THREE ESSAYS ON THE COMPENSATION, STRUCTURE, AND DECISION MAKING OF THE BOARD OF DIRECTORS

by

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ABSTRACT

My first essay examines compensation of newly formed boards of directors following tax-free corporate spin-offs. The empirical results show newly formed spin-off boards are paid significantly more than peer boards in the same industry with similar firm size. Higher compensation is observed for spin-off firms where the CEOs are not formerly employed by the parent firms but not for spin-off firms with parent related CEOs, indicating that new directors demand higher compensation for the work involved in setting up the new governing system for the spun-off firms especially when there is a brand new CEO managing the spinoff firm. Differences in the structure of director compensation are consistent with better incentive alignment for the newly formed spinoff boards who have the rare opportunity to design their compensation from scratch. The paper also finds evidence that limited CEO's influence on the composition of the spinoff board leads to weaker cronyism between the board and the CEO of spinoff firms.

My second essay explores the role CEO gender plays in shaping the board of directors. The literature provides strong evidence that male CEOs are more overconfident than female CEOs. I contend that a male CEO, who may overestimate his ability and/or underestimate the monitoring role of the board, will prefer to exert as much control over the board as possible and thus prefer a weaker board. I find consistent results that new male CEOs are more likely to increase board size, decrease board independence, reduce board gender diversification, have worse director attendance and have lower overall board monitoring. In contrast, new female CEOs have more gender diversified boards and are associated with an increase in overall board monitoring intensity. I also find supporting evidence in terms of CEO compensation, where new male CEOs gain more control and are compensated more in both total compensation and equity compensation post transition, consistent with what we expect from a weaker board.

My third essay examines CEO's influence on the board of directors in spinoff firms. CEO's influence on the board of directors has been the main concern for shareholders who entrust the firm board with the task of monitoring the firm CEOs. Current literature shows that the more powerful the CEO, the better he is able to extract rents via his compensation at the expense of shareholders. In this study, I utilize a sample of spinoff firms that need to form a brand new board of directors from scratch to shed more lights on the CEO influence question. Particularly, I hypothesize and find that since spinoff CEOs appointed from the parent firm have more influence over the selection of spinoff directors, they enjoy higher compensation with lower pay-performance sensitivity (PPS) and have lower turnover-performance sensitivity than CEOs at similar non-spinoff firms. In contrast, spinoff CEOs hired from outside the pre-spinoff business have similar compensation, PPS and turnover-performance sensitivity to their peers. The results provide supporting evidence for the CEO influence hypothesis and show that limiting CEO's involvement in the selection of directors might help mitigate subsequent CEO rent seeking behavior.

For my daughter Vian, for whom I try and try harder every day.

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ESSAY 1
COMPENSATION AND DECISION MAKING OF NEWLY-FORMED BOARD OF DIRECTORS: EVIDENCE FROM CORPORATE SPIN-OFFS

1. Introduction

The board of directors is trusted with an important task of overseeing company managers and approving firm decisions that are best aligned with shareholders' interests (Fama and Jensen 1983). The alignment between directors' interests and shareholders' interests has become a great focus for the finance literature especially after management mishaps at Enron and Worldcom. The literature often argues that there are two main incentive sources that motivate as well as discipline corporate directors; these are the labor market for directors (Gilson 1990, Kaplan and Reishus 1990, Coles and Hoi 2003, Fich and Shivdasani 2007) and director compensation incentives (Yermack 2004). Of these two incentives sources, the director compensation channel bears a very interesting setting that deserves more exploration; that is the board of directors decides their own compensation. Most studies have overlooked this crucial setting and focus on the link between director compensation and firm decision making (Linn and Park 2005, Deutsch, Keil and Laamanen 2007, Sharma 2011, Bhagat and Bolton 2013). Although studies such as Linn and Martin (1998) and Fich and Shivdasani (2005) have shown some evidence that the market reacts positively to the adoption of equity incentive compensation for directors, little is known as to how the board of directors determines their compensation. In this paper, I utilize a rather unique setting of corporate spinoffs to shed light on this question.

In a spinoff transaction, a new independent business entity is separated from a parent company. The new spun-off unit needs to build a board of directors from scratch (Denis, Denis and Walker 2015), thus this provides a unique situation that allows for examination of a newly

formed board. We can argue that setting up a new board of directors for a spun-off business is different from the same task done for an IPO company. Both spun-off business and IPO firm have been in operation for some time (spun off business is required to be in operation for a minimum of five years[1] while the average IPO firm age from incorporation to IPO is eight years for the period of 1980 to 2015 according to Jay Ritter's IPO data[2]). Both businesses often have their own management team in place and are required to disclose past performance and management compensation. However, shareholder clientele are known before the spinoff distribution since spinoff business shareholders are also parent firm shareholders. In contrast, shareholder clientele of IPO firms are unknown until after the IPO process. In addition, the board of directors is formed for spinoff firm from scratch by the parent firm's management and board of directors while as Bakers and Gompers (2003) and Roosenboom (2005) documented, the board of directors of an IPO firm is formed before the IPO and is greatly under the influence from ownership controlling parties, such as the firm founders, institutional owners and venture capitalists.

Spinoffs also differ from simply examining a peer firm with a similar business and size. Peer businesses would rarely have the opportunity and/or the need to build a brand new board of directors from scratch. And as Denis et al. (2015) argue the stickiness of board structures at peer firm is too high to justify the benefits of replacing all directors.

Leveraging this unique setting, Seward and Walsh (1996) find that for a spun-off business, CEO choice, CEO compensation and the board of directors are set up for efficiency purposes. Particularly, the authors find that it is more efficient for the spinoff CEO to be an insider coming from the previously combined business and to receive compensation package that includes stock

[1] Internal Revenue Code section 355
[2] Jay Ritter, IPOs 2015 Age retrieved from *https://site.warrington.ufl.edu/ritter/ipo-data/*

options and is contingent on firm performance. Moreover, the new board of directors as well as the compensation committee mainly consists of outside directors.

Consistently, recent studies find that the newly formed board has significantly different structure from that spinoff firms and adopts more antitakeover provisions than their peer firms. Particularly, Denis et al. (2015) find the newly formed spinoff boards are smaller, more independent, include more outsiders with relevant industry expertise than their industry and size-matched peers. However, these differences are most remarkable when the spinoff unit CEO was not the CEO or director of the parent firm. These findings support the hypothesis that CEO ability assessment plays a crucial role in the formation of spinoff boards since the boards of directors will need to exert more effort to evaluate an outsider hired CEO's ability. In addition, Du and He (2015) show that spun-off firms are endowed with a higher number of antitakeover provisions (ATPs) than their parents. A subsample of spun-off firms that are not managed by the parent management experienced greater increases in ATPs, indicating that the adoption of ATPs is motivated by efficiency rather than management entrenchment. They also find a strong positive relation between ATP indexes and stock returns for spinoff firms.

My paper extends the examination of the newly formed spinoff board to the determination of director compensation and answer the question whether higher efforts exerted by spinoff directors commission them to higher compensation in comparison to directors at industry and size-matched firms. Moreover, if Denis et al. (2015)'s argument that CEO ability assessment helps explain the composition of spinoff board then it is also expected that the boards of spinoff firms with outside hired CEOs are compensated more than peer firms but not the boards of spinoff firms with CEOs formerly employed by the parents. Using a sample of spinoffs taken place from 1996 to 2013, I find evidence that spinoff board of directors are paid more relative to industry and size-

matched firms. Furthermore, sample partition shows that only spinoff directors at firms with outside hired CEOs earn more than their respective peers but not directors at spinoff firms with parent related CEOs. Moreover, the formation of spinoff board of directors lends an opportunity for the new design of director compensation contract. I find evidence that spinoff directors' pay structures contain higher proportion of equity pay which includes stock and stock options awards.

The formation of the new spinoff board of directors also allows for the tests of the subsequent relationship between director compensation and CEO compensation. More specifically, limited CEO's influence on the composition of spinoff board of directors leads to weaker cronyism between directors and CEOs in spinoff units led by outside hired CEOs relative to their peers, while spinoff directors of parent CEOs show similar collusion towards the CEOs compared to matched firms. These results contribute to the larger literature examining CEO's influence on the board of directors (Hermalin and Weisbach 1998, Coles, Daniel and Naveen 2014).

My paper contributes to the current literature investigating the determinants of director compensation by utilizing a unique sample of spinoff firms that design director compensation for the first time. I provide evidence that director efforts, especially those that are made to evaluate the CEO's ability play an important roles in explaining director compensation. Furthermore, mutual back scratching or cronyism between CEO and the board of directors represented by the positive relationship between CEO and director compensation can be weakened by limiting the CEO's influence on the composition of the board of directors.

2. Motivation

2.1. CEOs of Spinoff Firms

Management of spinoff firms is often determined from three main sources. The new CEO could be the former head of the spinoff division, he could also be the parent CEO or an executive with parent firm, and lastly he could be hired from outside the firm to run the newly independent business. Studies by Seward and Walsh (1996) and Wruck and Wruck (2002) document that more than 50 percent of spinoff CEOs in their sample are former divisional managers, about 20 percent are parent firm executives and the rest are hired from outside. Denis et al. (2015) also report that outside hired CEOs make up only about 15% of spinoff CEOs for their spinoff sample between 1994 and 2010.

The source of the spinoff CEOs plays an important role in the formation of the new corporate governance system for the spinoff unit. Denis et al. (2015) report that the board of directors of spinoff firms are structured with fewer directors, more outside directors and more outside industry experts when the spinoff CEOs are not related to parent firms. The authors argue that when the spinoff CEOs are hired from outside, the board of director needs to be structured for better assessment of the CEO's ability. Du and He (2015) document that spinoff firms managed by outside hired management experiences greater increase in anti-takeover provisions (ATPs) relative to parent-managed spinoff units and content that since parent managements are more entrenched than outside hired management, they adopt fewer ATPs.

It is important to note that the parent board of directors as well as parent management are involved in the selection of spinoff board of directors (King and Condit 2001, Denis, Denis and Walker 2014). [3] Furthermore, shareholders of spinoff units who are also shareholders of parent

[3] First proxy statements filed by spinoff firms also profile directors who are nominated by parent board.

firms do not cast their votes directly on who will be directors of the spinoff firms before or immediate when spinoff unit is publicly traded. Therefore, if the CEO of spinoff is from the parent firm, his or her influence on the spinoff board might be greater than the case of an outside hired spinoff CEO. Results reported by Denis et al. (2015) with regards to the number of directors and number of independent directors in spinoff firms relative to matched firms can be interpreted as consistent with the CEO's influence hypothesis. Particularly, parent related spinoff CEOs' boards are structured similar to matched firms while outside hired spinoff CEOs' boards are smaller and more independent. Smaller and more independent boards are believed to monitor the CEO more strictly (Jensen 1993, Raheja 2005, Weisbach 1988, Hermalin and Weisbach 1998).

2.2. The Spinoff Board of Directors

Previous literature often investigates corporate governance in parent firms rather than in the spinoff units.[4] One exception is Seward and Walsh (1996) who investigate the internal governance system of the spinoff unit and find that CEO appointment, CEO compensation and board independence are ex ante efficient for spinoff units using positive market reaction as an efficiency measurement. More specifically the authors documented that spinoff board of directors is comprised of minority inside directors and market reaction is negatively associated with the proportion of inside directors on spinoff boards.

More recently, Denis et al. (2014) examine the composition of the spinoff board of directors and document that there is little overlap between the spinoff board and the parent firm's board. They also report director appointment is strongly related to whether the director's expertise is unique to the firm's industry. Moreover, the authors find that ties between parent CEOs and directors significantly impact the probability of the directors being appointed to the spinoff board.

[4] See Chemmanur and Yan (2004), Chemmanur, Jordan, Liu and Wu (2010), Jain, Kini and Shenoy (2011), Feng, Nandy and Tian (2015)

Their findings highlight the influence of parent CEOs and board of directors on the composition of the newly formed spinoff board.

Examining the structure of spinoff board of directors, Denis et al. (2015) find that newly formed spinoff boards have fewer directors, are more independent, and include more outside directors with relevant industry expertise than do boards of industry and size-matched peers. The authors argue that smaller boards with more industry expert outside directors are better at learning and assessing the CEO's ability while peer firm boards suffer from inefficiency due to stickiness in board structures. In order to test the learning and CEO assessment hypothesis, the paper also shows that the differences in board structures are largest for the subsample of firms that have an outside CEO who was not related to the parent firms relative to the other subsamples of firms with parent related CEOs.

Du and He (2015), although did not examine spinoff board but motivated by the newly formed governance system of spinoff firms, investigate the difference between spinoff and parent's adoption of anti-takeover provision (ATPs). The paper shows that spun-off firms are endowed with a higher number of ATPs than their parents. The authors claim that since spinoff firm ATPs are designed by the parent firm's management without shareholders' approval and capital raised, the adoption of ATPs is under much less influence from current or potential shareholders than in an IPO or other events. Therefore, from the ATPs designer's perspective, the adoption of ATPs must be for efficiency purposes rather than entrenchment given the firm characteristics and governance needs. Consistently, the paper shows that when partitioning the sample into parent managed or non-parent managed firms, the group of non-parent managed firms adopt more ATPs than the parent firms and the parent-managed firms.

The current literature thus provide evidence that a spinoff transaction provides an opportunity for firms to form a new governing system that is more efficient compared to that of more matured peer firms. Extending the work by Seward and Walsh (1996), Denis et al. (2014), Denis et al. (2015) and Du and He (2015), my paper examines director compensation of the spinoff boards.

2.3. Director Compensation and Main Hypotheses

Previous literature suggests that there are two main incentive sources that motivate and discipline firm directors' behavior. The first channel is the labor market for directors which disciplines directors' behavior via the number of directorships and reputation (Gilson 1990, Kaplan and Reishus 1990, Coles and Hoi 2003, Fich and Shivadasani 2007). The second channel is firm direct compensation incentives which try to align directors' interest with shareholders' interest via director compensation (Yermack 2004, Fich and Shivadasani 2006), much like what was proposed for the design of executive compensation. However, a crucial difference between executive and director compensation is that unlike executive compensation which is set up by shareholder's representatives (i.e. board of directors), director compensation is designed by the board of directors themselves. Dalton and Daily (2011) argue that the way director compensation is determined is prone to various conflicts of interests since directors are also the ones that set performance targets for stock options, have a say in stock buyback decisions, serve on multiple boards, may benefit from insider trading and may be on board for free riding benefits rather than exerting due diligence.

Therefore, the question of how the board of directors sets up their compensation is crucial to understand director incentives. In practice, director compensation usually contains an annual cash retainer (similar to annual salary), stock and stock options rewards component awarded annually based on approved director stock and options reward plans by the firm shareholders and

meeting fees for each meeting the directors attend. The firms also cover expenses incurred by directors when attending board or committee meetings. Many firms now rely on board compensation of a group of peer firms to justify compensation of its own directors, which resembles the practices used by the board to determine executive compensation.

The current literature investigating the determinants of director compensation establishes an association between director compensation and firm characteristics and firm performances. For example, study by Cordeiro, Veliyath and Eramus (2002) shows that director compensation is dependent on firm performance, director efforts, firm external monitoring, CEO compensation, firm size and insider ownership. However, their analysis only examines the cross section of 200 large U.S. firms in 1996 where they argue that directors exert more efforts in larger and more diversified firms. A better examination of the relationship between director efforts and compensation can be found in Linck, Netter and Yang (2009). The authors show that director work load plays an important role in the determination of director compensation using more comprehensive datasets that contains information on more than ten thousand unique firms. More specifically, the authors find that due to increases in director work load and demand for independent directors after the passage of the Sarbanes-Oxley act (SOX) in 2002, director pay significantly inflates post SOX, especially in equity pay and for smaller firms.

Due to the unique setting of a spinoff transaction, directors of the newly formed spinoff boards might need to exert more efforts in monitoring, advising as well as evaluating the spinoff business and its management. If spinoff directors do not exert higher efforts than directors of similar firms, we could expect no significant difference between director compensation of spinoff firms and that of industry and size matched firms. On the other hand, since new directors of spinoff firms have an increased work load due to the requirements to learn about the spinoff business,

management and governance needs, we could expect that spinoff board demands higher compensation relative to their peers. Furthermore, by controlling for the source of the spinoff CEO (parent versus outside hire) the comparison of board compensation between spinoff and peer firms provides evidence of whether assessing the CEO's ability and performance (Denis et al. 2015) is an important task of the newly formed board that commissions higher director compensation. If CEO ability assessment is more complicated for an outside hired spinoff CEO, then we would expect directors of outside hired CEO firms but not parent related CEO firms to be paid more than their peers to compensate for their extended efforts.

Therefore, the director effort hypotheses predict that:

H1: Spinoff director compensation is higher than that of industry and size-matched firms.

H1': Spinoff director compensation is higher than that of industry and size-matched firms but only for outside hired spinoff CEOs.

