007), Bebchuk (2013), Cohen and Wang (2013)). In contrast, proponents argue that staggered boards are a part of value-maximizing governance choices and increase firm value through board independence, management stability and resistance to hostile or opportunistic takeovers (see, e.g., Koppes, Gankse, and Haag (1999), Bainbridge (2006), Larcker, Ormazabal, and Taylor (2011), Cremers, Litov, and Sepe (2014)).

Identifying the effect of staggered boards on firm value is not straightforward, because the price of common shares incorporates the value of shareholder voting rights. Consequently, any change in the stock price can be due to a change in either the value of expected future cash flows or the value of voting rights (or both). Moreover, the value of voting rights reflects the private benefits of control extracted from the firm (Zingales (1995)). Therefore, drawing inferences about entrenchment in a firm by looking only at stock prices is complicated.[1] Prior studies largely overlook this issue and tend to infer about entrenchment indirectly by examining firm performance or governance outcomes, in part due to the lack of a broadly applicable measure of the value of voting rights.

[1] As an example, consider a firm with entrenched management extracting large private benefits. In this case, entrenchment is likely to have opposing effects on the components of the stock price – positive for the value of voting rights and negative for the value of cash flows – making the net effect unclear.

This paper contributes to the ongoing debate on staggered boards by examining their impact on private benefits of control (and ultimately on entrenchment). The novelty of the paper is focusing directly on private benefits of control by taking advantage of a new market-based measure of the value of voting rights. The intuition behind the link between the value of voting rights and the private benefits of control is that "...a controlling shareholder competing for control is willing to pay to minority vote owners a positive price for their votes at the time of a control contest…" (Nenova (2003, p.326)). In case of a control contest, however, a contestant would not be willing to pay for control more than her expected value of control. Hence, the value of voting rights reflected in the stock price is usually interpreted as a lower bound for private benefits of control (see, e.g., Barclay and Holderness (1989), Nenova (2003), Zingales (1994, 1995), and Kalay, Karakaş, and Pant (2014)).

We estimate the value of voting rights from option prices (hereafter, *control premium*), following the method introduced in Kalay, Karakaş, and Pant (2014).[2] In essence, the method captures the *control premium* by synthesizing a non-voting share of common stock using the put-call parity relation, and comparing the price of the synthetic non-voting share to that of the underlying stock. The key insight for the method is that option prices reflect the cash flows of the underlying stocks, but not the control rights. An important advantage of using this new method is that it enables us to estimate the *control premium* for a large sample of firms, unlike other methods of estimating the value of control such as using dual-class stocks or trades of controlling blocks.[3] Further, and more importantly, we believe our method is more suitable for studying corporate governance issues, particularly staggered boards. This is because firms with dual-class stocks or controlling blocks are subject to selection biases, and the control in such firms is already

[2] Our *control premium* reflects the value of control to the "marginal investor." Private benefits (and hence the value) of control can be driven by the interests of incumbent management and/or (potential) outside investors. See Zingales (1995) for a more detailed discussion.

[3] The method to estimate the value of control using dual-class stocks takes the price difference between multiple classes of stocks with differential voting rights. The method using the sales of controlling blocks takes the difference between the share price in a block trade and the prevailing stock price right after the block sale. Both methods suffer from issues of small sample size and selection biases. See Kalay, Karakaş, and Pant (2014) for a more detailed discussion.

concentrated. Thus having staggered boards is arguably less relevant in insulating these firms further from market for corporate control (Gompers, Ishii, and Metrick (2010), Bebchuk, Cohen, and Wang (2011)).

As noted in Zingales (1995), control premium is determined by two factors: the expected control/private benefits, and the probability of a control contest. The presence of staggered boards may increase the extent to which the incumbents can extract benefits at the expense of the shareholders. If staggered boards lead to entrenchment, one would expect to observe: i) higher private benefits of control (and hence higher *control premium*) for firms with staggered boards as compared to firms with non-staggered boards, and ii) firms de-staggering (staggering) their boards to experience a decrease (an increase) in their *control premiums*. Note that as an anti-takeover provision, staggered boards may also decrease the chances of a control contest. This would, however, bias against us finding a positive relation between staggered boards and the control premium.[4]

Analyzing US public companies over the period 1996 to 2011, we find that *control premium* is higher for firms with staggered boards. This result holds after controlling for firm characteristics such as total assets, leverage, book-to-market ratio, firm age, insider ownership, R&D expenditures, ROA, and CAPEX. The result also holds after controlling for time invariant unobserved firm characteristics through the inclusion of firm fixed-effects, which suggests that de-staggering of the boards is associated with a decrease in *control premium*. Focusing solely on the sample of 163 (33) firms de-staggering (staggering) their boards and in the years immediately before and after these changes in board structure, we find that firms de-staggering (staggering) their boards experience a 54% (11%) decrease (increase) in their *control premium*. These results

[4] Studying supermajority and staggered board amendments, Pound (1987) concludes that these amendments decrease the likelihood of takeover bids, and increase the bargaining power of management to the detriment of shareholder value. Analyzing other anti-takeover measures (poison pills, control share laws and business combination laws), Comment and Schwert (1995) find that these measures increase the bargaining power of management versus bidders, but do not deter takeovers. More recent empirical studies find evidence that staggered boards have a negative impact on the probability of takeovers (Bates, Becher, and Lemmon (2008), Karpoff, Schonlau, and Wehrly (2015)).

are stronger for the de-staggering cases, compared to the staggering cases. This may be due to two possible reasons. First, we observe de-staggering of boards more often than staggering, and therefore our sample is larger for the former cases. This also suggests that our results from fixed-effect specifications are mainly driven by the de-staggering cases. Second, the de-staggering cases are arguably less subject to reverse causality concerns. This is because staggering the board might indicate an already entrenched management, whereas de-staggering tends to happen due to the pressure of dissenting/activist shareholders (see, e.g., Brav et al. (2008), Ganor (2008), and Bebchuk, Hirst, and Rhee (2013)).