Moreover, the formation of the spinoff board could lend an opportunity to a better design of director compensation contracts. Since spinoff board has the chance to design their compensation from scratch, this might be an ideal opportunity to better align director interests with those of the known shareholders of spinoff firms. In comparison, matched firm boards whose costs of significantly altering pay practices might outweigh the benefits of redesigning director compensation may have lower director incentive alignment.

Since equity compensation helps better align director incentives with shareholders' interests, the incentive alignment hypothesis predicts that:

H2: Spinoff directors are compensated with more equity compensation relative to directors of industry and size-matched firms.

Last but not least, the CEO's influence can be clearly distinguished in spinoff setting where a spinoff CEO who was previously employed by the parent firm might have greater influence on the composition of spinoff board of directors. We can examine the relationship between CEO compensation and director compensation to confirm the CEO influence hypothesis. Brick, Palmon and Wald (2006) document a positive relationship between CEO compensation and excess director compensation, which negatively affects subsequent firm performance. This positive relationship between CEO and excess director compensation is considered evidence of ineffective monitoring or cronyism. Placing this relationship in the spinoff setting, we can answer the question whether a newly formed spinoff board shows lower cronyism than its peer board. We would expect the collusion of board and CEO to be much lower in the case of a brand new board with an outside CEO. Evidence of lower cronyism for firms with outside hired CEOs is also consistent with the efficiency motivation in setting up the new board of directors in spinoff firms where directors show lower collusion towards the CEO of the firms.

Hence, the CEO's influence hypothesis conjectures that:

H3: Directors of spinoff firms with outside hired CEOs show lower cronyism toward the CEO relative to directors of industry and size-matched peers.

3. Empirical Analysis

3.1. Sample Selection and Descriptive Statistics

The sample starts from all spinoff transactions in the Security Data Corporation (SDC) Merger and Acquisitions Database from 1996 to 2013. Following Denis et al. (2015), I limit the sample to tax-free spinoffs and require that spinoff units are publicly traded after the spinoff effective date. I obtain financial data from Compustat, stock returns from CRSP, board structures from ISS (RiskMetrics) and director and CEO compensation from Execucomp. Director

compensation data was reported at the firm level before 2005 and at the director level from 2005 forward. As a result, I collect compensation data for the board as a whole and refer to it as "board compensation", while "director compensation" refers to the average compensation each independent director of the board receives annually. Any missing director compensation data is supplemented by hand collected data from firm proxy statements for the spinoff sample. Table 1 reports the distribution of spinoff transactions included in the final sample by the year in which the spinoff is completed. There are 147 spinoffs in the sample period with a major concentration from 1996 through 2001.

I follow each spinoff firm the spinoff year *(t=0)* to up to four years *(t=4)* post spinoff and collect all relevant data for the post spinoff window. In order to examine the difference between spinoff firm director compensation and its peers, I determine matched firms for the spinoff units and the parent firms based on firm size and industry following the current literature (Denis et al. 2015). To maximize the number of matched observations, I use the coarsened exact matching procedure starting from spinoff firm-year observation and obtain one matched firm-year observation based on industry (48 industry definition by Fama and French), firm size (log of firm market value) and year. So, for each firm-year observation that appears in the spinoff sample, there will be one matched firm-year observation from non-spinoff firms. This matching procedure ensures that all spinoff firm-year observations are matched and mitigates the problem that directors of spinoff firms are matched to the same directors in peer firms.

Table 2 Panel A reports summary statistics of director compensation in natural log form and converted to year 2000 dollar for spinoff firms and their peers. Director cash compensation includes annual retainer and meeting fees. Stock compensation values are calculated based on the number of stocks rewarded times year-end stock price. Options values are calculated based on the

Black-Scholes options reported by Execucomp. Percent equity compensation is calculated as the percentage of stock and options value in the total compensation and percent cash is calculated as the percentage of cash compensation in the total compensation. Spinoff directors seem to be paid significantly higher than matched firm directors at both firm level (board compensation) and director level (director compensation). Spinoff boards of directors as a whole are paid $137,910 more on average in total compensation than board of directors at other peer firms. Spinoff director's pay structure is also significantly different from their peers, where directors of spinoff are paid more in equity compensation (including value of stock options and stock rewards). At director level, we also observe higher compensation for spinoff directors relative to matched firm directors, where on average each spinoff director is paid $91,000 more in total compensation.

In Panel B of Table 2, I provide summary statistics of firm and board characteristics of the final spinoff and matched sample. Since firms are matched based on firm size and industry, we can confirm that the matching works quite well looking at firm size and industry means of spinoff firms versus their respective matched firms. Unsurprisingly, we see significant differences in board structures (lower number of directors and higher board independence) between spinoff firms and their matched firms, consistent with Denis et al. (2015). Spinoff firms also seem to have significantly higher annual stock returns relative to their peer firms, consistent with documented evidence of improved performance of spinoff units in previous literature.

3.2. Director Compensation

Given significant differences in univariate between compensation of spinoff directors and matched firm directors, multivariate analysis is carried out to control for firm and board characteristics. Controlled firm characteristics include firm size (natural log of firm market value), firm market-to-book ratio, firm leverage, firm profitability (ROA), and firm annual stock return. I

also control for board structures since Denis et al. (2015) document significant differences between spinoff board and peer firm board, where I include the number of director (board size), whether the CEO is also the chairman of the board (duality), proportion of outside directors on board (board independence) and whether the board is classified (classified board). CEO ownership (percentage of shares owned by the firm CEO) is also included to control for CEO's stake in the company.

Table 3 reports the results for the determinants of director compensation. Consistent with hypothesis H1, spinoff directors receive higher compensation at both board and director level. Larger firms pay their directors more, consistent with Cordeiro et al. (2005). CEO ownership is negatively related to director pay, consistent with Linck et al. (2009). In terms of pay structure, directors of spinoff firms receiver higher equity compensation relative to their peers at industry and size-matched firms, supporting the incentive alignment hypothesis H2.

In order to test hypothesis H1', I partition the spinoff sample into firms with outside hired CEOs and firms with parent related CEOs. The regressions results of the partitioned spinoff sample with its respective matched firms are reported in Table 4 where Panel A reports results for firms with outside hired CEOs (*Non-parent CEOs*) and Panel B reports results for parent related CEOs (*Parent CEOs*). From Panel A of Table 4, spinoff directors of firms with outside hired CEOs are found to be paid significantly more in cash, stock, options and total compensation at both the firm level and the director level compared to their non-spinoff peers. These non-parent CEO spinoff firms are also paid a higher proportion of director compensation in equity and lower proportion of compensation in cash relative to their peer firms. In contrast, Panel B of Table 4 reports no significant difference in director compensation between spinoff firms managed by parent related CEOs and peer firms.

Higher equity pay for spinoff directors is consistent with better incentive alignment relative to peer firms, while higher dollar payment supports the hypothesis that newly formed board of directors demands higher pay to compensate for their efforts in governing a new independent business that used to share governance services with parent firms. Since the higher compensation is only observed for spinoff firms with outside hired CEOs, the results are also consistent with board of spinoff firms with outside hired CEOs compensate themselves highrt for the increased needs for CEO ability assessment (Denis et al. 2015).

Although different measurements of director compensation are examined, these measurements are all simultaneously determined by the board of directors at the annual meeting. Therefore, seemingly unrelated regression technique is applicable to allow for the error terms to be correlated across four different compensation equations. In Table 5, I report regression results using seemingly unrelated regressions. All results hold for non-parent CEOs except for cash compensation in Panel A of Table 5. In contrast, using seemingly unrelated regressions, spinoff firms with parent CEOs are found to pay their directors significantly less than their peer firms. These results are generally consistent with Table 4 and with our expectation of director compensation in spinoff firms.

3.3. Director – CEO Cronyism

As emphasized in the motivation of the paper, spinoff setting provides an opportunity to evaluate CEO's influence on the board of directors since a parent CEO might exert more infuence over the newly formed board of directors of which he or she is more involved in the director selection process compared to an outside hired spinoff CEO. I follow Brick et al. (2006) and examine CEO-director cronyism represented by the positive relationship between CEO compensation and excess director compensation. Brick et al. (2006) show that there is a positive

dependence of CEO compensation on excess director compensation measured by unexplained director compensation after controlling for board and firm characteristics as well as firm performance. If a parent spinoff CEOs have higher influence over the board of directors, cronyism is expected to be at least as strong as CEOs of matched firms while cronyism should be weaker for outside hired CEOs compared to CEOs of matched firms.

Table 6 reports the test for cronyism in spinoff firms relative to matched firms where I follow Brick et al. (2006) and calculate excess director compensation as the residuals from the regression of the log of director total compensation on firm characteristics including firm size, firm ROA, market-to-book, firm leverage, stock return, CEO gender, and board characteristics such as board size, duality, and board independence. Panel A reports results for outside hired CEOs and Panel B reports results for parent related CEOs. Evidence of cronyism is clear in Table 6. Whether the CEO was an external hire or a former parent company employee, there is a positive and significant relationship between CEO compensation and excess director compensation, consistent with Brick et al. (2006). CEOs of spinoff business receive higher total compensation compared to their peers at non-spinoff firms, indicated by a positive and significant coefficient on the dummy variable *Spinoff* in both Panel A and B for CEO total compensation. However, in Panel A of Table 6 the interaction term between *Spinoff* and *Excess director compensation* is negative and significant in columns (5) and (6) indicating that for spinoff firms with outside hired CEOs, cronyism is significantly lower. In contrast, for parent related CEOs, there is no significant decrease in cronyism as seen in Panel B of Table 6. The significantly lower cronyism reported for firms with outside hired CEOs is consistent with the notion that spinoff board shows lower collusion towards an externally hired CEOs, supporting the CEO influence hypothesis H3.

3.4. Additional Tests

3.4.1. Director compensation in parent firms

An alternative explanation for the finding that director compensation is higher in spinoff firms than that in peer firms is that since the board compensation of spinoff might mirror parent firm's practices, parent firm might also pay its directors more than its relative industry and sized-matched peers. Thus, I also examine the sample of parent firms and determine their industry and size-matched peers using the same strategy for the spinoff sample.

Table 7 reports the descriptive statistics for parent firms and their industry and size-matched peers. In contrast to spinoff firms, parent firm directors are paid less than their peers where parent firm board is paid $100,690 less in total compensation. Parent directors also receive significant lower equity compensation relative to peer firm directors.

I repeat the multivariate analysis for all parent firm board compensation and report the results in Table 8. We observe no significant differences between compensation of the parent board and its peer firm board both in terms of the amount and the structure of pay. Using seemingly unrelated regressions in Table 9, parent firms are even found to pay significantly less stock compensation relative to peer firms. The results thus help reduce the possibility that higher director compensation in spinoff firms was related to parent firms' board compensation practices. These results also mean that there is no better incentive alignment in compensation for parent firm directors after the business divestiture relative to their own peers.

3.4.2. Market reaction to spinoff announcement

Compensation of spinoff directors may also be impacted by whether the spinoff decision is perceived positively by the market. If the spinoff is positively perceived, directors of spinoff units might be able to negotiate higher compensation with shareholders of parent firms. In order

to test this hypothesis, I partition the spinoff sample into two groups where well perceived spinoff has positive cumulative abnormal return (CAR) around spinoff announcement and poorly perceived decision has negative CAR (CAR [-1;+1] and CAR[-5;+5]).

Panel A of Table 10 summarizes the parent cumulative abnormal stock returns around spinoff announcement. In general market reacts positively to parent's spinoff decision but there is 22% of spinoff announcements that saw negative 3 day CARs. The number of parents reported here is lower than the number of spinoff units since there are cases where one parent spun off more than one division.

Panel B and C of Table 10 show multivariate regression coefficients of the determinant of director pay for positive CAR spinoffs and negative CAR spinoffs respectively. In both of these panels, spinoff directors receive significantly higher compensation at board and individual levels. Results seem to be stronger and more consistent for positive parent CAR spinoffs (Panel B) with significantly higher equity pay for spinoff directors relative to peers. However, the number of negative parent CAR spinoffs is smaller and the results do not contradict positive parent CAR spinoffs, thus I did not find supporting evidence that market reaction to spinoff helps explain director pay.

4. Conclusion

Motivated by the spinoff event as an opportunity for spinoff firms to form a new board of directors from scratch, I examine whether directors of the newly formed spinoff boards are compensated differently from peer firms of the same size and in the same industry. I report significantly higher director compensation enjoyed by the board formed by spinoff firms and better incentive alignment for spinoff directors in comparison with industry and size-matched firms. The significance of the results hold for the partition of spinoff firms led by outside hired CEOs and

disappear for firms led by CEOs who were previously employed as management or director in parent firms. My results highlight that directors demand compensation for the efforts they make, in this case, to monitor, advise and evaluate the new spinoff firm and its management.

Moreover, when examining the relationship between CEO and director compensation, I find supporting evidence for the hypothesis that spinoff board of directors and outside hired spinoff CEOs have lower cronyism. Since CEOs who are formerly employed by the parent firms have more influence over the composition of the board of directors, the result is consistent with the notion that spinoff board compensation is set up for efficiency when management of spinoff firm is also new to the spinoff business.

In additional tests I find no significant difference in director compensation between parent firms and their industry and size matched peers, indicating that parent firms' compensation practices does not influence the higher compensation spinoff firm directors receive. Moreover, market reaction to spinoff announcement does not seem to impact how spinoff directors pay themselves.

The paper extends the current literature inspecting compensation of the board of director using a sample of spinoff firms who need to set up their boards from scratch. My finding provides additional evidence that directors are compensated based on their efforts especially when these efforts are demanded to monitor, advise and evaluate a newly hired CEO who has not had experiences managing the firm. Furthermore, I provide evidence that limiting CEO's influence on the formation of the board of directors might help mitigate subsequent cronyism between the board of director and the firm CEO.

References

Baker, M., & Gompers, P. (2003). The Determinants of Board Structure at the Initial Public Offering. *The Journal of Law and Economics, 46*(2), 569-598.

Bhagat, S., & Bolton, B. (2013). Director Ownership, Governance, and Performance. *Journal of Financial and Quantitative Analysis*, *48*(1), 105-135.

Brick, I. E., Palmon, O., & Wald, J. K. (2006). CEO compensation, director compensation, and firm performance: Evidence of cronyism? *Journal of Corporate Finance*, *12*(3), 403-423.

Chemmanur, T. J., Jordan, B. D., Liu, M. H., & Wu, Q. (2010). Antitakeover provisions in corporate spin-offs. *Journal of Banking & Finance*, *34*(4), 813-824.

Chemmanur, T. J., & Yan, A. (2004). A Theory of Corporate Spin-offs. *Journal of Financial Economics*, *72*(2), 259-290.

Coles, J. L., Daniel, N. D., & Naveen, L. (2014). Co-opted boards. *Review of Financial Studies, 27(6),* 1751-1796.

Coles, J. L., & Hoi, C. (2003). New Evidence on the Market for Directors: Board Membership and Pennsylvania Senate Bill 1310. *The Journal of Finance*, *58*(1), 197-230.

Cordeiro, J., Veliyath, R., & Eramus, E. (2000). An Empirical Investigation of the Determinants of Outside Director Compensation. *Corporate Governance, 8*(3), 268-279.

Dalton, D. R., & Daily, C. M. (2001). Director Stock Compensation: An Invitation to a Conspicuous Conflict of Interests? *Business Ethics Quarterly*, *11*(1), 89-108.

Denis, D. J., Denis, D. K., & Walker, M. D. (2014). Matching directors with firms: The role of industry expertise and CEO influence. *Working paper, University of Pittsburgh & North Carolina State University*.

Denis, D. J., Denis, D. K., & Walker, M. D. (2015). CEO Assessment and the Structure of Newly Formed Boards. *Review of Financial Studies, 28*(12), 3338-3366.

Deutsch, Y., Keil, T., & Laamanen, T. (2007). Decision Making in Acquisitions: The Effect of Outside Directors' Compensation on Acquisition Patterns. *Journal of Management, 33*(1), 30-56.

Du, W., & He, S. (2015). Anti-takeover Provisions, Corporate Governance, and Firm Performance: A Study of Corporate Spin-offs. *Working paper, Louisiana State University*

Fama, E. F., & Jensen, M. C. (1983). Separation of Ownership and Control. *Journal of Laws and Economics, 26*(2), 301-325.

Feng, Y., Nandy, D. K., & Tian, Y. S. (2015). Executive compensation and the corporate spin-off decision. *Journal of Economics and Business*, *77*, 94-117.

Fich, E. M., & Shivdasani, A. (2007). Financial fraud, director reputation, and shareholder wealth. *Journal of Financial Economics*, *86*(2), 306-336.

Fich, E., & Shivdasani, A. (2005). The Impact of Stock-Option Compensation for Outside Directors on Firm Value. *The Journal of Business*, *78*(6), 2229-2254.

Fich, E., & Shivdasani, A. (2005). The Impact of Stock-Option Compensation for Outside Directors on Firm Value*. *The Journal of Business*, *78*(6), 2229-2254.

Gilson, S. C. (1990). Bankruptcy, boards, banks, and blockholders. *Journal of Financial Economics*, *27*(2), 355-387.

Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review*, *88*(1), 96-118.

Jain, B. A., Kini, O., & Shenoy, J. (2011). Vertical divestitures through equity carve-outs and spin-offs: A product markets perspective. *Journal of Financial Economics*, *100*(3), 594-615.

Kaplan, S., & Reishus, D. (1990). Outside Directorship and Firm Performance. *Journal of Financial Economics*, *27*(2), 389-410.

King, C., Condit, M., 2001. Spin-off boards: Creating dream teams. The Corporate Board, November/December, 10-14.

Linck, J. S., Netter, J. M., & Yang, T. (2008). The Effects and Unintended Consequences of the Sarbanes-Oxley Act on the Supply and Demand for Directors. *Review of Financial Studies*, *22*(8), 3287-3328.

Linn, S. C., & Park, D. (2005). Outside director compensation policy and the investment opportunity set. *Journal of Corporate Finance*, *11*(4), 680-715.

Linn, S., & Martin, K. (1998). The effects of outside director stock incentive compensation plans on stockholder wealth. *Working paper, University of Oklahoma and New Mexico State University*.

Seward, J. K., & Walsh, J. P. (1996). The governance and control of voluntary corporate spin-offs. *Strategic Management Journal*, *17*(1), 25-39.

Sharma, V. (2011). Independent directors and the propensity to pay dividends. *Journal of Corporate Finance*, *17*(4), 1001-1015.

Wruck, E., & Wruck, K. (2002). Restructuring Top Management: Evidence from Corporate Spinoffs. *Journal of Labor Economics*, *20*(S2), S176-S218.

Yermack, D. (2004). Remuneration, Retention, and Reputation Incentives for Outside Directors.*The Journal of Finance*, *59*(5), 2281-2308.

Tables

Table 1.1 Distribution of spin-offs by year

This table presents the distribution of tax-free spin-off transactions in the final sample from 1996 to 2013. Spin-off transactions were collected from SDC database and merged with available information from Compustat, Execucomp, CRSP and ISS. Missing director compensation data is supplemented by hand collected data from spin-off firm proxy statements. All spin-off firms that became private, were acquired immediately after the completion of the spin-off and cannot be identified were excluded from the final sample.

Year	Number	Percentage of Sample
1996	9	6%
1997	9	6%
1998	12	8%
1999	13	9%
2000	14	10%
2001	8	5%
2002	2	1%
2003	2	1%
2004	4	3%
2005	4	3%
2006	6	4%
2007	12	8%
2008	12	8%
2009	2	1%
2010	8	5%
2011	9	6%
2012	11	7%
2013	10	7%
Total	147	100%

Table 1.2 Descriptive statistics of spinoff and matched firms

This table reports descriptive statistics for spin-off firms and their industry and size-matched peers. Panel A includes director compensation and Panel B describes firm and board characteristics. ***, **, and * denote significance at 1%, 5% and 10%.

Panel A: Director Compensation

	Spinoff			Peers			Difference	
Variables	Mean (1)	Median	Std. Dev.	Mean (2)	Median	Std. Dev.	(1)-(2)	
Board Compensation								
Cash	5.43	5.36	1.08	5.35	5.36	1.30	0.08	
Stock	5.90	6.10	1.28	4.55	5.74	2.76	1.35	***
Options	5.81	5.85	1.19	3.80	3.51	1.70	2.01	***
Total Compensation	6.35	6.39	1.20	5.79	5.58	1.54	0.56	***
Director Compensation								
Cash	0.98	0.89	0.48	0.92	0.86	0.34	0.06	*
Stock	1.11	0.98	0.62	0.70	0.64	0.40	0.41	***
Options	0.94	0.89	0.29	0.64	0.73	0.42	0.29	***
Total Compensation	1.15	1.03	0.53	1.00	0.94	0.38	0.15	***
Pay Structure								
Options %	0.54	0.57	0.27	0.29	0.19	0.26	0.26	***
Stock %	0.47	0.47	0.22	0.32	0.32	0.27	0.15	***
Equity %	0.64	0.67	0.19	0.40	0.41	0.27	0.25	***
Cash %	0.51	0.45	0.30	0.68	0.75	0.28	-0.18	***

Panel B: Firm Characteristics

	Spinoff			Peers			Difference	
Variables	Mean (1)	Median	Std. Dev.	Mean (2)	Median	Std. Dev.	(1)-(2)	
Firm size - ln(Market value)	7.33	7.26	1.40	7.36	7.31	1.38	-0.02	
Market-to-book ratio	5.44	2.59	4.64	2.84	2.16	4.41	2.60	
Leverage	0.21	0.20	0.18	0.19	0.18	0.18	0.02	*
Return on Assets	0.02	0.04	0.16	0.04	0.05	0.11	-0.01	*
Stock Return	0.13	0.06	0.59	0.07	0.03	0.56	0.05	*
Industry	28.52	33.00	13.09	28.52	33.00	13.09	0.00	
Number of Directors	8.59	8.00	2.17	9.48	9.00	3.09	-0.90	***
Board Independence	0.74	0.78	0.16	0.68	0.71	0.18	0.05	***
Classified Board	0.88	1.00	0.33	0.69	1.00	0.46	0.19	***
Duality	0.60	1.00	0.49	0.62	1.00	0.49	-0.02	
CEO ownership	0.01	0.00	0.01	0.03	0.00	0.17	-0.02	**

Table 1.3 Director compensation of spin-off firms

This table reports regression of director compensation determinants for spin-off firms versus industry and size matched peer firms. Variable Spin-off equal 1 for firm spun off from a parent firm and 0 for peer firms. All regressions include year fixed effects. Standard errors are clustered by firm and in parenthesis. ***, ** and * denote significance at 1%, 5% and 10% respectively.

	Board Compensation				Director Compensation				Pay Structure	
Variables	Cash	Stock	Options	Total	Cash	Stock	Options	Total	Equity	Cash
Spinoff	0.214***	1.812***	1.272***	0.608***	0.069***	0.379***	0.221***	0.149***	0.234***	-0.156***
	(0.068)	(0.165)	(0.176)	(0.074)	(0.026)	(0.054)	(0.029)	(0.026)	(0.054)	(0.028)
Firm size	0.122***	0.257***	0.299***	0.197***	0.025***	0.051***	0.044***	0.038***	0.034*	-0.026***
	(0.023)	(0.057)	(0.056)	(0.025)	(0.008)	(0.016)	(0.010)	(0.009)	(0.019)	(0.008)
Market-to-book	-0.002**	0.009	-0.006***	-0.002*	0.00	0.00	-0.001***	0	0.003**	0.000**
	(0.001)	(0.008)	(0.001)	(0.001)	(0.000)	(0.002)	(0.000)	(0.000)	(0.001)	(0.000)
Leverage	0.423**	-0.966**	-0.263	0.077	0.111*	-0.197*	-0.01	0.03	-0.248	0.141**
	(0.166)	(0.376)	(0.422)	(0.169)	(0.061)	(0.116)	(0.080)	(0.061)	(0.155)	(0.062)
ROA	-0.541**	-1.058***	-0.582	-0.824***	-0.132*	-0.273***	-0.117	-0.205***	0.245	0.197**
	(0.264)	(0.384)	(0.728)	(0.267)	(0.072)	(0.096)	(0.126)	(0.073)	(0.166)	(0.092)
Stock return	-0.005	-0.141*	0.054	-0.031	0	-0.069***	0.015	-0.012	-0.015	0.002
	(0.030)	(0.084)	(0.084)	(0.034)	(0.013)	(0.025)	(0.016)	(0.012)	(0.057)	(0.013)
Board size	0.116***	-0.02	-0.027	0.088***	-0.081***	-0.094***	-0.085***	-0.098***	-0.015	0.015**
	(0.016)	(0.031)	(0.047)	(0.018)	(0.005)	(0.009)	(0.007)	(0.005)	(0.013)	(0.006)
Board independence	0.017***	0.017***	0.020***	0.021***	-0.016***	-0.015***	-0.009***	-0.018***	0.002	-0.002**
	(0.003)	(0.004)	(0.005)	(0.002)	(0.002)	(0.003)	(0.001)	(0.002)	(0.002)	(0.001)
Classified board	-0.051	-0.079	-0.174	-0.025	0	-0.014	-0.012	0.006	-0.041	-0.008
	(0.066)	(0.139)	(0.148)	(0.059)	(0.023)	(0.044)	(0.030)	(0.023)	(0.054)	(0.023)
Duality	0.027	-0.133	0.018	0.053	0.021	-0.016	0.013	0.027	-0.085*	-0.002
	(0.059)	(0.123)	(0.135)	(0.058)	(0.018)	(0.036)	(0.025)	(0.018)	(0.046)	(0.022)
CEO ownership	0.068	-0.327***	-0.451***	(0.162)	0.037	-0.078***	-0.099***	(0.029)	-0.113***	0.088***
	(0.071)	(0.064)	(0.090)	(0.140)	(0.026)	(0.027)	(0.020)	(0.050)	(0.027)	(0.027)
Constant	1.294***	0.665	-1.503**	1.055***	2.433***	2.119***	1.392***	2.666***	0.235	0.950***
	(0.268)	(0.481)	(0.650)	(0.243)	(0.112)	(0.176)	(0.146)	(0.107)	(0.297)	(0.095)
Observations	1172	826	858	1186	1170	826	858	1186	1186	1170
R-squared	0.705	0.675	0.774	0.786	0.598	0.603	0.731	0.656	0.463	0.335
Adj. R-squared	0.695	0.655	0.76	0.779	0.585	0.578	0.715	0.645	0.361	0.313

Table 1.4 Director compensation in spin-off firms by CEO source

This table reports regression of director compensation determinants for spin-off firms versus industry and size matched peer firms. Variable *Spinoff* equal 1 for firm spun off from a parent firm and 0 for peer firms. Panel A report results for spin-off firm with an outside hired CEO and panel B reports results for spin-off firms with CEO who was formerly employed by the parent firm. All regressions include year fixed effects. Standard errors are clustered by firm and in parenthesis. ***, ** and * denote significance at 1%, 5% and 10% respectively.

Panel A: Non-parent CEOs

	Board Compensation				Director Compensation				Pay Structure	
Variables	Cash	Stock	Options	Total	Cash	Stock	Options	Total	Equity	Cash
Spin-off	0.187***	1.929***	1.078***	0.570***	0.067**	0.393***	0.183***	0.143***	0.161***	-0.153***
	(0.062)	(0.179)	(0.189)	(0.081)	(0.028)	(0.060)	(0.032)	(0.029)	(0.028)	(0.028)
Firm size	0.131***	0.223***	0.277***	0.168***	0.022***	0.036***	0.031***	0.025***	0.021***	-0.019**
	(0.024)	(0.057)	(0.057)	(0.026)	(0.008)	(0.012)	(0.010)	(0.008)	(0.008)	(0.008)
Market-to-book	0	-0.003	-0.003**	-0.001**	0	0	-0.000***	-0.000***	-0.000**	0.000***
	(0.001)	(0.009)	(0.001)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	0.223	-0.522	0.013	-0.002	0.109	-0.052	0.024	0.062	-0.101	0.096*
	(0.138)	(0.377)	(0.417)	(0.161)	(0.067)	(0.095)	(0.084)	(0.068)	(0.062)	(0.056)
ROA	0.208	-0.095	-0.953	(0.000)	-0.027	-0.034	-0.167	-0.049	-0.153***	0.137**
	(0.387)	(0.167)	(0.869)	(0.238)	(0.091)	(0.055)	(0.164)	(0.070)	(0.053)	(0.053)
Stock return	-0.008	-0.156	0.172*	-0.026	-0.02	-0.059**	0.034**	-0.027**	-0.01	0.008
	(0.036)	(0.113)	(0.088)	(0.034)	(0.013)	(0.028)	(0.017)	(0.011)	(0.016)	(0.015)
Board size	0.117***	-0.046	-0.035	0.085***	-0.082***	-0.097***	-0.086***	-0.099***	-0.021***	0.018***
	(0.016)	(0.037)	(0.042)	(0.019)	(0.005)	(0.009)	(0.008)	(0.006)	(0.006)	(0.006)
Board independence	0.014***	0.014***	0.020***	0.017***	-0.017***	-0.014***	-0.009***	-0.018***	0.002**	-0.002**
	(0.003)	(0.005)	(0.005)	(0.002)	(0.002)	(0.003)	(0.001)	(0.002)	(0.001)	(0.001)
Classified board	-0.039	-0.048	0.126	-0.057	0.017	0.015	0.032	0.01	-0.013	0.015
	(0.060)	(0.133)	(0.147)	(0.060)	(0.029)	(0.043)	(0.028)	(0.028)	(0.023)	(0.022)
Duality	0.002	-0.026	-0.085	0.047	0.014	0.013	0.003	0.031	0.008	-0.011
	(0.057)	(0.135)	(0.136)	(0.059)	(0.020)	(0.036)	(0.025)	(0.020)	(0.024)	(0.022)
CEO ownership	-1.458*	(0.591)	(0.024)	-1.782**	-0.598**	-0.418*	(0.090)	-0.648***	0.249	(0.056)
	(0.849)	(0.779)	(0.986)	(0.707)	(0.263)	(0.236)	(0.253)	(0.204)	(0.289)	(0.226)
Constant	1.481***	1.345**	-0.769	1.767***	2.473***	2.150***	1.598***	2.769***	0.213**	0.796***
	(0.270)	(0.537)	(0.660)	(0.261)	(0.129)	(0.202)	(0.138)	(0.124)	(0.100)	(0.097)

Observations	728	382	414	742	726	382	414	742	744	728
R-squared	0.746	0.663	0.782	0.795	0.59	0.608	0.746	0.649	0.279	0.356
Adj. R-squared	0.736	0.638	0.767	0.788	0.574	0.579	0.729	0.637	0.253	0.333

Panel B: Parent CEOs

	Board Compensation				Director Compensation					
Variables	Cash	Stock	Options	Total	Cash	Stock	Options	Total	Equity	Cash
Spin-off	0.153	0.328	-0.119	0.172	0.015	0.059	-0.012	0.024	0	0
	(0.110)	(0.655)	(0.571)	(0.176)	(0.017)	(0.078)	(0.062)	(0.028)	(0.084)	(0.084)
Firm size	0.114***	0.374***	0.159**	0.273***	0.011**	0.047***	0.01	0.032***	0.044***	-0.044***
	(0.036)	(0.109)	(0.079)	(0.036)	(0.005)	(0.014)	(0.009)	(0.006)	(0.014)	(0.014)
Market-to-book	-0.000*	0.000***	-0.001***	0	0	0.000***	-0.000***	0	0.000**	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	0.109	-2.017**	2.264***	-0.041	-0.03	-0.255**	0.274***	-0.033	-0.085	0.085
	(0.269)	(0.954)	(0.638)	(0.310)	(0.042)	(0.115)	(0.080)	(0.045)	(0.124)	(0.124)
ROA	0.297	-1.962**	0.752	-0.596**	0.049	-0.301**	0.158***	-0.105**	-0.285**	0.285**
	(0.374)	(0.844)	(0.528)	(0.294)	(0.071)	(0.124)	(0.058)	(0.041)	(0.121)	(0.121)
Stock return	-0.148	0.392	-0.246	0.055	-0.015	-0.031	-0.034	-0.03	0.069	-0.069
	(0.326)	(0.910)	(0.537)	(0.339)	(0.044)	(0.127)	(0.071)	(0.058)	(0.128)	(0.128)
Board size	0.079***	-0.105	0.156***	0.025	-0.043***	-0.038***	-0.012*	-0.062***	-0.008	0.008
	(0.025)	(0.069)	(0.050)	(0.027)	(0.003)	(0.009)	(0.006)	(0.005)	(0.010)	(0.010)
Board independence	0.006**	0.005	0.024***	0.006*	0	0.001	0.003***	0.001	0.002	-0.002
	(0.003)	(0.010)	(0.006)	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Classified board	-0.01	-0.092	0.157	-0.03	-0.003	-0.001	0.017	-0.005	0.016	-0.016
	(0.088)	(0.317)	(0.240)	(0.096)	(0.012)	(0.038)	(0.029)	(0.014)	(0.037)	(0.037)
Duality	0.019	-0.376	0.121	-0.019	0.01	-0.04	0.017	0.006	-0.002	0.002
	(0.085)	(0.303)	(0.223)	(0.091)	(0.012)	(0.036)	(0.027)	(0.013)	(0.037)	(0.037)
CEO Ownership	-2.274**	(2.261)	-3.416*	-3.556***	-0.271*	(0.259)	(0.358)	-0.435**	(0.800)	0.800
	(1.013)	(2.098)	(1.890)	(1.151)	(0.162)	(0.266)	(0.218)	(0.200)	(0.520)	(0.520)
Constant	0.990***	0.371	-3.288***	1.212***	0.619***	0.241**	-0.053	0.738***	0.127	0.873***
	(0.288)	(1.011)	(0.716)	(0.293)	(0.043)	(0.118)	(0.089)	(0.046)	(0.137)	(0.137)
Observations	444	444	444	444	444	444	444	444	442	442
R-squared	0.877	0.098	0.632	0.854	0.821	0.145	0.571	0.783	0.125	0.125
Adj. R-squared	0.869	0.042	0.609	0.845	0.81	0.092	0.544	0.77	0.07	0.07

Table 1.5 Director compensation of spinoff firms - Seemingly unrelated regressions

This table reports seemingly unrelated regression results of director compensation in spinoff firms versus peer firms. Variable Spin-off equal 1 for firms spun off from a parent firm and 0 for industry and size matched peers. Panel A report results for spin-off firm with an outside hired CEO and panel B reports results for spin-off firms with CEO who was formerly employed by the parent firm. T-statistics are in parenthesis and ***, ** and * denote significance at 1%, 5% and 10% respectively.