In general, board structure is a dynamic and endogenous choice made by the firm given its particular circumstances (see, e.g., Denis and Sarin (1999), and Adams, Hermalin, and Weisbach (2010)). Hence, reverse causality and/or unobservable factors can potentially contaminate inferences regarding the impact of staggered board on firm governance/performance. To mitigate the potential endogeneity concerns in the relation between staggered boards and the value of control rights, we use a quasi-natural experiment. This experiment is based on two court rulings in 2010 with opposite decisions on the effectiveness of staggered boards (Bebchuk, Cohen, and Wang (2011)). These rulings were made during and in response to the takeover battle between Airgas Inc. (target) and Air Products and Chemicals, Inc. (acquirer). The Chancery Court's ruling on October 8th, 2010 (event #1) allowed for a shareholder-adopted bylaw to move up the date of the next calendar year's annual meeting to any date within that calendar year. This would allow the acquirer company to accelerate obtaining the majority of the board seats in the target company. The Chancery Court's ruling weakened (but did not eliminate) the effectiveness of staggered boards. On November 23rd, 2010 (event #2), Supreme Court reversed the ruling of Chancery Court on the basis that changing the date of annual meetings would implicitly and unfairly shorten the tenure of some board members. Hence, the second ruling essentially nullified the effects of the first ruling observed on October 8th. This decision, however, was somewhat

anticipated by the market, and hence the reversal of the effects could have spread before the actual announcement of the decision. Bebchuk, Cohen, and Wang (2011) document a positive (negative) stock market reaction to the first (second) ruling for firms with staggered boards. They find their results to be stronger for smaller firms for which the chance of a control contest is arguably higher.

The findings of Bebchuk, Cohen, and Wang (2011) are consistent with the view that staggered boards are harmful to shareholder value – the stock market reacts positively to an exogenous event that reduces the effectiveness of staggered boards. However, as discussed before, to pin down the entrenchment story one should ideally be able to analyze the control premium directly. We do so by applying the methodology of Kalay, Karakaş, and Pant (2014). Following the event that reduces the effectiveness of staggered boards, we expect that: i) the *control premium* for firms with staggered boards would decrease, and ii) the changes in the *control premium* around the court rulings would be negatively correlated with the corresponding stock market reactions.

Using the above-mentioned quasi-natural events, we find that, as predicted, firms with staggered boards experience a decrease (increase) in their *control premium* after event #1 (event #2). Note that this effect is likely to be causal due to the exogenous court decision affecting all firms with staggered boards. We find this effect to be stronger for smaller firms, consistent with the hypothesis that the impact of the rulings would likely be more pronounced for firms that are more likely to be targeted for a takeover. The changes for event #1 are statistically stronger compared to those for event #2. This is not surprising given that event #1 was much more unanticipated. It is also consistent with Bebchuk, Cohen, and Wang (2011) who find that the positive market reaction to event #1 is statistically stronger than the negative market reaction to event #2.

Finally, we test whether the market reaction to the court rulings is indeed associated with the *control premium*. Consistent with our predictions, we find the changes in *control premium* around event #1 to be significantly and negatively associated with the cumulative abnormal returns (CARs) around event #1. This further suggests that the value of control rights is a determining factor for the positive market reaction to the de-facto weakening of the effectiveness of staggered boards due to the court ruling. Our finding of a negative relation between the stock returns and the changes in *control premium* around event #1 is noteworthy. This is because, *ceteris paribus*, if the *control premium* of a stock increases (decreases), the stock returns would increase (decrease) as well – this would bias against us finding negative correlation between the stock returns and changes in *control premium*. The relation between event CARs and the change in *control premium* around event #2 is not significant. Again, this is not surprising given that the Supreme Court's overruling was somewhat more anticipated.

Overall, our findings are consistent with the view that staggered boards are associated with managerial entrenchment. To our knowledge, our paper is the first to document the direct effect of staggered boards on private benefits of control on a broad sample of firms. Our paper contributes to the literature on corporate governance and corporate control, by applying a novel method that allows us to estimate the value of control rights in the stock price. This approach offers an improvement on the existing literature that generally infers about entrenchment only indirectly by looking at the stock prices or governance outcomes. Indeed, the existing empirical research on staggered boards typically does not distinguish the value of control rights from the stock price, which may potentially be a source for the mixed results regarding the impact of staggered boards on shareholder value.

The paper proceeds as follows. Section 1 discusses the methodology, summarizes the hypotheses we test, and describes the data and sample construction. Section 2 presents panel regressions relating the private benefits of control to staggered boards. In Section 3, we describe

the quasi-natural experiment we employ and present the likely causal impact of staggered boards on the private benefits of control. Section 4 presents the results relating the abnormal market reaction to the change in private benefits of control. Section 5 concludes.