Panel A: Non-Parent CEOs

	Board Compensation				Director Compensation			
Variables	Cash	Stock	Options	Total	Cash	Stock	Options	Total
Spin-off	0.277	1.296***	1.853***	0.711***	0.035	0.188***	0.281***	0.104***
	(1.540)	(4.150)	(4.520)	(3.530)	(1.090)	(4.090)	(4.550)	(2.980)
Firm size	0.334***	0.498***	0.565***	0.414***	0.0474***	0.075***	0.075***	0.058***
	(5.630)	(4.820)	(4.170)	(6.220)	(4.480)	(4.930)	(3.670)	(5.060)
Market-to-book	0.012	0.002	-0.025	0.007	0.003	0.0005	-0.003	0.002
	(0.680)	(0.060)	(-0.61)	(0.350)	(0.770)	(0.100)	(-0.41)	(0.490)
Leverage	0.750	-0.618	1.373	0.251	0.0884	-0.166	0.125	-0.0112
	(1.590)	(-0.75)	(1.280)	(0.470)	(1.050)	(-1.38)	(0.770)	(-0.12)
ROA	-1.045	-0.871	-0.654	-0.475	-0.296*	-0.193	-0.0828	-0.19
	(-1.13)	(-0.54)	(-0.31)	(-0.46)	(-1.79)	(-0.81)	(-0.26)	(-1.05)
Stock return	-0.368**	-0.314	-0.588	-0.426**	-0.070**	-0.059	-0.096	-0.083**
	(-2.09)	(-1.03)	(-1.47)	(-2.16)	(-2.24)	(-1.30)	(-1.57)	(-2.42)
Board size	0.028	-0.181**	-0.172*	-0.016	-0.093***	-0.101***	-0.095***	-0.110***
	(0.670)	(-2.44)	(-1.78)	(-0.34)	(-12.22)	(-9.22)	(-6.45)	(-13.34)
Duality	0.023***	0.030***	0.055***	0.032***	-0.010***	-0.006***	-0.002	-0.010***
	(3.430)	(2.600)	(3.610)	(4.240)	(-8.31)	(-3.27)	(-0.87)	(-7.86)
Board independence	-0.218	-0.221	-0.665*	-0.273	-0.042	-0.0341	-0.097*	-0.051*
	(-1.38)	(-0.81)	(-1.85)	(-1.55)	(-1.50)	(-0.85)	(-1.78)	(-1.67)
Classified board	-0.027	-0.580**	-0.906**	-0.265	0.0202	-0.068*	-0.104*	-0.013
	(-0.17)	(-2.09)	(-2.49)	(-1.48)	(0.710)	(-1.66)	(-1.90)	(-0.43)
Constant	1.269*	0.645	-1.981	1.364*	2.123***	1.558***	1.184***	2.370***
	(1.820)	(0.530)	(-1.25)	(1.740)	(17.050)	(8.720)	(4.930)	(17.520)
R-squared	0.332	0.322	0.3	0.39	0.622	0.52	0.377	0.663
Chi-squared	69.11	66.04	59.55	88.96	228.7	150.7	84.01	273.3

Panel B: Parent CEOs

	Board Compensation				Director Compensation			
Variables	Cash	Stock	Options	Total	Cash	Stock	Options	Total
Spin-off	-0.529**	0.0526	-0.716**	-0.484**	-0.063**	0.0241	-0.080*	-0.055*
	(-2.29)	(0.150)	(-2.04)	(-2.10)	(-2.31)	(0.560)	(-1.96)	(-1.95)
Firm size	0.433***	0.153*	0.606***	0.497***	0.046***	0.018*	0.059***	0.053***
	(7.920)	(1.810)	(7.280)	(9.070)	(7.190)	(1.740)	(6.100)	(7.840)
Market-to-book	-0.0002	0.0004	-0.0006	-0.0002	-0.00002	0.00005	-0.00007	-0.00002
	(-0.68)	(0.980)	(-1.35)	(-0.56)	(-0.64)	(0.900)	(-1.40)	(-0.64)
Leverage	-0.118	-2.415***	1.619**	-0.56	-0.0606	-0.305***	0.209**	-0.106*
	(-0.25)	(-3.34)	(2.280)	(-1.20)	(-1.11)	(-3.50)	(2.520)	(-1.85)
ROA	0.708	-1.814***	0.905	-0.285	0.091*	-0.284***	0.172**	-0.076
	(1.560)	(-2.58)	(1.320)	(-0.63)	(1.710)	(-3.36)	(2.140)	(-1.37)
Stock return	0.956*	0.684	0.914	1.171**	0.110*	0.0294	0.0953	0.102
	(1.720)	(0.790)	(1.080)	(2.100)	(1.680)	(0.280)	(0.960)	(1.500)
Board size	0.025	-0.063	0.052	-0.011	-0.042***	-0.027***	-0.019***	-0.056***
	(0.750)	(-1.23)	(1.040)	(-0.34)	(-10.89)	(-4.44)	(-3.30)	(-13.84)
Duality	0.042***	0.014**	0.059***	0.045***	0.005***	0.002**	0.007***	0.005***
	(10.500)	(2.300)	(9.840)	(11.290)	(9.940)	(2.300)	(9.320)	(10.430)
Board independence	-0.070	-0.059	0.062	-0.150	-0.014	-0.003	0.005	-0.023
	(-0.49)	(-0.26)	(0.290)	(-1.05)	(-0.81)	(-0.11)	(0.180)	(-1.29)
Classified board	-0.604***	-0.426*	-0.519**	-0.622***	-0.059***	-0.045*	-0.052**	-0.061***
	(-4.28)	(-1.95)	(-2.42)	(-4.40)	(-3.59)	(-1.70)	(-2.07)	(-3.54)
Constant	-1.722***	1.160*	-6.516***	-1.045**	0.251***	0.319***	-0.450***	0.422***
	(-4.04)	(1.760)	(-10.07)	(-2.45)	(5.020)	(4.000)	(-5.95)	(8.070)
R-squared	0.344	0.0467	0.325	0.364	0.342	0.091	0.257	0.404
Chi-squared	276.2	25.76	253.2	300.6	273	52.69	182.4	357.1

Table 1.6 CEO - Director cronyism by CEO source

This table reports tests of CEO – director cronyism. Excess director compensation is calculated following Brick et al. (2006) as the residuals of the regressions of director compensation of firm, CEO and board characteristics. Variable *Spinoff* equal 1 for spin-off firms and 0 for peer firms. Panel A reports results for spin-off firms with outside hired CEO and panel B reports results for spin-off firm with CEO who was formerly employed by the parent firms. Standard errors are clustered by firm and in parenthesis and ***, ** and * denote significance at 1%, 5% and 10% respectively.

Panel A: Non-parent CEOs

	Cash		Equity		Total Compensation	
Variables	(1)	(2)	(3)	(4)	(5)	(6)
Spinoff	0.197***	0.182***	0.777*	0.643	0.300***	0.248***
	(0.07)	(0.06)	(0.42)	(0.43)	(0.08)	(0.06)
Excess director compensation	0.118**	0.126**	0.708	0.977**	0.440***	0.451***
	(0.05)	(0.05)	(0.51)	(0.41)	(0.06)	(0.04)
Spinoff x Excess director compensation	-0.064	-0.068	-0.275	0.425	-0.218**	-0.201***
	(0.07)	(0.07)	(0.53)	(0.67)	(0.10)	(0.07)
Firm size	0.258***	0.270***	0.910***	1.115***	0.421***	0.379***
	(0.02)	(0.02)	(0.14)	(0.14)	(0.03)	(0.02)
Market-to-book	-0.000***	-0.000***	0.070***	0.064***	-0.000**	0
	0.00	0.00	(0.03)	(0.02)	0.00	0.00
Leverage	-0.078	-0.087	-2.198	-2.45	-0.01	-0.084
	(0.15)	(0.14)	(1.60)	(1.65)	(0.22)	(0.17)
ROA	0.519**	0.491**	-0.427	0.431	0.767***	0.611***
	(0.23)	(0.22)	(2.09)	(1.47)	(0.27)	(0.19)
Stock returns	-0.139	-0.143	1.425	0.359	0.24	0.115
	(0.18)	(0.20)	(1.11)	(1.41)	(0.22)	(0.22)
CEO Age	-0.006	-0.005	-0.116***	-0.109***	-0.018***	-0.014***
	(0.01)	(0.01)	(0.04)	(0.04)	(0.01)	(0.00)
CEO Tenure	0.014*	0.012*	0.044	0.072**	0.018***	0.011**
	(0.01)	(0.01)	(0.04)	(0.03)	(0.01)	(0.01)
CEO Ownership	(0.78)	(0.61)	2.42	2.31	-1.998**	-1.235**
	(0.67)	(0.61)	(6.21)	(6.34)	(0.83)	(0.58)
Constant	5.228***	4.862***	12.874***	10.098***	5.747***	5.548***
	(0.39)	(0.38)	(2.14)	(2.13)	(0.34)	(0.29)
Year fixed effect	No	Yes	No	Yes	No	Yes
Observations	782	782	108	108	780	780
R-squared	0.28	0.31	0.46	0.58	0.51	0.58
Adj. R-squared	0.27	0.29	0.40	0.48	0.50	0.57

Panel B: Parent CEOs

	Cash		Equity		Total Compensation	
Variables	(1)	(2)	(3)	(4)	(5)	(6)
Spinoff	0.108	0.099	-0.512	0.316	0.229**	0.294***
	(0.11)	(0.10)	(0.51)	(0.48)	(0.11)	(0.09)
Excess director compensation	0.120**	0.130**	0.724	0.954**	0.444***	0.456***
	(0.05)	(0.05)	(0.52)	(0.37)	(0.06)	(0.05)
Spinoff x Excess director compensation	-0.056	-0.113	0.321	0.658	0.113	0.002
	(0.11)	(0.12)	(0.90)	(0.90)	(0.16)	(0.16)
Firm size	0.267***	0.278***	0.840***	1.040***	0.412***	0.375***
	(0.02)	(0.02)	(0.17)	(0.18)	(0.02)	(0.02)
Market-to-book	-0.000***	-0.000***	0.075**	0.074***	-0.000***	-0.000***
	0.00	0.00	(0.03)	(0.03)	0.00	0.00
Leverage	-0.061	-0.101	-1.38	-0.948	0.089	0.04
	(0.16)	(0.16)	(1.77)	(2.15)	(0.24)	(0.22)
ROA	0.394*	0.367*	-0.603	1.097	0.719**	0.550**
	(0.22)	(0.22)	(2.57)	(1.79)	(0.29)	(0.24)
Stock returns	-0.19	-0.244	3.272*	-0.975	0.444*	0.164
	(0.19)	(0.22)	(1.77)	(2.41)	(0.23)	(0.26)
CEO Age	-0.003	-0.003	-0.109***	-0.102**	-0.012*	-0.012**
	(0.01)	(0.01)	(0.04)	(0.04)	(0.01)	(0.01)
CEO Tenure	0.013	0.011	0.044	0.078**	0.013**	0.010*
	(0.01)	(0.01)	(0.04)	(0.03)	(0.01)	(0.01)
CEO Ownership	(0.65)	(0.50)	2.17	3.91	-1.751**	(1.04)
	(0.65)	(0.60)	(6.28)	(7.19)	(0.79)	(0.71)
Constant	5.026***	4.744***	12.806***	9.481***	5.521***	5.513***
	(0.48)	(0.45)	(2.66)	(2.53)	(0.36)	(0.41)
Year fixed effect	No	Yes	No	Yes	No	Yes
Observations	626	626	94	94	622	622
R-squared	0.26	0.29	0.41	0.55	0.51	0.58
Adj. R-squared	0.24	0.26	0.33	0.43	0.50	0.56

Table 1.7 Descriptive statistics of parent firms

Table report descriptive statistics for parent firms and their industry and size-matched peers. Panel A includes director compensation and Panel B describes firm and board characteristics. ***, **, and * denote significance at 1%, 5% and 10%.

Panel A: Director Compensation

	Parent			Peers			Difference	
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
Variables	(1)			(2)			(1)-(2)	
Board Compensation								
Cash	2.82	3.08	2.57	4.05	3.49	1.97	-1.23	***
Stock	2.07	0.00	2.83	2.40	0.00	2.92	-0.32	**
Options	1.14	0.00	2.11	1.96	0.00	2.42	-0.82	***
Total Compensation	3.44	3.64	2.97	5.01	4.59	1.97	-1.58	***
Director Compensation								
Cash	0.49	0.42	0.25	0.54	0.49	0.30	-0.05	
Stock	0.20	0.00	0.29	0.25	0.00	0.32	-0.05	
Options	0.37	0.34	0.34	0.35	0.28	0.37	0.02	***
Total Compensation	0.59	0.54	0.27	0.66	0.65	0.31	-0.06	***
Pay Structure								
Options %	0.16	0.00	0.63	0.25	0.00	0.34	-0.09	***
Stock %	0.32	0.29	0.40	0.21	0.00	0.28	0.11	
Equity %	0.48	0.55	0.41	0.46	0.52	0.34	0.02	
Cash %	0.50	0.44	0.38	0.53	0.46	0.34	-0.03	

Panel B: Firm Characteristics

	Parent			Peers			Difference	
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
Variables	(1)			(2)			(1)-(2)	
Firm size - ln(Market value)	7.61	7.54	2.14	7.64	7.63	2.09	-0.03	
Market-to-book ratio	3.30	2.31	14.90	3.67	2.27	7.12	-0.37	
Leverage	0.12	0.48	29.63	0.79	0.37	434.60	-0.67	
Return on Assets	0.02	0.04	0.17	0.11	0.04	0.23	-0.10	
Stock Return	0.03	0.02	0.13	0.04	0.03	0.13	-0.01	
Industry	30.68	34.00	12.81	30.68	34.00	12.81	0.00	
Number of Directors	10.10	10.00	2.94	9.51	9.00	2.88	0.59	***
Board Independence	0.68	0.71	0.17	0.64	0.67	0.19	0.04	***
Classified Board	0.61	1.00	0.49	0.60	1.00	0.49	0.01	
Duality	0.66	1.00	0.48	0.61	1.00	0.49	0.05	**
CEO ownership	0.01	0.00	0.04	0.03	0.00	0.06	-0.02	***

Table 1.8 CEO compensation of parent firms

This table reports regression of director compensation determinants for parent firms versus industry and size matched peer firms. Variable *Parent* equal 1 for firm that spun-off parts of its business into independent entities and 0 for peer firms. Standard errors are in parenthesis and ***, ** and * denote significance at 1%, 5% and 10% respectively.

	Board Compensation				Director Compensation				Pay Structure	
Variables	Cash	Stock	Options	Total	Cash	Stock	Options	Total	Equity	Cash
Parent	0.125	-0.499	0.379	-0.052	0.018	-0.045	0.033	-0.004	-0.044	0.046
	(0.121)	(0.325)	(0.241)	(0.112)	(0.014)	(0.037)	(0.026)	(0.014)	(0.040)	(0.040)
Firm size	0.102***	0.315***	-0.022	0.193***	0.009**	0.029**	-0.005	0.017***	0.012	-0.012
	(0.039)	(0.110)	(0.076)	(0.038)	(0.004)	(0.012)	(0.008)	(0.004)	(0.014)	(0.014)
Market-to-book	-0.003	0.006	-0.006	0.004	-0.001	0.001	-0.002**	0	0	0
	(0.003)	(0.011)	(0.007)	(0.004)	0.000	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Leverage	0.009	-0.043	0.022	-0.036	-0.001	-0.004	0	-0.005	-0.002	0.002
	(0.035)	(0.082)	(0.067)	(0.040)	(0.004)	(0.008)	(0.007)	(0.004)	(0.008)	(0.008)
ROA	-0.068	-0.26	1.334**	0.103	-0.052	-0.038	0.173***	-0.028	0.143	-0.143
	(0.299)	(1.096)	(0.618)	(0.423)	(0.050)	(0.139)	(0.057)	(0.054)	(0.170)	(0.170)
Stock return	0.205	-2.378**	0.921	-0.856	0.032	-0.224*	0.107	-0.066	-0.161	0.157
	(0.472)	(1.016)	(0.755)	(0.797)	(0.053)	(0.115)	(0.078)	(0.075)	(0.194)	(0.194)
Board size	0.02	-0.171**	0.206***	-0.003	-0.031***	-0.039***	0.005	-0.044***	-0.001	0
	(0.026)	(0.070)	(0.060)	(0.023)	(0.003)	(0.008)	(0.006)	(0.003)	(0.009)	(0.009)
Board independence	0.003	0.004	0.023***	0.008**	0	0.001	0.002***	0.001*	0.002*	-0.002*
	(0.003)	(0.011)	(0.007)	(0.004)	(0.000)	(0.001)	(0.001)	0.000	(0.001)	(0.001)
Classified board	-0.083	-0.014	0.081	-0.085	-0.009	-0.01	0.022	-0.013	0.011	-0.01
	(0.120)	(0.335)	(0.235)	(0.115)	(0.014)	(0.038)	(0.026)	(0.014)	(0.043)	(0.043)
Duality	0.290**	-0.123	0.656**	0.318**	0.031**	-0.013	0.075**	0.037**	0.049	-0.048
	(0.127)	(0.371)	(0.278)	(0.136)	(0.015)	(0.044)	(0.031)	(0.018)	(0.053)	(0.053)
CEO Ownership	(1.525)	(3.100)	-3.842***	-2.960**	-0.233*	(0.393)	-0.523***	-0.435**	-0.991*	1.002*
	(1.055)	(2.542)	(1.408)	(1.316)	(0.141)	(0.369)	(0.151)	(0.197)	(0.564)	(0.565)
Constant	1.492***	1.557	-3.083***	1.852***	0.502***	0.403***	-0.144*	0.670***	0.222	0.778***
	(0.502)	(1.065)	(0.773)	(0.443)	(0.053)	(0.123)	(0.082)	(0.053)	(0.143)	(0.143)
Observations	388	388	388	388	388	388	388	388	386	386
R-squared	0.604	0.105	0.472	0.563	0.565	0.153	0.4	0.554	0.121	0.123
Adj. R-squared	0.584	0.059	0.445	0.541	0.542	0.109	0.369	0.531	0.075	0.078

Table 1.9 Director compensation in parent firms – Seemingly unrelated regressions

This table reports seemingly unrelated regression results of director compensation in parent firms versus peer firms. Variable *Parent* equal 1 for firms spinning off part of its business and 0 for industry and size matched peers. T-statistics are in parenthesis and ***, ** and * denote significance at 1%, 5% and 10% respectively.

	Board Compensation				Director Compensation			
Variables	Cash	Stock	Options	Total	Cash	Stock	Options	Total
Parent	-0.038	-0.519**	0.287	-0.182	0.005	-0.045*	0.028	-0.014
	(-0.32)	(-2.42)	(1.540)	(-1.55)	(0.430)	(-1.85)	(1.440)	(-1.07)
Firm size	0.210***	0.278***	0.164**	0.256***	0.016***	0.025***	0.014*	0.021***
	(4.580)	(3.350)	(2.280)	(5.640)	(3.450)	(2.650)	(1.850)	(4.180)
Market-to-book	-0.006	0.014	-0.006	0.007	-0.001	0.001	-0.002*	0.0002
	(-1.10)	(1.410)	(-0.69)	(1.270)	(-1.59)	(1.170)	(-1.74)	(0.420)
Leverage	0.034	-0.113*	0.038	-0.052	0.002	-0.011	0.004	-0.007*
	(1.000)	(-1.82)	(0.700)	(-1.52)	(0.460)	(-1.52)	(0.690)	(-1.77)
ROA	0.030	0.225	1.379*	0.408	-0.056	0.020	0.173**	-0.010
	(0.070)	(0.270)	(1.910)	(0.900)	(-1.19)	(0.210)	(2.320)	(-0.19)
Stock return	0.116	-1.991**	0.107	-1.202**	0.013	-0.210**	0.029	-0.124**
	(0.230)	(-2.18)	(0.130)	(-2.40)	(0.240)	(-2.05)	(0.350)	(-2.23)
Board size	-0.016	-0.179***	0.132***	-0.032	-0.029***	-0.037***	-0.002	-0.043***
	(-0.60)	(-3.62)	(3.090)	(-1.20)	(-10.68)	(-6.66)	(-0.35)	(-14.34)
Duality	0.015***	0.001	0.044***	0.018***	0.002***	0.0002	0.004***	0.002***
	(4.130)	(0.140)	(7.950)	(5.060)	(4.250)	(0.230)	(7.840)	(4.210)
Board independence	0.064	0.230	-0.013	0.031	-0.0003	0.014	0.010	-0.005
	(0.520)	(1.030)	(-0.07)	(0.250)	(-0.03)	(0.540)	(0.500)	(-0.39)
Classified board	0.019	-0.160	-0.040	-0.041	-0.004	-0.019	0.002	-0.003
	(0.150)	(-0.66)	(-0.19)	(-0.31)	(-0.28)	(-0.70)	(0.090)	(-0.20)
Constant	0.718*	1.853***	-3.861***	1.611***	0.412***	0.420***	-0.239***	0.636***
	(1.960)	(2.800)	(-6.71)	(4.450)	(10.950)	(5.660)	(-4.01)	(15.760)
R-squared	0.122	0.063	0.242	0.171	0.249	0.12	0.177	0.369
Chi-squared	62.51	30.27	143.8	92.52	149.4	61.28	96.71	262.9

Table 1.10 Director compensation of spinoff firms by market reaction to spinoff decision

This table reports regression of director compensation determinants for spinoff firms versus industry and size matched peer firms. Variable *Spinoff* equal 1 for firm spun off from a parent firm and 0 for peer firms. Panel A describes the parent cumulative abnormal stock returns. Panel B report results for spin-off firm whose parents' stocks experience positive cumulative abnormal return (CAR) around spin-off announcement and panel C reports results for spin-off firms whose parents have negative CAR around spin-off announcement. Standard errors are clustered by firms and in parenthesis. ***, ** and * denote significance at 1%, 5% and 10% respectively.

Panel A: Parent CAR around spin-off announcement

Variable	Obs.	Mean	Std. Dev.	Min	Max
Equally weighted market return					
CAR [-1;+1]	125	0.043	0.071	-0.122	0.381
CAR [-5;+5]	125	0.046	0.089	-0.267	0.389
Value weighted market return					
CAR [-1;+1]	125	0.044	0.069	-0.111	0.361
CAR [-5;+5]	125	0.046	0.092	-0.439	0.371

	Obs.	Percentage
Positive CAR [-1;+1]	98	78%
Negative CAR [-1;+1]	27	22%

Panel B: Positive parent CAR around spinoff announcement

	Board Compensation				Director Compensation				Pay Structure	
Variables	Cash	Stock	Options	Total	Cash	Stock	Options	Total	Equity	Cash
Spinoff	0.304***	2.017***	1.118***	0.695***	0.068***	0.399***	0.201***	0.160***	0.205***	-0.139***
	(0.083)	(0.200)	(0.228)	(0.095)	(0.024)	(0.050)	(0.043)	(0.025)	(0.073)	(0.037)
Firm size	0.104***	0.266***	0.293***	0.136***	0.025***	0.044**	0.042**	0.026***	0.023	-0.016
	(0.036)	(0.078)	(0.085)	(0.036)	(0.009)	(0.020)	(0.016)	(0.010)	(0.031)	(0.012)
Market-to-book	-0.021*	0.009	0.01	-0.003	-0.007**	0.00	0	-0.002	0.002	-0.005*
	(0.011)	(0.009)	(0.007)	-0.006	-0.003	(0.002)	-0.002	-0.002	-0.003	-0.003
Leverage	0.161	-1.100**	-0.38	-0.148	0.079	-0.280**	0.008	0.017	-0.263	0.134*

	(0.192)	(0.473)	(0.424)	(0.210)	(0.054)	(0.128)	(0.091)	(0.055)	(0.173)	(0.076)
ROA	-0.585	-1.653***	0.529	(-1.031***)	-0.139	-0.320**	0.079	-0.219**	0.866**	0.303**
	(0.412)	(0.460)	(1.606)	(0.322)	(0.116)	(0.138)	(0.262)	(0.109)	(0.374)	(0.133)
Stock return	-0.058	-0.114	0.038	-0.027	-0.01	-0.053	0.019	-0.009	-0.056	-0.03
	(0.054)	(0.129)	(0.119)	(0.072)	(0.016)	(0.033)	(0.019)	(0.017)	(0.065)	(0.022)
Board size	0.134***	0.066*	0.043	0.125***	-0.083***	-0.086***	-0.079***	-0.096***	-0.001	0.009
	(0.025)	(0.038)	(0.054)	(0.024)	(0.007)	(0.011)	(0.011)	(0.007)	(0.018)	(0.008)
Board independence	0.015***	0.014**	0.015**	0.018***	-0.015***	-0.012***	-0.009***	-0.017***	0.001	-0.001
	(0.003)	(0.006)	(0.007)	(0.003)	(0.001)	(0.002)	(0.002)	(0.001)	(0.003)	(0.001)
Classified board	-0.078	-0.029	-0.002	0.052	0.005	-0.033	0.025	0.022	0.088	-0.026
	(0.084)	(0.180)	(0.184)	(0.084)	(0.023)	(0.054)	(0.042)	(0.026)	(0.070)	(0.026)
Duality	0.045	0.001	0.237	0.153*	0.024	0.028	0.051	0.049**	-0.028	-0.035
	(0.081)	(0.154)	(0.191)	(0.078)	(0.021)	(0.043)	(0.037)	(0.023)	(0.065)	(0.030)
CEO ownership	0.080	-0.277***	-0.347***	(0.076)	0.024*	-0.069***	-0.095***	(0.010)	-0.117***	0.072***
	(0.055)	(0.055)	(0.113)	(0.065)	(0.014)	(0.018)	(0.034)	(0.018)	(0.032)	(0.021)
Constant	1.578***	0.047	-2.300**	1.336***	2.437***	1.866***	1.309***	2.644***	-0.111	0.910***
	(0.393)	(0.701)	(1.038)	(0.346)	(0.133)	(0.226)	(0.222)	(0.121)	(0.359)	(0.150)
Observations	468	262	256	484	466	260	256	482	92	468
R-squared	0.726	0.699	0.766	0.784	0.724	0.652	0.701	0.737	0.589	0.324
Adj. R-squared	0.71	0.666	0.739	0.772	0.707	0.613	0.667	0.722	0.425	0.284

Panel C: Negative parent CAR around spinoff announcement

	Board Compensation				Director Compensation					
Variables	Cash	Stock	Options	Total	Cash	Stock	Options	Total	Equity	Cash
Spinoff	0.039	1.965***	1.566***	0.552***	0.11	0.584***	0.246***	0.218**	0.069	-0.244***
	(0.175)	(0.234)	(0.547)	(0.174)	(0.095)	(0.187)	(0.082)	(0.105)	(0.095)	(0.052)
Firm size	0.316***	0.618***	0.228	0.317***	0.037**	0.053	0.039	0.033	0.006	-0.008
	(0.076)	(0.143)	(0.246)	(0.098)	(0.018)	(0.032)	(0.032)	(0.020)	(0.047)	(0.022)
Market-to-book	-0.009	-0.073	-0.052***	-0.028***	-0.004	-0.016	-0.007***	-0.007**	-0.029	0.007***
	-0.007	-0.068	-0.014	-0.006	-0.003	-0.017	-0.002	-0.003	-0.033	-0.002
Leverage	-0.161	-1.22	1.652	-0.501	-0.112	-0.256	0.323	-0.175	-0.588**	0.147
	(0.545)	(0.868)	(1.779)	(0.583)	(0.158)	(0.240)	(0.299)	(0.169)	(0.274)	(0.141)
ROA	-1.016	-3.158**	0.82	-0.429	-0.103	-0.35	0.108	0.035	0.349	-0.266
	(1.190)	(1.202)	(2.735)	(1.266)	(0.244)	(0.418)	(0.454)	(0.280)	(0.389)	(0.277)
Stock return	0.089	0.103	0.283	0.102	0.027	-0.026	0.024	0.021	0.139	-0.008
	(0.065)	(0.113)	(0.281)	(0.079)	(0.039)	(0.026)	(0.044)	(0.040)	(0.135)	(0.023)
Board size	0.160***	-0.086	-0.075	0.145***	-0.075***	-0.063**	-0.101***	-0.088***	-0.067**	0.004

	(0.042)	(0.073)	(0.152)	(0.054)	(0.010)	(0.025)	(0.023)	(0.011)	(0.027)	(0.011)
Board independence	0.036***	0.027***	0.080***	0.047***	-0.015**	-0.020**	0.001	-0.015**	0.002	-0.005***
	(0.007)	(0.008)	(0.021)	(0.007)	-0.006	(0.010)	(0.003)	(0.007)	(0.004)	(0.001)
Classified board	-0.257	-0.378	-1.848***	-0.464**	-0.063	-0.053	-0.306***	-0.101*	-0.077	0.099*
	(0.163)	(0.363)	(0.642)	(0.215)	(0.041)	(0.084)	(0.087)	(0.053)	(0.124)	(0.056)
Duality	-0.11	-0.176	-0.864	-0.16	0.065	0.074	-0.125	0.076	-0.204**	0.008
	(0.179)	(0.374)	(0.599)	(0.194)	(0.067)	(0.125)	(0.090)	(0.074)	(0.080)	(0.050)
CEO Ownership	0.202	0.014	11.314	(0.239)	(0.665)	(1.327)	1.110	(0.857)	(1.250)	0.155
	(1.429)	(1.252)	(8.181)	(1.234)	(0.734)	(0.970)	(1.144)	(0.714)	(1.600)	(0.408)
Constant	-0.643	-1.024	-1.243	-0.469	2.407***	2.306***	1.452***	2.707***	1.221**	0.932***
	(0.712)	(1.178)	(3.428)	(0.778)	(0.485)	(0.654)	(0.531)	(0.539)	(0.582)	(0.188)
Observations	158	84	98	158	158	84	98	158	38	158
R-squared	0.551	0.554	0.399	0.580	0.418	0.478	0.514	0.415	0.655	0.297
Adj. R-squared	0.517	0.486	0.322	0.548	0.374	0.399	0.451	0.371	0.503	0.244

ESSAY 2
CHIEF EXECUTIVE OFFICE GENDER AND CORPORATE BOARD STRUCTURES

1. Introduction

In recent years, women have made strides in cracking the glass ceiling in leadership positions in corporate America. Female CEOs have been appointed not only in female-friendly industries such as healthcare and consumer products but also in fields that are traditionally dominated by their male counterparts such as energy, utilities or automotive. The number of female CEOs leading S&P 500 companies reached a record high in 2016 with 27 women at the helm of these firms. However, women CEOs only make up 5.4% of the total S&P 500 CEO positions. Despite the gender gap, the increase in the number of female leaders has attracted substantial attention. Credit Suisse and Fortune, for example, report firms with female leadership in the C-suite and in the board room outperform their peers in stock returns.[5] Oakley (2000) highlights that companies are actively trying to increase females in management roles. Academic research such as Eagly and Carli (2003), Krishnan and Park (2005), and Conyon, He and Zhou (2015) document evidence that women possess more effective leadership styles and have better management skills.

[5] Shaffer, L. (2016, September 25). Female CEOs, board members super-charge company returns | Credit Suisse report. Retrieved from http://www.cnbc.com/2016/09/25/female-ceos-board-members-super-charge-company-returns-credit-suisse-report.html

Wechler, P. (2015, March 3). Women-led companies perform three times better than the S&P 500 | Fortune.com. Retrieved from http://fortune.com/2015/03/03/women-led-companies-perform-three-times-better-than-the-sp-500/

Nevertheless, studies of the so called "woman effect" are highly desirable to explain the connection between female leadership and corporate success. Our paper contributes to the current literature by examining gender differences in corporate governance, particularly in the characteristics of the boards of directors.

In finance, a growing body of research shows that gender matters in terms of value enhancing decision making. Huang and Kisgen (2013) document that male executives carry out more acquisitions and issue more debt than their female counterparts, consistent with men being more overconfident than women. Thus, their findings support the notion that women are better corporate decision makers. Faccio, Marchica and Mura (2016) document that firms run by female CEOs have lower leverage, less volatile earnings, and a higher chance of survival than male CEO firms.

Since corporate governance helps mitigate agency conflicts between managers and shareholders of the firm (Jensen and Meckling 1976), a good governance system is believed to enhance firm value. Papers by Gompers, Ishii and Metrick (2003), Bebchuk, Cohen and Ferrell (2009), Larcker, Richardson and Tuna (2007), to name a few, are largely accepted as establishing a positive link between corporate governance and firm performance. Fich and Slezak (2008) find that effective governance can help distressed firms avoid bankruptcy. Generally, the suggestion is that more or better monitoring is positively related to firm performance.