1. Methodology, Testable Hypotheses and Data

1.1. Methodology

The price of common shares includes the value of voting rights. We construct our measure of the value of voting rights, *control premium*, following the method in Kalay, Karakaş, and Pant (2014). The main insight for the method is that option prices reflect the cash flows of the underlying stocks, but not the control rights. The measure captures the value of control rights by subtracting the price of a synthetic non-voting stock, $\hat{S}$, from that of the underlying stock, S, and is normalized by the price of the underlying stock for ease of comparison over time and across companies (Equation 2). $\hat{S}$ is calculated using options put-call parity for an option pair with same maturity T and strike price X, and is adjusted for the early exercise premiums of American options, $EEPs$, and for dividends paid before the options mature, $DIVs$ (Equation 1):

$$\hat{S} = C - P + PV(X) + adjustments\ for\ EEPs\ and\ DIVs, \quad (1)$$

$$Control\ Premium = (S - \hat{S})\ /\ S, \quad (2)$$

where C and P are the prices of the American call and put options, respectively; X is their common strike; T is their time to maturity; and $PV(X)$ is the present value of investing in a risk-free bond with face value X that matures at time T (see Kalay, Karakaş, and Pant (2014) for more details).

There have been two common methods to estimate the value of voting rights in the literature – using dual-class stocks and trades of controlling blocks.[5] The method to estimate the value of control using dual-class stocks takes the price difference between multiple classes of stocks with differential voting rights. The method using the sales of controlling blocks takes the difference between the share price in a block trade and the prevailing stock price right after the block sale. An important advantage of our method over the other methods is that we can estimate the market value of voting rights for a large number of firms at any point in time. Further, and more importantly, we believe our method is more suitable for studying corporate governance issues, particularly staggered boards. This is because firms with dual-class stocks or controlling blocks are subject to selection biases and the control in such firms is already concentrated.[6] Thus having staggered boards is arguably less relevant in insulating these firms further from market for corporate control (Gompers, Ishii, and Metrick (2010), Bebchuk, Cohen, and Wang (2011)).[7]

1.2. Testable Hypotheses

We want to analyze the relation between staggered boards and private benefits of control. We proxy for private benefits using the *control premium*. The *control premium* is linked to the private benefits because a control contestant would be willing to pay a positive price for votes, up to her expected value of control (Nenova (2003, p.326)). In fact, the *control premium* is considered as a lower bound for private benefits of control (see, e.g., Barclay and Holderness (1989), Nenova (2003), Zingales (1994, 1995), and Kalay, Karakaş, and Pant (2014)).

If staggered boards lead to entrenchment of the incumbent management, one would

[5] See Adams and Ferreira (2008) and Burkart and Lee (2008) for surveys of empirical and theoretical work on various mechanisms for separating voting rights from cash flow rights in corporations.
[6] See Kalay, Karakaş, and Pant (2014) for a more detailed discussion.
[7] We check firms with dual-class stocks and/or controlling blocks in our sample, and do not find a significant relation between staggered boards and the *control premium* in such firms (untabulated).

expect to observe higher private benefits of control (and hence higher *control premium*) for firms with staggered boards as compared to firms with non-staggered boards. Moreover, if staggered boards do indeed increase entrenchment, one would expect to observe a decrease (an increase) in *control premium* in firms de-staggering (staggering) their boards. Furthermore, if staggered boards are harmful to shareholder value, the stock market would react positively to an exogenous event that reduces the effectiveness of staggered boards. Finally, following such an event, the *control premium* for firms with staggered boards would decrease; hence the stock price reaction would be negatively correlated with the changes in the *control premium*.[8]

As noted in Zingales (1995), in addition to the expected private benefits, the probability of a control contest also affects the *control premium*. As an anti-takeover provision, the staggered boards may decrease the chances of a control contest (see, e.g., Pound (1987), Bates, Becher, and Lemmon (2008), and Karpoff, Schonlau, and Wehrly (2015)). This would, however, bias against us finding a positive relation between staggered boards and the *control premium,* as discussed in our hypotheses above.

1.3. Data

We use OptionMetrics database available at the WRDS to calculate the *control premium* on a daily basis. OptionMetrics is the standard dataset used for studies on option and provides data on US equity options starting from 1996. In our calculations of the *control premium*, following Kalay, Karakaş, and Pant (2014), we use the most liquid option pair for every firm in

[8] Note that, *ceteris paribus*, if *control premium* of a stock increases (decreases) the stock returns would increase (decrease) as well. Therefore, this would bias against us finding a negative correlation between the stock returns and changes in *control premium* following the event that changes the effectiveness of staggered boards.

each day.[9]

To identify firms with staggered boards, we use RiskMetrics' governance dataset available at the WRDS. It is worth noting that RiskMetrics changed its data collection methodology in 2007. Information on staggered boards is collected in two/three year intervals before 2007, whereas it is available for every year after 2007. We use Compustat for financial and accounting information, CRSP for stock price information, RiskMetrics' directors dataset for annual meeting date and directors' ownership information, and Execucomp for top executives' ownership information. We also use Eventus in performing our quasi-natural experiment analysis.

In order to extend our sample for the quasi-natural experiment analysis, we also obtain information about board structure and meeting date by examining SEC filings (in particular the form DEF-14A). Using the searching facility available in SEC's Edgar, we examine all the DEF-14A filings in 2010 for any mention of staggered boards.[10] For firms that we identify to have staggered board structure, we also collect the date of their annual meetings.