We focus on what is viewed as the most important governance mechanism for shareholders. The board of directors are trusted with monitoring and advising the firm's management and protecting shareholders' interests. Various studies have linked board characteristics such as a smaller board size (Yermack 1996, Core, Holthausen and Larcker 1999, Cheng 2008), more independent directors (Cotter, Shivdasani and Zenner 1997, Weisbach 1988),

more female directors (Adams and Ferreira 2009), lower interlocked directorships (Hallock 1997), separation of the CEO and chairman role (Jensen 1993), and director attendance (Adams and Ferreira 2012) with quality governance. While the literature has explored mechanisms that are associated with effective governance, the question of whether behavioral differences, associated with the gender of the CEO, play a role in shaping monitoring structures has not be addressed. Thus, our paper examines whether the "woman effect" in corporate decisions and performance extends to board structures. Essentially, we explore whether behavioral differences between men and women may lead to different board structures.

While the nominating committee of the board has direct control over changes to board structure, prior literature suggests that CEOs also effect the structure of the board. In Hermalin and Weisbach (1998), the CEO and the board of directors negotiate to determine the intensity of board monitoring. Shivdasani and Yermack (1999) and Coles, Daniel, and Naveen (2014) show that CEOs have significant influence on the composition of the board. Thus, board structure is likely influenced by the CEO as well as the board itself.

Whether female CEOs are associated with boards structured for more or less monitoring is an empirical question. For example, many gender-based behavioral differences between men and women may suggest that female CEOs would be linked to greater monitoring. Niederle and Vesterlund (2007) and Vandergrift and Yavas (2009) report that women perform worse than men at the negotiation table. Basic agency theory would suggest that all CEOs prefer less monitoring. Thus, if females are less savvy negotiators, they may not bargain as effectively with respect to board structure. Likewise, differences in overconfidence may lead to greater board monitoring. A male CEO may overestimate his ability and underestimate the role of board monitoring, thus he may seek to reduce board monitoring relative to a less overconfident female CEO. Stereotyping

and/or discrimination on the part of the board may motivate directors to force stricter monitoring on the CEO (Krishnan and Park 2005). In contrast, gender-based differences may be associated with less monitoring of female CEOs. To illustrate, overconfidence may also suggest that boards would be less inclined to intensely monitor female CEOs. As Huang and Kisgen (2013) note, less overconfident female CEOs may make better corporate decisions than their male counterparts. Krishnan and Park (2005) contend that women have more effective leadership skills. These interpretations would suggest less need for strong board monitoring at firms with a female CEO. Finally, it is also possible that male and female CEOs will not differ in terms of board structures. Essentially, females that make it to the top of a publicly traded firm may exhibit very similar behavioral characteristics as their male counterparts. Atkinson, Baird, and Frye (2003) and Johnson and Powell (1994) find that male and female professional managers exhibit similar performance and decision making. Similarly, Mohan and Chen (2004) find that IPOs led by males and females are priced similarly.

Using a sample of publicly traded firms in the U.S. from 1996 to 2013, we find that female CEOs are associated with boards of directors that are smaller, consist of more independent directors, are more gender diversified and are in general structured for more intense monitoring of the CEOs relative to the industry median. Thus, our findings suggest that gender-based behavioral differences result in female-led firms having greater monitoring intensity.

As with other studies of female executives, our study faces the challenge of a small female CEO sample size and a selection problem where some firms with certain characteristics may prefer female CEOs. In order to address these concerns, we rely on techniques that are widely accepted in the current literature, including propensity score matching, difference-in-difference and endogenous matching of CEOs and firms using Heckman (1979)'s two stage least squares. Our

results are robust under these techniques and support our hypothesis that female CEO boards are structured for more monitoring. While establishing causality is difficult, our difference-in-difference results show that firms experiencing a male-to-female CEO transition increase monitoring more than firms that transition from a male CEO to another male CEO. In general, we provide strong evidence that female CEOs are associated with board of directors that are significantly different in structure from their male counterparts and the results are consistent with gender-based behavioral differences.

Our paper contributes to the literature in several ways. Our study is the first to examine the relationship between the gender of the CEO and the structure of the board of directors. Prior corporate governance research has focused mostly on gender diversity in the boardroom (Erhardt, Werbel, and Shrader 2003, Adams and Ferreira 2009, Carter, D'Souza, Simkins and Simpson 2010, Ahern and Dittmar 2012, Matsa and Miller 2013, Levi, Li and Zhang 2014) rather than on the CEO gender. We examine various characteristics of the board of directors and propose an aggregate measurement of board monitoring which is benchmarked against the industry median. Our findings suggest that gender-based behavioral differences lead to greater monitoring intensity at firms with a female CEO. While it is difficult to establish causality, even an association between the gender of the CEO and firm board structures is interesting and missing from the literature.

The rest of the paper is organized as follows. In section 2, we provide a review of the literature looking at executive behaviors and corporate decisions and the relationship between the CEO of firm and its corporate board structures. In the third section, we propose our hypotheses. Section 4 presents the data, methodology, results then section 5 concludes.

2. Motivation

2.1. Executive Behavioral Traits and Corporate Decisions

The extant literature in finance has documented that managerial behaviors have significant impact on corporate decisions and performance. Betrand and Schoar (2003), for example, report that manager fixed effects are important for various corporate decisions such as investment, financial, and organizational practices. Tracking top managers when they move to different firms over time, the paper concludes that managerial fixed effects help fill the unexplained heterogeneity gap in firm performance after controlling for firm and time factors. Adams, Almeida and Ferreira (2005) examine powerful CEOs who have greater influence on firm decisions and find that these firms have higher performance variability. The authors argue that since the risk from judgement errors is not well diversified, the more powerful the CEO, the higher the variation in firm performance. Bennedson, Perez-Gonzalez and Wolfenzon (2009) find that CEOs do matter for firm performance since their deaths or distractions from immediate family deaths negatively impact firm performance. More recent studies such as Kaplan, Klebanov and Sorensen (2012) and Graham, Harvey and Puri (2013) examine managerial behavioral traits more comprehensively from detailed assessments of candidates for the CEO positions and surveys of U.S. and non-U.S. CEOs. Kaplan et al. (2012) find that subsequent performance of corporations involved in buyout and venture capitalist transactions depend positively on the CEO's general ability and execution skills. Graham et al. (2013) report that the CEO's optimism and risk-aversion affect corporate financial decisions and acquisitions. Thus, the literature highlights the importance of CEO traits in decision-making.

Gender is also emerging as an important trait that affects behavior. Eagly, Karau, and Makhijani (1995) suggest that women leaders behave differently from male leaders and are more

effective at certain tasks. Eagly and Johnson (1990) find that women leaders are more democratic and participative and less autocratic than male leaders. Eagly and Carli (2003) extend this to show that female leaders are less hierarchical and more cooperative and collaborative. Nielson and Huse (2010) contend that women leaders are better at strategic control tasks, which include monitoring managerial decisions regarding firm strategy as well as organization practices and policies. Mohan and Chen (2004) suggest that there are differences between male and female leaders in terms of management style, risk aversion, investment strategies, and financial decision-making.

In finance, the literature has largely focused on gender differences in terms of risk aversion and overconfidence and provides evidence that such differences do exist at the top of the corporation. Martin, Nishikawa, and Williams (2009) report that changes in both firm total risk and idiosyncratic risk following a female CEO appointment are significantly smaller than following a male CEO appointment. Khan and Vieto (2013) similarly find that firm risk levels are lower when the CEO is female. More recently, Faccio, Marchica and Mura (2016) find that firms run by female CEOs have lower leverage, less volatile earnings, and a higher chance of survival than firms with male CEOs. Liu, Wei, and Xie (2016) find that female CFOs engage in less earnings management than male CFOs. Huang and Kisgen (2013) argue that female CEOs and CFOs are less overconfident thus undertake fewer acquisitions and issue debt less often than their male counterparts. They find other supporting evidence in earnings forecasts and stock option exercises that are consistent with gender differences in overconfidence.

Thus, the behavioral literature largely supports the argument that executive behavior is a significant factor that helps explain variation in corporate decisions and performance. Further, gender is an important channel. We contribute to the understanding of this larger literature on

executive behavior by examining the relationship between the gender of the CEO and corporate board structures.

2.2. The Chief Executive Officer and the Composition of the Board of Directors

The contractual view of firms developed by Jensen and Meckling (1976) emphasizes the negotiation process between shareholders and managers of the firm. Extending this contractual view, Hermalin and Weisbach (1998) propose that the CEO not only negotiates compensation but also the structure of the board that monitors him or her. In this dynamic setting, the structure of the board of directors is endogenously determined and is dependent on the power balance between the board and the CEO. According to Hermanlin and Weisbach (1998), the board of directors is trusted with one of the most important tasks, namely the hiring/firing of management. While firm performance provides a signal of the CEO's ability, the monitoring intensity of the board also leads to better decision making by allowing the board to obtain high quality information with regards to the CEO's performance. Hence, there is a periodic negotiation between the board and the CEO after firm performance is assessed. If the CEO has high (low) bargaining power, the board's monitoring intensity should decline (increase) and CEO compensation should increase (decline).

Empirically, Shivdasani and Yermack (1999) find that when the CEO sits on the nominating committee of the board or when the board does not have a nominating committee, the board employs fewer independent directors and more outsiders with conflicts of interest. Furthermore, they find that investors are aware of the negative effect of the CEO's influence on board structures indicated by a smaller positive stock price reaction when independent directors are appointed for firms that are more prone to the CEO's influence on board composition. Weisbach (1988) finds that after a firm performs poorly, inside board members are more likely to

be replaced by outside board members. Hallock (1997) finds that interlocking directorships, which increase bargaining power, help the CEO increase his control over the board.

In 2002, efforts were made to reduce CEO influence through Sarbanes-Oxley and new listing requirements. For example, exchange listing requirements necessitate nominating committees to be comprised of all independent directors. However, as Coles, Daniel, and Naveen (2014) point out, "CEOs are likely to exert considerable influence on the selection of all board members, including nonemployee directors." They note that CEOs still approve the slate of directors voted on by the shareholders. Empirically, Coles, Daniel and Naveen (2014) investigate whether board monitoring is negatively related to the number of directors appointed by the CEO and find that as co-option (i.e. the fraction of directors appointed by the CEO on the board) increases, board monitoring decreases. Schmidt and Fahlenbrach (2017) contend that executives can rapidly influence the board after a change in the balance of power at the firm.

Thus, the literature suggests that both the board and the CEO influence the structure of the board. Given the CEO likely has some power to alter board structures, CEO behavioral traits are also likely to matter. Alternatively, the board of directors might find it necessary to structure itself differently given the differences in behaviors between female and male CEOs.

3. Hypotheses

3.1. Gender-based Behavioral Hypotheses

Given that significant gender-based behavioral differences are well documented, we expect that such differences may affect the way a CEO shapes or negotiates for his or her board. Studies in psychology document that women underperform men in negotiations. Niederle and Vesterlund (2007) and Vandergrift and Yavas (2009), for example, report that a female has a lower probability relative to a male to select into a negotiation. Once on the negotiation table, females tend to be

more cooperative and ask for less (Eckel, Oliviera, and Grossman 2008). Kray and Thompson (2004) highlight that prior literature in psychology and management supports their conclusion that men outperform women in mixed-gender negotiations. They stress that stereotypical masculine traits, such as assertiveness, independence, and rationality, are valued at the bargaining table. Females tend to act emotionally, with concern for others, and passively, making them more accommodating and less competitive in a bargaining situation. Furthermore, female CEOs may face more constraints when negotiating with the board due to such barriers as a lack of mentoring, exclusion from informal networks, and commitment to family and personal responsibilities (Catalyst 2004). These studies would suggest that a female CEO's weaker bargaining power would lead to a board of directors being structured for higher monitoring intensity.

A similar hypothesis can be developed relying on the overconfidence literature. Huang and Kisgen (2013) use gender as a measure of overconfidence, where women are less overconfident than men. With the overconfidence explanation, a male CEO overestimates his ability and underestimates the role of board monitoring, thus he seeks to reduce board monitoring relative to a less overconfident female CEO. Previous literature shows that overconfident CEOs tend to overestimate project returns (Malmendier and Tate 2005), overpay in acquisitions and make poor merger decisions (Malmendier and Tate 2008), forecast earnings with narrower bound (Huang and Kisgen 2013), and underestimate the need for preventive measurements such as internal controls (Chen, Lai, Liu and McVay 2014). Male CEOs, who should be more overconfident of their abilities, prefer less board oversight than female CEOs, who may be more welcoming to the monitoring from the board.[6]

[6] While we cannot truly disentangle whether bargaining power or overconfidence leads to the differences, we follow Faccio, Marchica, and Mura (2016) as well as Nielson and Huse (2010) and treat these non-mutually exclusive explanations as gender-based differences.

Hence, our first gender-based hypothesis predicts that:

H1: Gender-based differences with a female CEO leads to her board of directors being structured for higher monitoring intensity relative to a male CEO's board of directors.

Alternatively, since female CEOs are less overconfident, the board of directors may find it unnecessary to monitor a female CEO as closely. An overconfident manager tends to overestimate a project's net present values, as a result, he or she has an increased likelihood to undertake value destroying transactions. For example, Malmendier and Tate (2005), and Malmendie, Tate and Yan (2011) find overconfidence leads to CEOs making distorted investment and financing decisions where their investment decisions are oversensitive to the project's cash flows and their financing decisions are over-concentrated in internal financing resources. Since men are more overconfident than women (Lundegerg, Fox, and Punccohar 1994), Huang and Kisgen (2013) show that female CEOs and CFOs make better corporate finance decisions by issuing debt less often and make fewer acquisitions than their male counterparts. Female CEO's board, therefore, may not monitor a female CEO as intensely as the board of directors of a relatively more overconfident male CEO.

Thus, we conjecture an alternative to our gender-based hypothesis:

H1A: Gender-based differences with a female CEO leads to her board of directors being structured for less monitoring intensity relative to a male CEO's board of directors.

3.2. Null Hypothesis

Jensen and Meckling's (1976) agency theory considers corporate governance a crucial mechanism to ensure shareholder's rights and benefits are protected. The board of directors is trusted with the task of monitoring the manager of the firm and providing remedies to the agency problems. Under the agency framework, any agent would dislike being monitored by the board of

directors. Essentially, there would be no differences based on gender. Indeed, several studies suggest that females who rise to the top of their field or industry do not differ significantly from males. Atkinson, Baird, and Frye (2003) do not find any significant differences between male and female fund managers in terms of performance or risk. Johnson and Powell (1994) contend that male and female managers display similar risk propensity and make decisions of equal quality. Nguyen, Hagendorff and Eshraghi (2015) find that executive gender is not linked to measureable firm value effects in the banking industry. Mohan and Chen (2010) find no differences in firm characteristics between female-led and male-led IPOs.

Thus, it is also possible that we find no differences between board monitoring intensities of female-led and male-led firms:

HN: Monitoring intensity will be similar at female-led and male-led firms.

4. Data, Methodology and Empirical Results

4.1. Data

4.1.1. Sample

Our sample spans from 1996 to 2013. Governance variables are collected from ISS (formerly Risk Metrics). CEO compensation and human capital characteristics are collected from Compustat ExecuComp. Firm specific financial information is collected from Compustat Fundamentals. Stock returns are collected from CRSP. We follow Huang and Kisgen (2013) and require that CEOs be in power for at least three years. This ensures that CEOs have significant time to affect corporate governance structures or the board of directors has sufficient time to alter its structures to fit the firm's CEO. Merging data from ISS, Compustat, and CRSP and eliminating interim CEOs result in 28,159 firm-year observations of which 2.1% belong to female CEOs, consistent with Huang and Kisgen (2013). Table 1 reports the number of female CEOs in our

sample from 1996 to 2013. The increase in women CEOs is noticeable yet the proportion of female CEOs in our final sample in a given year never exceeds 3.5%.

4.1.2. Board characteristics

The corporate governance literature provides various aspects to measure board monitoring intensity. Boards with fewer directors (Jensen 1993, Raheja 2005), a higher fraction of independent directors (Weisbach 1988, Hermalin and Weisbach 1998), a higher fraction of female directors (Adam and Ferreira 2009), a lower proportion of interlocked directors (Hallock 1997), better director attendance (Adam and Ferreira 2012), and a chairman different from the firm CEO (Jensen 1993) are believed to monitor the CEO's activities more intensely. Hence, we consider several dimensions of board structures. Specifically, we investigate the number of directors on the board (log of board size), the percentage of independent directors (board independence), the percentage of female directors excluding the female CEO if the female CEO serves as director of the firm (board diversification), the percentage of interlocked directors (board interlock), whether all directors attend 75% of board meetings (attendance), and whether the CEO also serves as the chair of the board (duality).

In order to consolidate the overall monitoring power of the board and take into account peer effects in corporate governance (John and Kadyrzhanova 2008), we construct an aggregate board monitoring measurement which is the sum of six monitoring indicators benchmarked against the industry median. Small board equals 1 if the number of directors sitting on board is less than or equal to the industry median. High independence equals 1 if the percentage of independent directors is greater than or equal to the industry median. High diversification equals 1 if the percentage of female directors (excluding the female CEO if she also serves as director of the firm) is greater than or equal to industry median. Low interlock equals 1 if there is no interlocked director

sitting on board. Board attendance is already in binary format and equals 1 if all board members attend at least 75% of board meetings. CEO/Chairman separation equals 1 if the CEO is not the chairman of the board. Thus, an aggregate board monitoring with a value of 6 indicates the highest monitoring intensity and an aggregate board monitoring of 0 implies the lowest monitoring relative to industry practices. It is important to note that the aggregate board monitoring shows the overall monitoring intensity of the board of directors based on the comparison of various dimensions of the board structure against the industry norm while other "raw" measurements of board compositions are not benchmarked against the industry norm. Thus, a high aggregate board monitoring measurement indicates high monitoring relative to the industry practice.

4.1.3. Control variables

We control for observable firm and CEO characteristics following previous literature. Particularly, firm size is measured by the natural log of total assets, leverage is calculated as the ratio of firm long-term debt and total assets, market-to-book ratio is calculated as the ratio of market value to book value of firm. We also control for firm performance using return on assets (ROA) and stock return volatility measured as the standard deviation of previous five year monthly stock returns. We also control for firm complexity using the number of segments reported in firm's financial reports. We control for CEO characteristics using CEO age, CEO tenure, whether the CEO serves as a director on the board of the firm (proxy for CEO's influence over board structures), and the percent shares owned by the CEO. In the CEO transition tests, we control for forced and voluntary turnover based on CEO age where we define Forced turnover equal one if the CEO is younger than 60 years old in the transition year, following Coles, Daniel and Naveen (2014).

Table 2 reports summary statistics for all variables. All of the significant differences in means of board structure variables between male and female CEOs are consistent with female CEOs having higher board monitoring intensity or our gender-based behavioral hypothesis (H1). Specifically, female CEOs are associated with significantly smaller boards with more independent directors. Female CEO boards are more gender diversified with less interlocking directors. Female CEOs are less likely to also serve as the board chair. Directors have better attendance at female led firms. Finally, the aggregate board monitoring is significantly higher for female CEO firms, indicating that female led firms have higher overall monitoring relative to industry medians.

In terms of firm characteristics, female CEOs tend to manage smaller firms with lower market-to-book ratios and higher stock return volatility. Female CEOs are on average younger in age and have shorter tenure compared to male CEOs.

4.2. Methodology and Empirical Results

4.2.1. Panel data regression with year fixed effects and standard errors clustered by firm

To examine the relation between CEO gender and corporate board structures, we first run OLS regressions of board size, board independence, board gender diversification, board interlock and the aggregate board monitoring on a CEO gender dummy variable, Female (equal 1 for female CEO and 0 for male CEO), and all control variables with year fixed effects. Year fixed effects control for factors that affect all firms in a specific year, for example, the tech bubble of 2000, the passage and implementation of the Sarbanes-Oxley act in 2002, and the financial crisis of 2008, 2009. We cluster standard errors by firms so that these standard errors are adjusted for the correlation within firm. For board attendance and duality, we use logistic regressions with year dummy variables and also cluster standard errors by firm.

The results are reported in Table 3. The gender of the CEO impacts board structures in a consistent way with increased board monitoring, supporting our H1 hypothesis. Specially, female CEOs are associated with boards that are smaller, more independent, and more gender diversified. Using our aggregate board monitoring the Female dummy variable is positive and statistically significant at the 1% level. These results support of our gender behavioral hypothesis where the boards of female CEOs are structured for more monitoring than boards of male CEOs. We also note that like prior literature firm size, CEO age, CEO tenure, CEO ownership and other firm characteristics are also important determinants of board monitoring.

Even though the OLS regression with year fixed effects and within-firm clustered standard errors signifies a relationship between the monitoring capacity of board and the gender of the CEO, the interpretation of the OLS results is limited in several ways. First, a small female CEO sample size limits the robustness of the results. Second, the significant association between CEO gender and board characteristics may be interpreted as certain boards having a preference for female CEOs over their male counterparts. It is also possible that female CEOs may self-select into firms with such board structures. We thus continue with different methodologies to address these concerns.

4.2.2. Propensity score matching

We first utilize a propensity score matching sample to address the potential bias we have from a small sample of female CEOs.[7] The propensity score matching procedure allows us to identify one matched male CEO firm for each female CEO firm in the sample based on observable firm characteristics and CEO characteristics. Our matched sample thus consists of firms that are similar with gender of the CEO being the only significant difference. One advantage of this

[7] Note that Huang and Kisgen (2013) use female CEOs and CFOs to increase their sample size. However, since we are examining governance, CFOs are less likely to exhibit significant control over board structures.

methodology is that each female CEO firm-year observation is compared to the most similar male CEO firm-year observation from the full sample, thus differences (if significant) are closely controlled for. This approach should minimize concerns with the relatively small sample of female CEO firms since they are matched to similar male led firms.

We determine the matched male CEO sample by calculating the propensity of a firm run by a female CEO given firm and CEO characteristics and use nearest neighbor matching to determine one best match for female CEO observations. In Panel A of Table 4, the propensity score is calculated based on firm characteristics (firm size, ROA, firm leverage, market-to-book ratio, stock return volatility) within the same industry (Fama and French 48 industry classifications) and year. In Panel B of Table 4, we also include CEO age, tenure and whether the CEO serves as a director of the board in the propensity score calculation.

Consistent with the results reported in Table 3, the propensity score matching sample results show that female CEOs have significantly smaller boards with higher independence, higher gender diversification and higher aggregate board monitoring using both approaches for matching. Again the results are consistent with our gender-based behavioral hypothesis H1. Female CEOs are associated with greater board monitoring.

4.2.3. Difference-in-differences regression for CEO transition sample

Although the panel data regressions show significant association between the gender of the CEO and board characteristics, the finding can be interpreted as certain boards with such characteristics choose to appoint female CEOs. We thus utilize difference-in-differences to detect changes in board structures following the firm's transition into a new CEO. The difference-in-differences framework allows us to observe not only changes but also the direction of the changes in board characteristics after a new CEO takes control of the firm.

From the full sample, we identify the year when a new CEO appears for the first time in the firm proxy and consider this the transition year. We differentiate between two types of transitions based on the gender of the outgoing and incoming CEOs: male-to-female (MF) and male-to-male (MM) CEO transitions. We only differentiate between these two types of transitions since the number of firms are too small in the other two transition types (i.e. female-to-male and female-to-female). In addition, the comparison between firms transitioning from a former male CEO to a new female CEO versus a similar firm that transitions to a new male CEO highlights differences in board structure decisions between the two types of new CEOs. We then identify matched male-to-male transition firms based on the event year (from up to 5 years before till up to 5 years after CEO transition year), industry and firm size for each male-to-female firm observation, since firms experiencing male-to-male CEO transitions greatly outnumber firms experiencing male-to-female CEO transitions.

Table 5 reports the means of board characteristics before and after the CEO transition for our matched transition sample. We observe that there are differences in board characteristics between firms hiring new female CEOs and firms hiring new male CEOs. However, prior to the transition, the differences are generally not statistically significant. Only board diversification is marginally significant prior to the transition, suggesting boards that hire a female CEO do have greater diversity prior to the CEO replacement. This is consistent with Faccio, Marchica and Mura (2016), who argue that boards with more female directors have a greater tendency to hire female CEOs due to networking effects among female executives. Other variables including board size, board independence, board attendance and the aggregate board monitoring are not significantly different between MF and MM firms prior to the transition. However, after the CEO transition, Table 5 shows significant differences between new female CEOs and new male CEOs. New

female CEOs have significantly smaller boards with greater independence and diversity. Board attendance is also significantly greater after a firm transitions to a female CEO. Finally, our aggregate board monitoring measure shows that new female CEOs have significantly more monitoring than new male CEOs. Overall, the univariate differences in board characteristics for the matched transition sample are consistent with H1, where gender-based behavioral differences lead to female CEOs having more monitoring.

Our difference-in-differences specification is appropriate for the cross-sectional and time-series property of the matched transition sample. Following Huang and Kisgen (2013) and Liu, Wei, and Xie (2016), we compare changes in board structures between male-to-female CEO transitions and male-to-male CEO transitions using the following specification:

$$BOARD_{i,t+1} = \alpha + \beta_1 MF_i \times Post_{i,\,t+1} + \beta_2 Post_{i,\,t+1} + \beta_3 Controls_{it} + v_i + \tau_t + \varepsilon_{it} \qquad (1)$$

where $BOARD_{i,t+1}$ is the board structure variable of interest measured at the end of year *t+1* i.e. one year after CEO transition. $Post_{i,t+1}$ is an indicator that takes the value of 1 if year *t+1* is after CEO transition. MF_i is an indicator equal 1 if firm experiences a male-to-female (MF) CEO transition, and 0 if firm experiences a male-to-male (MM) CEO transition. v_i and τ_t are firm and year fixed effects, respectively. Since we include firm fixed effects, it is not necessary to include MF_i by itself in the regression specification. The coefficient β_1 is the difference-in-difference estimator which indicates the difference between the impact of a male-to-female CEO transition on the board structures post transition relative to that of a male-to-male CEO transition.

Table 6 shows results that are again consistent with our hypothesis H1. Compared to a firm that experiences a male-to-male CEO transition, a male-to-female firm has a significantly smaller board that is more independent and more gender diversified post-transition. Male-to-female firms also have a higher aggregate board monitoring compared to male-to-male firms. While the

significance of the coefficient β_1 indicates that for firms that appoint new female CEOs, the changes in board structures are significantly different from changes in board structures of firms that appoint new male CEOs, the sign and magnitude of the coefficient β_1 show the direction and the extent of these board changes in new female CEO firms relative to new male CEO firms. In general, these results can be interpreted as showing that changes in board structures following the appointment of a new female CEO are for more monitoring relative to changes in board structures following the appointment of a new male CEO. We again find supporting and robust evidence to support our first gender-based behavioral hypothesis (H1). We also note that Huang and Kisgen (2013) suggest this difference-in-differences approach allows us to exclude alternate explanations. In other words, this approach reduces the likelihood that our findings are attributed to boards with higher monitoring intensity preferring female candidates. These results focus on changes after the transition, which allows us to better isolate gender behavioral differences with a new female CEO.

4.2.4. Endogenous matching of CEOs and firms

In order to investigate further whether self-selection might explain the association between CEO gender and board structures, we use Heckman (1979)'s two stage least square approach on the full sample. In the first stage, a selection model is set up to capture some selection mechanisms firms might use in selecting a female CEO. As Huang and Kisgen (2013) and Faccio, Marchica and Mura (2016) report, the selection of female CEO varies with a firm's cross-sectional characteristics (especially industry and firm leverage) and CEO human capital characteristics (age). We use a probit regression of hiring a female CEO on pre-transition firm characteristics (firm size, profitability, leverage, stock volatility, market-to-book ratio, gender diversification of the board pre-CEO transition) as well as CEO characteristics and include an exogenous variable which is the state gender equality ranking by Sugarman and Straus (1988). Following Huang and

Kisgen (2013), we posit that firms headquartered in higher gender equality states will be more open towards hiring female CEOs as well as will have more female candidates in the labor market.[8]

The selection model is as follow:

$$Probit\ (Female_{it}=1) = f(stategenderequality_i,\ internal_i,\ boarddiversity_{it-1}, firm\ characteristics_{it-1},\ CEO\ age_{it},\ ,\ industry) \quad (2)$$

Where $stategenderequality_i$ is the rank of the state based on its gender equality index corresponding to firm's headquarter, the lower the ranking, the higher gender equality in that state. *Internal* is a dummy variable equal 1 if the executive joined the company more than one year before he or she was appointed the firm CEO. We also include the firm's board gender diversity in this first stage to control for the possibility that a more gender diversified board pre-CEO replacement would be more likely to hire a new female CEO. Diversified boards may be more open to the idea of hiring a female CEO and/or may be better connected to potential female CEO candidates. In addition, we include year and firm fixed effects to capture unobservable firm characteristics that might influence the decision to hire a female CEO. The first stage probit regression shows some significant capture of the firm - CEO selection process as reported in Panel A of Table 7. In particular, female CEOs are hired at firms which tend to have lower total assets and lower market-to-book ratio. Female CEOs are also younger in age, consistent with Huang and Kisgen (2013). State gender equality ranking has a negative and significant impact on the probability of the firm employing a female CEO, indicating that the higher the gender equality ranking of state where the firm is headquartered, the higher the probability of the firm hiring a

[8] Sugarman and Straus (1988) evaluate U.S. states and assign each a score for its gender status equality. Equality is measured considering economic, political and legal measures.

female CEO. Board gender diversity pre-CEO transition has a positive and significant impact on the likelihood of hiring female CEOs, consistent with Faccio, Marchica and Mura (2016).

In the second stage we calculate the inverse-Mills ratio (*IMR*) from the probit regression then include it the following regression.

$$BOARD_{i,t} = \alpha + \beta_1 Female_{i,t} + \beta_2 IMR_{i,t} + \beta_3 Controls_{i,t} + v_i + \tau_t + \varepsilon_{it} \qquad (3)$$

The coefficient of interest β_1 is then corrected for self-election bias. Since board gender diversity was used in the first stage, we exclude this variable from the second stage regressions. Vector $Controls_{it}$ includes firm characteristics (firm size, ROA, leverage, market-to-book ratio and stock volatility) and CEO characteristics (age, tenure, whether the CEO serves as director in the board of the firm, and CEO ownership).

Panel B of Table 7 reports the second-stage regression results where including the inverse Mill's ratio in all regressions does not alter the significance and direction of the coefficients on the dummy variable *Female* for board size, board independence, board attendance and the aggregate board monitoring regressions. The aggregate board monitoring reported here excludes the board gender diversification measurement since state gender equality is not a good instrument for this particular variable.[9] We utilize the whole sample in this analysis so the small number of female CEO firms is a continuing concern; however, the results continue to support our H1 hypothesis.

5. Conclusion

In this paper, we examine the relationship between CEO gender and the structure of the board of directors. We propose that gender-based behavioral differences may lead to female-led firms having boards with greater monitoring intensity. In general, our results show that female

[9] Results are qualitatively similar if we ignore the problem with the instrument and include board diversity.

CEOs have boards of directors that are structured for more monitoring. Particularly, we find that female CEO boards are smaller, more independent, more gender diversified and have higher aggregate board monitoring relative to the boards of male CEOs.

The results remain significant and consistent using a propensity score matching sample that compares female CEOs to male CEOs, where firms are matched based on firm and CEO characteristics. Further, our results are robust to using a difference-in-difference approach, where our analysis is on newly appointed male and female CEOs. Specifically, we document that after a transition in firm leadership, new female CEOs experience significant increases in board monitoring intensity relative to new male CEOs.

The results do not appear to be the outcome of nonrandom self-selection where certain firms choose to appoint female CEOs. Particularly, after controlling for self-selection, we still find that female CEOs are associated with smaller, more independent, and more attentive boards with greater overall monitoring relative to other firms in the same industry.

Similar to other gender papers, our study may be limited by the relatively small number of female CEOs. However, our results support the emergent evidence in the literature that gender-based behavioral differences exist even at the top levels of management. Female CEOs seem to welcome more board monitoring. Our paper also contributes to the growing body of literature documenting that manager's behavioral traits affect firm decisions.

References

Adams, R. B., Almeida, H., & Ferreira, D. (2005). Powerful CEOs and their impact on corporate performance. *Review of Financial Studies*, *18*(4), 1403-1432.

Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, *94(2)*, 291-309.

Adams, R. B., & Ferreira, D. (2012). Regulatory pressure and bank directors' incentives to attend board meetings. *International Review of Finance, 12*(2), 227–248.

Ahern, K. R., & Dittmar, A. K. (2012). The changing of the boards: The impact on firm valuation of mandated female board representation. *Quarterly Journal of Economics*, *127*(1), 137-197.

Atkinson, S. M., Baird, S. B., & Frye, M. B. (2003). Do female mutual fund managers manage differently? *Journal of Financial Research*, *26*(1), 1-18.

Bebchuk, L., Cohen, A., & Ferrell, A. (2009). What matters in corporate governance? *Review of Financial Studies, 22*(2), 783-827.

Bennedsen, M., Perez-Gonzalez, F., & Wolfenzon, D. (2009) Do CEOs matter? *Working paper (Columbia University)*

Bertrand, M., & Schoar, A. (2003). Managing with style: The effect of managers on firm policies. *The Quarterly Journal of Economics, 118*(4), 1169-1208.

Carter, D. A., D'Souza, F., Simkins, B. J., & Simpson, W. G. (2010). The gender and ethnic diversity of US boards and board committees and firm financial performance. *Corporate Governance: An International Review*, *18*(5), 396-414.

Catalyst, 2004. Women and men in U.S. corporate leadership: Same workplace, different reality? Retrieved from http://www.catalyst.org/knowledge/women-and-men-us-corporate-leadership-same-workplace-different-realities.

Chen, S., Lai, S., Liu, C., & McVay, S.E. (2014) Overconfident managers and internal controls, *Working paper (National Taiwan University).*

Cheng, S. (2008). Board size and the variability of corporate performance. *Journal of Financial Economics, 87*(1), 157-176.

Coles, J. L., Daniel, N. D., & Naveen, L. (2014). Co-opted boards. *Review of Financial Studies, 27(6)*, 1751-1796.