Finally, following the literature on governance and staggered boards (see, e.g., Gompers et al. (2003) and Bebchuk, Cohen, and Wang (2011)), we apply a number of filters to our sample. First, we exclude all firms with dual-class stocks and real estate investment trusts (REITs) because they operate under unique corporate governance arrangements.[11] Second, we exclude regulated industries (financials and utilities) from our sample, since stringent regulations imposed on these firms could create different corporate governance dynamics compared to non-regulated firms. Third, we exclude firms in which insider equity ownership exceeds 50%, since for these firms the possibility of a control contest is irrelevant regardless of whether their boards are

[9] We define the most liquid option pair for each firm at each day as the one with the highest volume (minimum volume of call and put), closest at the money and shortest maturity. We use only the options with positive volume.
[10] The list of all keywords used to identify firms with staggered boards can be found in the Appendix. We took the non-repeating union of the firms for which we have hits for keywords. The search function of SEC's Edgar covers only the most recent four years.
[11] REITs are defined as any firms with 4-digit SIC code of 6798.

staggered or not. Lastly, since RiskMetrics data is not collected for every year,[12] we include only those years for which we have governance data in our panel data analysis.[13] Intersection of all data sources we use and performing all the aforementioned filtering leave us with 8,994 firm-year observations. Table 1 summarizes the distribution of firms with staggered and non-staggered boards, and the number of incidents of staggering and de-staggering firms.

[~Insert Table 1 here~]

Table 2 presents the variable descriptions and summary statistics for our full sample (Panel A) and subsamples of firms with staggered and non-staggered boards (Panel B and C, respectively). As evident from the total assets (median of $7.6 billion), firms in our sample are large in size. Firms across two categories are fairly similar in terms of their leverage ratio, book to market, return on assets, capital expenditure, cash holdings and insider ownership. However, firms with staggered boards are, on average, smaller in size and they are about 1.5 years younger compared to the firm without staggered boards in our sample. Notably, the unconditional mean of the *average control premium* for firms with staggered boards is higher than the ones for firms without staggered boards (0.077% vs. 0.065%, respectively).[14] We further analyze the relation between the *control premium* and staggered boards in the remaining sections of the paper.

[~Insert Table 2 here~]

[12] Governance data are available in years 1995, 1998, 2000, 2002, 2004, 2006, 2007, 2008, 2009, 2010, and 2011. We use extrapolate the 1995 data to 1996 since the options dataset start at 1996. The results are robust to the exclusion of year 1996.

[13] Our results are qualitatively the same if we fill the years between data points.

[14] Note that the *control premium* is measured over the maturity of the option pairs used to estimate the value of control rights. *Control premium* for options with maturity T can be annualized using the following formula: $1–(1–\textit{control premium})^{365/T}$ (Kalay, Karakaş, and Pant (2014)). Given the average maturity of options in our sample is 43.5 days, the unconditional mean of the annualized *average control premium* for firms with staggered boards and for firms without staggered boards would be about 0.644% and 0.544%, respectively.

2. Relation of Control Premium to Staggered Boards

In order to test the hypotheses developed in the previous section, we first analyze the association between *control premium* and board structure in a panel data framework. Our main regression design is as follows:

$$Control\ premium_{it} = \alpha + \beta * Staggered\ Board\ Dummy_{it} + \gamma * \Omega_{it} + \varepsilon_{it}, \quad (3)$$

where $Control\ premium_{it}$ is the value of control for firm i in year t, measured by the median of all daily observations of the *control premium* within year t.[15] $Staggered\ Board\ Dummy_{it}$ is an indicator variable equal to one if firm i has a staggered board in year t, and zero otherwise. Ω is the matrix of control variables. In our baseline regressions, we control for firm size (logged), leverage ratio, book to market ratio, firm age (logged) and insider ownership. In the extended regressions, we further control for the return on assets, the ratio of capital expenses to total assets, and the ratio of R&D expenditures to sales. Our main coefficient of interest is β.

Table 3 reports the results from the OLS estimations of Equation 3. Consistent with the entrenchment view on staggered boards, we find that there is a positive and significant association between *control premium* and staggered boards (Regression 1). The coefficient of interest does not change much after controlling for firm characteristics such as total assets (logged), leverage, book-to-market, firm age (logged), and insider ownership (Regression 2). The effect does not change once we also control for firms' ROA, CAPEX, and R&D (Regression 3).

[~Insert Table 3 here~]

In certain industries, due to the inherent nature of the industry such as investment opportunities, managers might have more discretion over the resources of the firms and enjoy

[15] Using average of all daily observations of the *control premium* within a year yields similar results.

more control in the firm. This can lead to higher extraction of private benefit. At the same time, it might be more common for these firms to have staggered boards. In order to control for this alternative explanation, we introduce industry and year fixed effects to Equation 3 (Regressions 4 to 6). We find that after controlling for any time trend and time-invariant industry characteristics, there is still a positive and statistically significant association between staggered boards and *control premium*.

There has been a trend in de-staggering the boards of large US companies in recent years. Once we focus our attention to within firm variations, using firm fixed effect model, we still find that staggered boards are associated with higher *control premium*. In fact, once we explore the within firm variations, our coefficient of interest becomes larger in magnitude and statistically more significant (compare specifications 7, 8, 9 to 1, 2, 3, respectively (or to 4, 5, 6, respectively)). Since there are many more de-staggering incidents than staggering ones in our sample (163 vs. 33, Table 1), we expect that our results in the fixed effect analysis to be mainly driven by de-staggering firms. Note also that reverse causality concerns would be less pronounced for the de-staggering firms, in comparison to staggering firms: staggering the board might indicate an already entrenched management, whereas de-staggering tends to be initiated by dissenting/activist shareholders (see, e.g., Brav et al. (2008), Ganor (2008), and Bebchuk, Hirst, and Rhee (2013)).

We further investigate within firm variations by focusing only on the years immediately before and after de-staggering or staggering happens. Table 4 presents our t-test results for the change in *control premium* after these de-staggering and staggering events. In this table, we calculate the *control premium* for each firm by taking the median of all daily observations within a year. Consistent with the results in Table 3, we find that de-staggering firms experience a decrease, and staggering firms experience an increase in their *control premium*. These changes correspond to 54% decrease and 11% increase in the *control premium*, respectively. This relation

is, however, only statistically significant for the de-staggering sample, which is larger and less prone to endogeneity concerns as discussed above.

[~Insert Table 4 about here~]

3. Quasi-Natural Experiment: Causal Impact of Staggered Boards on Control Premium

So far, we have established a robust association between the *control premium* and staggered boards. However, there may exist endogeneity concerns regarding the relation between the board structure and the value of control, such as reverse causality and/or omitted variables.

In order to address the potential endogeneity concerns, we use a quasi-natural experiment about two court rulings in 2010 with opposite decisions on the effectiveness of staggered boards (Bebchuk, Cohen, and Wang (2011)). These rulings were made during the takeover battle between Airgas Inc. (target) and Air Products and Chemicals, Inc. (acquirer). Air Products and Chemicals, Inc. had already taken one-third of the board seats of Airgas Inc. by the Airgas' annual meeting on September 2010. The Chancery Court's ruling on October 8th, 2010 (event #1) allowed for a shareholder-adopted bylaw to move up the date of the next calendar year's annual meeting to any date within the calendar year. In the case of Airgas Inc., Air Products and Chemicals, Inc. was trying to move the next annual meeting's month from September to January. This way, Air Products and Chemical, Inc. would be able to win the majority of the board seats by replacing two-thirds of the directors in about four months, rather than waiting for another year.[16] Chancery Court's ruling clearly weakened (but did not eliminate) the effectiveness of staggered boards. The weakening effect would be expected to be higher for those firms that tend

[16] A key point to note is that a firm can have only one annual meeting in a particular calendar year.

to have their annual meetings later in the calendar year, and for smaller firms for which the chances of a control contest is likely higher. On November 23rd, 2010 (event #2), Supreme Court reversed the ruling of Chancery Court on the basis that changing the date of annual meetings would implicitly and unfairly shorten the tenure of some board members. This would reverse all the effects observed on October 8th. This decision, however, was somewhat anticipated by the market, and hence the reversing could have spread before the actual announcement of the decision. Bebchuk, Cohen, and Wang (2011) document a positive (negative) stock market reaction to event #1 (#2) for firms with staggered boards, particularly the ones for which the annual meeting takes place later in the calendar year, and for smaller firms.

We use these two quasi-natural events to test the impact of staggered boards on the *control premium*. In particular, we analyze the change in *control premium* around the events. Table 5 summarizes our results. The dependent variable is the *change in control premium*, calculated for three windows: [-3,+3], [-5,+5], and [-7,+7] in trading days (day 0 corresponds to the event day). For each firm, we take the difference of the median daily observations of the *control premium* in the periods before and after the event.[17] The main variable of interest is the *Staggered Board Dummy*. Panel A of Table 5 shows that *control premium* decreases after event #1 for firms with staggered boards. This corroborates our findings in the previous section. Note that event #1 reduces the effectiveness of staggered boards. Consequently, the *control premium* for firms with staggered boards goes down after weakening the effectiveness of staggered boards. The effect is larger and statistically stronger for firms that are smaller in size, which is measured with log of total assets (Columns 4 to 6). These results are consistent with the hypothesis that the impact of the rulings would likely to be more pronounced for firms that are more likely to be

[17] In calculating the change in *control premium*, we consider day 0 as part of the period after the event. Our results are not sensitive to this empirical choice.

targeted for a takeover.[18]

Panel B of Table 5 shows the results for the second event. We find that *control premium* increases after event #2 for firms with staggered boards. This effect is statistically significant only after we control for firm size and the interaction term between the *control premium* and firm size. Consistent with our findings for event #1, we find the effect to be more pronounced for smaller firms (Columns 4 to 6). As discussed before, because the market expected this overruling to happen, we do not expect the impact of the second event to be as strong as the first one. Our results are consistent with this expectation.

[~Insert Table 5 about here~]

4. Relation of CARs to Changes in Control Premium

Finally, we analyze the relation between the cumulative abnormal returns (CARs) around the court ruling events and the corresponding changes in the *control premium*. As discussed before, stock market reaction to event #1 (#2) for firms with staggered boards is positive (negative) (Bebchuk, Cohen, and Wang (2011)).[19] Following these results, we test whether the positive (negative) stock market reactions are indeed associated with a decrease (an increase) in the *control premium*. Table 6 summarizes our results. The dependent variable is the CAR measured with either market-adjusted model (MAR) or market model (MM) using Eventus. The market index is CRSP value-weighted and the estimation period for MM is [-255,-46] in trading days. The CARs are calculated over the window of [+1,+2] in trading days, consistent with

[18] We would also expect the results to be stronger for firms that have their annual meeting later in the year. In untabulated results, although we do find the effect to be larger for firms with annual meetings occurring later in the year, these results are not significant at the conventional levels. This is likely because, in our sample, there is not much variation in the meeting months across firms, but a concentration in May.

[19] In untabulated results, we confirm that stock market reacts positively (negatively) to event #1 (#2) in our sample.

Bebchuk, Cohen, and Wang (2011). The independent variable is the *change in control premium*, as calculated in Table 5. We run the regressions for different windows (in trading days) over which we calculate the *change in control premium*. We find that changes in the *control premium* around event #1 are significantly and negatively associated with the abnormal returns around the same event (Table 6, Panel A). This further suggests that the managerial entrenchment is a determining factor for the positive market reaction to the de-facto weakening of the effectiveness of staggered boards. The changes in *control premium* around event #2 are positively associated with the corresponding abnormal returns, but these effects are not statistically significant (Table 6, Panel B).

[~Insert Table 6 about here~]

As discussed before, *ceteris paribus*, an increase (decrease) in *control premium* would increase (decrease) stock returns. This would, however, bias against us finding a negative correlation between the stock returns and the changes in *control premium* following the event that changes the effectiveness of staggered boards.

5. Conclusion

In this paper, we add a new perspective to the ongoing debate about whether staggered boards lead to entrenchment. We take advantage of a novel method that allows us to estimate the value of control rights (*control premium*) and to focus directly on private benefits of control for a broad sample of firms. This approach offers an improvement over the existing literature that generally infers about entrenchment only indirectly by looking at the stock prices or governance outcomes.

We provide evidence that staggered boards are associated with higher private benefits of control. We proxy for private benefits using the *control premium* estimated from option prices. We find that firms with staggered boards have higher *control premiums*. We also document that companies de-staggering their boards experience a decrease in their *control premiums*. Using two plausibly exogenous court rulings that impact the effectiveness of staggered boards as a quasi-natural experiment, we find that weakening the effectiveness of staggered boards decreases the *control premiums* in such firms. This confirms that our findings are not driven by the endogenous relation between staggered boards and the value of control rights. Finally, we find evidence that changes in the *control premiums* around the court rulings are negatively associated with the corresponding market reactions.

Taken together, our results suggest that, consistent with the entrenchment view, staggered boards are perceived by the market on average as a value-reducing rather than value-maximizing corporate governance choice.

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Table 1. Staggered and Non-staggered Boards Over Years in the Sample

This table summarizes the distribution of firms with staggered and non-staggered boards, and the number of incidents of staggering and de-staggering firms in our sample. The sample consists of all non-financial, non-utility, non-REIT firms in the intersection of annual Compustat, RiskMetrics, CRSP and Execucomp in the period of 1996-2011. Since RiskMetrics does not have governance data for every year before 2006, we include only those years for which we have data in RiskMetrics. We exclude firms with dual-class stocks and firms with insider ownership more than 50%.

Year	Non-staggered Board	Staggered Board	% of Staggered Board	Staggering	De-staggering
1996	175	290	62%	-	-
1998	307	401	57%	2	11
2000	262	351	57%	9	7
2002	307	475	61%	8	4
2004	346	521	60%	1	9
2006	383	507	57%	0	28
2007	387	497	56%	6	16
2008	422	503	54%	1	21
2009	454	495	52%	2	15
2010	474	488	51%	3	17
2011	489	460	48%	1	35

Table 2. Descriptive Statistics

This table presents the summary statistics of the control premium and firm characteristics for the sample used in our analyses. The sample contains 8,994 firm-year observations from 1996-2011. Panel A reports the figures for the full sample. Panel B and C report the figures for the staggered and non-staggered board subsamples, respectively. *Total* Assets is in million US dollars. *Leverage* is defined as the sum of the long-term and short-term debt divided by total assets. *Book to Market* is book value of equity divided by market value of equity. *Firm Age* is defined as the number of quarters since the firms has appeared in Compustat for the first time. *Insider Ownership* is the percentage of shares outstanding owned by firm's top officers. *R&D* is the research and development expenses, standardized by sales. *ROA* is defined as operating income divided by total assets. *CAPEX* is the capital expenditure divided by total assets. Control Premium is the daily price difference between the stock and the synthetic stock constructed using options, normalized by the stock price. *Average Control Premium* is the mean of all daily observations of the control premium in a year for a firm. *Median Control Premium* is the median of all daily observations of the control premium in a year for a firm.

Panel A. Full Sample

	Obs.	Mean	Median	St.Dev.
Total Assets ($ million)	8,994	7597.234	1828.599	28635.990
Leverage	8,955	0.209	0.197	0.176
Book-to-Market	8,994	0.496	0.420	0.455
Firm Age (in quarters)	8,994	94.353	76.000	62.346
Insider Ownership	8,994	0.028	0.007	0.058
R&D	8,992	0.071	0.007	0.473
ROA	8,993	0.046	0.058	0.124
CAPEX	8,953	0.055	0.038	0.056
Average Control Premium (in %)	8,994	0.071	0.049	0.331
Median Control Premium (in %)	8,994	0.066	0.048	0.308

Table 2. Descriptive Statistics (continued)

Panel B. Staggered Board Sample

	Obs.	Mean	Median	St.Dev.
Total Assets ($ million)	4,988	4724.633	1723.251	8858.401
Leverage	4,977	0.214	0.204	0.175
Book-to-Market	4,988	0.503	0.428	0.502
Firm Age (in quarters)	4,988	91.773	73.000	61.888
Insider Ownership	4,988	0.029	0.008	0.057
R&D	4,987	0.054	0.006	0.189
ROA	4,987	0.045	0.056	0.119
CAPEX	4,962	0.056	0.038	0.055
Average Control Premium (in %)	4,988	0.077	0.053	0.349
Median Control Premium (in %)	4,988	0.071	0.051	0.326

Panel C. Non-staggered Board Sample

	Obs.	Mean	Median	St.Dev.
Total Assets ($ million)	4,006	11174.000	2022.146	41479.180
Leverage	3,978	0.204	0.185	0.178
Book-to-Market	4,006	0.488	0.407	0.389
Firm Age (in quarters)	4,006	97.566	79.500	62.771
Insider Ownership	4,006	0.026	0.006	0.059
R&D	4,005	0.092	0.007	0.677
ROA	4,006	0.047	0.061	0.130
CAPEX	3,991	0.055	0.037	0.057
Average Control Premium (in %)	4,006	0.065	0.044	0.307
Median Control Premium (in %)	4,006	0.060	0.044	0.285

Table 3. Panel Regressions of Control Premium and Staggered Boards

This table presents the results of panel regressions. The dependent variable is *Control Premium*, which is calculated by taking the median of all daily observations of the control premium (as defined in Table 2) in a year for a firm. The main independent variable of interest is *Staggered Board Dummy*, which takes value one if the firm has staggered board and zero otherwise. The remaining independent variables are the firm characteristics defined and summarized in Table 2. *Other Controls* include R&D, ROA, and CAPEX. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent variable: Control premium (in %)	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Staggered Board Dummy	0.014**	0.012*	0.012*	0.014*	0.013*	0.013*	0.076**	0.060*	0.060*
	1.96	1.64	1.63	1.84	1.66	1.63	2.40	1.80	1.78
Total Assets (log)		-0.010***	-0.009***		-0.010***	-0.009**		-0.019	-0.015
		-2.75	-2.50		-2.47	-2.09		-1.19	-0.86
Leverage		0.015	-0.005		-0.026	-0.051		0.069	0.032
		0.45	-0.13		-0.67	-1.06		1.28	0.49
Book-to-Market		-0.064	-0.073		-0.076	-0.085		-0.095	-0.105
		-1.01	-1.09		-1.05	-1.13		-0.95	-1.03
Firm Age (log)		-0.004	-0.003		-0.001	-0.001		-0.035*	-0.040**
		-0.63	-0.53		-0.10	-0.24		-1.71	-1.96
Insider Ownership		0.077	0.051		-0.007	-0.024		0.045	-0.006
		1.29	0.88		-0.11	-0.38		0.33	-0.04
Constant	0.059***	0.176***	0.178***	-0.020	0.111**	0.128**	0.025	0.362***	0.376***
	11.28	4.60	4.41	-1.30	2.01	2.10	1.40	4.69	4.68
Other Controls	-	-	Yes	-	-	Yes	-	-	Yes
Industry Fixed Effect	-	-	-	Yes	Yes	Yes	-	-	-
Year Fixed Effect	-	-	-	Yes	Yes	Yes	-	-	-
Firm Fixed Effect	-	-	-	-	-	-	Yes	Yes	Yes
R-Squared	0.001	0.013	0.015	0.066	0.079	0.082	0.350	0.363	0.368
Obs.	8,529	8,489	8,451	8,529	8,489	8,451	8,529	8,489	8,451

Table 4. Change in Control Premium during De-staggering and Staggering

This table presents the change in *Control Premium* for the years immediately before and after the de-staggering and staggering of the boards. *Control Premium* is calculated by taking the median of all daily observations of the control premium (as defined in Table 2) in a year for a firm. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Obs.	Control Premium the Year Before (in %) (b)	Control Premium the Year After (in %) (a)	Control Premium the Change (c=a-b)	t-stat	% Change in Control Premium (d=a/b-1)
De-staggering	163	0.088	0.041	-0.047*	-1.73	-54%
Staggering	33	0.105	0.116	0.012	0.29	11%

Table 5. Regressions of Changes in Control Premium and Staggered Boards around Court Events

This table presents the regression results for changes in *Control Premium* around court ruling events. The dependent variable is the *Change in Control Premium,* which is calculated for three windows [-3,+3], [-5,+5], and [-7,+7] in trading days (day 0 corresponds to the event day). For each firm, we take the difference of the median daily observations of the control premium (as defined in Table 2) in the periods before and after the event. The independent variables are *Staggered Board Dummy*, which takes value one if the firm has staggered board and zero otherwise; *Total Assets* (logged), which is in million US dollars and proxies for firm size; and the interaction of these two variables. We run the regressions for different windows (in trading days) over which we calculate the change in *Control Premium*. Panel A reports the results for event #1 (October 8th, 2010), in which the Chancery Court ruling decreased the effectiveness of staggered boards. Panel B reports the results for event #2 (November 23rd, 2010), in which the Supreme Court overruled the decision for event #1. See the Section 3 for more detailed discussion of the events. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Event #1: October 8th, 2010

Dependent variable: Change in Control premium (in %)	**Window 1 [-3,+3]**	**Window 2 [-5,+5]**	**Window 3 [-7,+7]**	**Window 1 [-3,+3]**	**Window 2 [-5,+5]**	**Window 3 [-7,+7]**
Staggered Board Dummy	-0.079***	-0.068**	-0.073***	-0.516***	-0.450***	-0.437***
	-2.63	-2.37	-2.50	-2.96	-2.73	-2.65
Total Asset (log)				-0.017	-0.013	-0.019
				-1.36	-1.05	-1.49
Staggered B. Dummy x Total Asset (log)				0.054***	0.047**	0.045**
				2.55	2.37	2.24
Constant	-0.017	-0.011	0.025	0.131	0.098	0.18*
	-0.84	-0.54	1.27	1.18	0.93	1.70
R-Squared	0.010	0.008	0.008	0.020	0.016	0.014
Obs.	665	734	797	665	734	797
Sample	Full	Full	Full	Full	Full	Full

Table 5. Regressions of Changes in Control Premium and Staggered Boards around Court Events (continued)

Panel B. Event #2: November 23rd, 2010

Dependent variable: Change in Control premium (in %)	**Window 1 [-3,+3]**	**Window 2 [-5,+5]**	**Window 3 [-7,+7]**	**Window 1 [-3,+3]**	**Window 2 [-5,+5]**	**Window 3 [-7,+7]**
Staggered Board Dummy	0.018	0.015	0.010	0.232	0.317***	0.234*
	0.65	0.72	0.42	1.44	2.64	1.72
Total Asset (log)				-0.015	0.003	-0.011
				-1.32	0.37	-1.09
Staggered B. Dummy x Total Asset (log)				-0.028	-0.038***	-0.029*
				-1.43	-2.60	-1.76
Constant	-0.009	-0.006	0.042***	0.120	-0.034	0.134
	-0.51	-0.46	2.63	1.21	-0.45	1.56
R-Squared	0.001	0.001	0.000	0.014	0.013	0.013
Obs.	694	756	788	694	756	788
Sample	Full	Full	Full	Full	Full	Full

Table 6. Regressions of CARs and Changes in Control Premium around Court Events

This table presents the regression results for the relation between *Cumulative Abnormal Returns (CARs)* around the court ruling events and the corresponding changes in control premium. The dependent variable is the *CAR* measured with either market-adjusted model (MAR) or market model (MM) using Eventus. The CARs are calculated over the window of [+1,+2] in trading days (see Section 4 for more details). The independent variable is the *Change in (Δ) Control Premium* around court ruling events, as defined in Table 5. We run the regressions for different windows (in trading days) over which we calculate the *change in control premium*. Panel A reports the results for event #1 (October 8th, 2010), in which the Chancery Court ruling decreased the effectiveness of staggered boards. Panel B reports the results for event #2 (November 23rd, 2010), in which the Supreme Court overruled the decision for event #1. See the Section 3 for more detailed discussion of the events. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Event #1: October 8th, 2010

Dependent variable: Event CAR	**MAR**	**MM**	**MAR**	**MM**	**MAR**	**MM**
Δ Control Premium [-3,+3]	-0.518*	-0.479				
	-1.67	-1.62				
Δ Control Premium [-5,+5]			-0.602**	-0.547*		
			-2.00	-1.80		
Δ Control Premium [-7,+7]					-0.909**	-0.887**
					-2.17	-2.15
Constant	0.002	-0.000	0.002	-0.000	0.002*	0.000
	1.17	-0.18	1.26	-0.12	1.80	0.35
R-Squared	0.007	0.006	0.010	0.008	0.013	0.012
Obs.	307	307	344	344	379	379
Sample	Staggered	Staggered	Staggered	Staggered	Staggered	Staggered

Table 6. Regressions of CARs and Changes in Control Premium around Court Events (continued)

Panel B. Event #2: November 23rd, 2010

Dependent variable: Event CAR	**MAR**	**MM**	**MAR**	**MM**	**MAR**	**MM**
Δ Control Premium [-3,+3]	0.359	0.344*				
	1.45	1.64				
Δ Control Premium [-5,+5]			0.230	0.229		
			0.69	0.75		
Δ Control Premium [-7,+7]					0.171	0.151
					0.63	0.58
Constant	0.007***	0.004***	0.007***	0.004***	0.007***	0.004***
	7.03	4.39	7.36	4.66	7.42	4.78
R-Squared	0.008	0.008	0.001	0.001	0.001	0.001
Obs.	312	345	363	344	362	362
Sample	Staggered	Staggered	Staggered	Staggered	Staggered	Staggered

Appendix.

This appendix presents the keywords used in identifying firms with staggered boards and the corresponding hits. We use SEC's Edgar search facility to search within all DEF 14A forms in year 2010.

Keywords	Hit
Class I director	604
Class II director	474
Class III director	468
Class IV director	0
Class V director	1
Class I directors	1642
Class II directors	1042
Class III directors	1009
Class IV directors	4
Class V directors	0
Class 1 director	23
Class 2 director	27
Class 3 director	17
Class 4 director	0
Class 5 director	0
Class 1 directors	61
Class 2 directors	70
Class 3 directors	53
Class 4 directors	4
Class 5 directors	3
staggered two-year	8
staggered three-year	425
staggered terms	353
staggered term	51
staggered classes	23
terms staggered	33