Conyon, M. J., He, L., & Zhou, X. (2015). Star CEOs or political connections? Evidence from China's publicly traded firms. *Journal of Business Finance and Accounting* 42, 412-443.

Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, *51*, 371-406.

Cotter, J. F., Shivdasani, A., & Zenner, M. (1997). Do independent directors enhance target shareholder wealth during tender offers? *Journal of Financial Economics, 43*(2), 195-218.

Eagly, A. H., & Carli, L. L. (2003). The female leadership advantage: An evaluation of the evidence. *The Leadership Quarterly*, *14*(6), 807-834.

Eagly, A.H., Karau, S., & Makhijani, M.G. (1995). Gender and the effectiveness of leaders: A meta-analysis. *Psychological Bulletin, 117*, 125-145.

Eagly, A.H., & Johnson, B. (1990). Involvement and persuasion: Types, traditions, and the evidence. *Psychological Bulletin, 107*, 375-384.

Eckel, C. C., Oliveira, A. C., & Grossman, P. J. (2008). Gender and negotiation in the small: Are women perceived to be more cooperative than men? *Negotiation Journal*, *24*(4), 429-445.

Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of Director Diversity and Firm Financial Performance. *Corporate Governance*, *11*(2), 102-111.

Faccio, M., Marchica, M., & Mura, R. (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. *Journal of Corporate Finance (forthcoming)*.

Fich, E.M., & Slezak, S.L. (2008). Can corporate governance save distressed firms from bankruptcy? An empirical analysis. *Review of Quantitative Finance and Accounting*, 30, 225-251.

Gompers, P. A., Ishii, J. L. & Metrick, A. (2003). Corporate governance and equity prices, *Quarterly Journal of Economics 118 (1),* 1007-155.

Graham, J. R., Harvey, C. R., & Puri, M. (2013). Managerial attitudes and corporate actions. *Journal of Financial Economics*, *109*(1), 103-121.

Hallock, K. (1997). Reciprocally interlocking boards of directors and executive compensation. *Journal of Financial and Quantitative Analysis*, 32(3), 331-343.

Heckman, J. J. (1979). Sample selection as a specification error. *Econometrica*, *47*, 153-161.

Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review*, *88*(1), 96-118.

Huang, J., & Kisgen, D. J. (2013). Gender and corporate finance: Are male executives overconfident relative to female executives? *Journal of Financial Economics*, *108*(3), 822-839.

Jensen, M.C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance, 48*, 831-880.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360.

John, K., & Kadyrzhanova, D. (2008). Peer effects in corporate governance. *Working paper (New York University and Georgia State University).*

Johnson, J., & Powell, P. (1994). Decision making, risk and gender: Are managers different? *British Journal of Management*, *5*(2), 123-138.

Kaplan, S. N., Klebanov, M. M., & Sorensen, M. (2012). Which CEO characteristics and abilities matter? *The Journal of Finance*, *67*(3), 973-1007.

Khan, W. A., & Vieto, J. P. (2013). CEO gender and firm performance. *Journal of Economics and Business*, *67*, 55-66.

Kray, L. J., & Thompson, L. (2004). Gender stereotypes and negotiation performance: An examination of theory and research. *Research in Organizational Behavior*, *26*, 103-182.

Krishnan, H. A., & Park, D. (2005). A few good women – on top management teams. *Journal of Business Research*, 5*8*, 1712-1720.

Larcker, D. F., Richardson, S. A., & Tuna, I. (2007). Corporate governance, accounting outcomes, and organizational performance. *The Accounting Review*, *82*(4), 963-1008.

Levi, M., Li, K., & Zhang, F. (2014). Director gender and mergers and acquisitions. *Jounrnal of Corporate Finance, 28(C)*, 185-200.

Liu, Y., Wei, Z. & Zie, F. (2016) CEO gender and earnings management: Evidence from China. *Review of Quantitative Finance and Accounting*, 46, 881-905.

Lundeberg, M. A., Fox, P. W., & Punccohar, J. (1994). Highly confident but wrong: Gender differences and similarities in confidence judgments. *Journal of Educational Psychology*, *86*(1), 114-121.

Malmendier, U., and G. Tate. (2005) CEO overconfidence and corporate investment. *The Journal of Finance, 60*(6), 2661-2700.

Malmendier, U., and G. Tate. (2008) Who makes acquisitions? CEO overconfidence and the market's reaction. *Journal of Financial Economics,* 89, 20-43.

Malmendier, U., Tate, G., & Yan, J. (2011). Overconfidence and early-life experiences: The effect of managerial traits on corporate financial policies. *The Journal of Finance*, *66*(5), 1687-1733.

Martin, A. D., Nishikawa, T., & Williams, M. A. (2009). CEO gender: Effects on valuation and risk. *Quarterly Journal of Finance and Accounting*, *48*(3), 23-40.

Matsa, M. A., & Miller, A. R. (2013). Female style in corporate leadership? Evidence from quotas. *American Economic Journal: Applied Economics*, *5*(3), 136-169.

Mohan, N. J., & Chen, C. R. (2004). Are IPOs priced differently based upon gender? *Journal of Behavioral Finance*, *5*(1), 57-65.

Nguyen, D.D., Hagendorff, J., & Eshraghi, A. (2015) Can banks prevent misconduct? *Review of Finance*, 20, 1-36.

Niederle, M., & Vesterlund, L. (2007). Do women shy away from competition? Do men compete too much? *Quarterly Journal of Economics*, 122(3), 1067-1101.

Nielson, S. & Huse, M. (2010). The contribution of women on boards of directors: Going beyond the surface. *Corporate Governance: An International Review* 18(2): 136-148.

Oakley, J.G. (2000). Gender-based barriers to senior management positions: Understanding the scarcity of female CEOs. *Journal of Business Ethics 27*, 321-334.

Raheja, C. G. (2005). Determinants of board size and composition: A theory of corporate boards. *Journal of Financial and Quantitative Analysis*, *40*(2), 283-306.

Schmidt, C., & Fahlenbrach, R. (2017). Do exogenous changes in passive institutional ownership affect corporate governance and firm value? *Journal of Financial Economics*. (forthcoming)

Shivdasani, A., & Yermack, D. (1999). CEO involvement in the selection of new board members: An empirical analysis. *Journal of Finance*, *54*(4), 1829-1853.

Sugarman, D. B., & Straus, M. A. (1988). Indicators of gender equality for American states and regions. *Social Indicators Research*, *20*(3), 229-270.

Vandegrift, D., & Yavas, A. (2009). Men, women, and competition: An experimental test of behavior. *Journal of Economic Behavior & Organization*, *72*(1), 554-570.

Weisbach, M. S. (1988). Outside directors and CEO turnover. *Journal of Financial Economics, 20,* 431-460

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics, 40*(2), 185-211.

Tables

Table 2.1 Distribution of female CEOs by year

This table reports the number of female CEOs over the sample period from 1996 to 2013. The data is obtained my merging Compustat Execucomp with Compustat Fundametals and ISS.

Year	Female	% Female
1996	11	0.75%
1997	10	0.67%
1998	15	0.98%
1999	18	1.11%
2000	22	1.36%
2001	24	1.58%
2002	28	1.84%
2003	29	1.82%
2004	31	1.93%
2005	39	2.43%
2006	44	2.55%
2007	51	2.61%
2008	55	2.93%
2009	56	3.04%
2010	59	3.36%
2011	49	3.08%
2012	41	2.95%
2013	12	2.60%
Total	594	2.11%

Table 2.2 Summary statistics

This table reports summary statistics for the full sample consisting of 28,159 firm-year observations from 1996 to 2013. *Board size* report here is the number of directors sitting on board. *Board independence* is calculated as the proportion of independent directors on board. *Board diversification* is the proportion of female directors (excluding female CEO) on board. *Board interlock* is the proportion of interlocked directors sitting on board. *Duality* equal 1 if the CEO is also the chairman of the board and 0 otherwise. *Board attendance* equal 1 of all directors attend at least 75% of board meetings in the year. *Aggregate board monitoring* is the sum of six indicators: *small board* equal 1 if the number of directors is lower than or equal industry median, *high independence* equal 1 if the proportion of independent directors is higher than or equal to industry median, *high diversification* equal 1 if the proportion of female directors sitting on board is higher than industry median, *low interlock* equal 1 if the proportion of interlocked directors on board is smaller than industry media, *duality* and *board attendance*. *Firm size* is measured by the natural log of firm total assets, *ROA* is the ratio of net income over total assets, *firm leverage* is the ratio of long-term debt over total assets, *market-to-book ratio* is calculated as the ratio of firm market value to book value. *Stock return volatility* is measured as the standard deviation of firm stock return in the previous five years. ***, ** and * denote significance at 1%, 5% and 10% respectively.

	Full Sample			Female CEOs	Male CEOs	
	Mean	Median	Std. Dev.	Mean	Mean	Diff.
Board structures						
Board size	9.525	9.000	2.740	8.666	9.542	***
Board independence	0.706	0.760	0.165	0.746	0.705	***
Board diversification	0.099	0.100	0.094	0.129	0.096	***
Board interlock	0.004	0	0.026	0.002	0.005	*
Duality	0.312	0	0.463	0.276	0.313	***
Board attendance	0.915	1	0.279	0.955	0.914	***
Aggregate board monitoring	2.405	3	1.024	3.125	2.391	***
Firm characteristics						
Firm size - Ln(total assets)	1.997	2.007	0.244	1.956	1.997	***
Return on Assets (ROA)	0.029	0.043	0.506	0.025	0.030	
Firm leverage	0.192	0.158	0.193	0.187	0.192	
Market-to-book ratio	3.276	2.086	41.030	2.000	3.348	**
Stock return volatility	0.124	0.109	0.065	0.135	0.124	***
CEO characteristics						
Female CEOs	0.021	0	0.144			
Age	55.605	56	7.482	52.802	55.665	***
CEO tenure	7.575	5	7.343	5.813	7.614	***
CEO serving as director	0.976	1	0.153	0.985	0.976	

Table 2.3 Panel data with year fixed effects and standard errors clustered by firm

This table reports regression results of board structures on firm and CEO characteristics, controlling for year fixed effects and within-firm clustered standard errors. Regressions of board size (ln(number of directors)), board independence, board diversification, board interlock and aggregate board monitoring are OLS. Regressions of board attendance and duality are logistic. Dummy variable Female equal 1 if the CEO of the firm is a woman and 0 otherwise. Standard deviations are clustered by firm and are in parentheses. ***, ** and * denote significance at 1%, 5% and 10% respectively.

Variables	Board size	Board independence	Board diversification	Board interlock	Board attendance	Duality	Aggregate board monitoring
Female	-0.034***	1.616**	3.049***	0	0.226	0.245*	0.514***
	(0.01)	(0.80)	(0.46)	(0.00)	(0.22)	(0.13)	(0.05)
Firm size	0.605***	8.872***	11.477***	0.003***	-1.716***	2.475***	-0.500***
	(0.01)	(0.67)	(0.38)	(0.00)	(0.14)	(0.11)	(0.04)
ROA	-0.047***	-1.948**	0.399	0	0.278*	-0.511***	0.03
	(0.01)	(0.80)	(0.46)	(0.00)	(0.15)	(0.13)	(0.05)
Leverage	-0.041***	-0.479	-0.985**	-0.001	0.152	-0.292***	0.011
	(0.01)	(0.72)	(0.41)	(0.00)	(0.16)	(0.11)	(0.05)
Market-to-book	0	0.004	0.002	0	-0.001	0.001	0
	0.00	(0.00)	(0.00)	0.00	(0.00)	(0.00)	0.00
Stock volatility	-0.622***	-8.486***	-11.279***	-0.009**	2.051***	0.09	0.776***
	(0.04)	(2.58)	(1.47)	(0.00)	(0.57)	(0.38)	(0.16)
Number of segments	0.002***	0.060***	0.021**	0	0.001	-0.005**	-0.001
	0.00	(0.02)	(0.01)	0.00	(0.00)	(0.00)	(0.00)
CEO age	0.002***	0.004	0.006	0.000***	0.009**	0.056***	-0.006***
	0.00	(0.02)	(0.01)	0.00	(0.00)	(0.00)	(0.00)
CEO tenure	-0.002***	-0.198***	-0.121***	0.000*	-0.017***	0.065***	-0.006***
	0.00	(0.02)	(0.01)	0.00	(0.00)	(0.00)	(0.00)
CEO serving as director	0.041***	0.674	2.346***	-0.002	0.019	-0.058	0.064
	(0.01)	(0.91)	(0.52)	(0.00)	(0.27)	(0.16)	(0.06)
CEO ownership	-0.205***	-40.184***	-1.589	0.002	0.996**	1.079***	-0.614***
	(0.03)	(1.89)	(1.08)	(0.00)	(0.42)	(0.32)	(0.12)
Constant	1.042***	41.460***	-20.007***	0	4.348***	-16.116***	2.708***
	(0.03)	(1.96)	(1.12)	(0.00)	(0.46)	(1.07)	(0.12)
Observations	16,360	16,360	16,360	21,692	21,692	18,739	16,445
R-squared	0.402	0.286	0.238	0.033			0.24
Adj. R-squared	0.4	0.284	0.236	0.031			0.238
Pseudo R-squared					0.078	0.378	

Table 2.4 Propensity score matching estimates

In this table, we identify a control sample of male CEO firms using a propensity score matching procedure. The propensity score is estimated within industry and year, using all firm characteristics (panel A) and CEO characteristics (panel B). Each female CEO firm observation is matched with one male CEO firm observation using nearest neighbor matching. We then compare board structures between the two groups of firms and report the differences here. ***, **, and * denote significance at 1%, 5% and 10% respectively.

Panel A: Propensity score matching based on firm characteristics within industry and year

	Number of observation	Female CEO vs. Male CEO	p-value	
Board size	766			
Female CEOs		-0.047	0.006	**
Board independence	766			
Female CEOs		0.017	0.075	*
Board diversification	766			
Female CEOs		3.017	0.000	***
Board interlock	1188			
Female CEOs		0.001	0.368	
Board attendance	1188			
Female CEOs		0.013	0.361	
Duality	1188			
Female CEOs		-0.038	0.151	
Aggregate board monitoring	716			
Female CEOs		0.462	0.000	***

Panel B: Propensity score matching based on firm characteristics and CEO characteristics within industry and year

	Number of observation	Female CEO vs. Male CEO	p-value	
Board size	766			
Female CEOs		-0.048	0.004	**
Board independence	766			
Female CEOs		0.020	0.046	*
Board diversification	766			
Female CEOs		2.472	0.001	***
Board interlock	1188			
Female CEOs		0.000	0.476	
Board attendance	1188			
Female CEOs		0.007	0.585	
Duality	1188			
Female CEOs		-0.017	0.543	
Aggregate board monitoring	716			
Female CEOs		0.374	0.000	***

Table 2.5 Summary of board characteristics before and after CEO transition

This table presents the means of board characteristics before and after CEO transitions. We compare male-to-female (MF) CEO transitions with matched male-to-male (MM) transitions. ***, ** and * denote significant differences at 1%, 5% and 10% respectively.

Variables		M F	MM	
Board Size				
	Pre-transition	9.36	9.52	
	Post-transition	9.69	10.34	**
Board Independence				
	Pre-transition	66.93%	66.99%	
	Post-transition	78.15%	74.22%	***
Board Diversification				
	Pre-transition	15.23%	9.50%	*
	Post-transition	17.10%	12.10%	**
Board Interlock				
	Pre-transition	0.40%	0.75%	
	Post-transition	0.00%	0.22%	
Attendance				
	Pre-transition	0.96	0.88	
	Post-transition	0.94	0.92	**
Duality				
	Pre-transition	0.45	0.42	
	Post-transition	0.33	0.28	
Aggregate board monitoring				
	Pre-transition	3.06	2.73	
	Post-transition	3.24	2.91	***

Table 2.6 Difference-in-differences regressions of transition sample

This table reports difference-in-differences regressions of firms that experience CEO transitions in the sample period, comparing firms experiencing male-to-female CEO transition (MF=1) with firms experiencing male-to-male CEO transition (MF=0) of similar industry and size. Forced turnover is defined as equal 1 if the replaced CEO is younger than 60 years old and 0 otherwise, following Coles et al. (2014). All regressions include firm and year fixed effects. Standard errors are in the parentheses and ***, **, * denote significance at 1%, 5% and 10% respectively.

Variables	Board size	Board independence	Board diversification	Board interlock	Board attendance	Duality	Aggregate board monitoring
MF x Post	-0.053**	4.994**	3.992***	-0.002	0.266	0.564**	0.531***
	(0.03)	(2.06)	(1.36)	(0.00)	(0.56)	(0.26)	(0.12)
Post	0.012	1.503	-0.131	0	0.975**	-0.39	0.251**
	(0.03)	(2.06)	(1.36)	(0.00)	(0.46)	(0.27)	(0.12)
Firm size	0.490***	16.218***	10.224***	0.005	-1.302	1.417**	-0.184
	(0.07)	(5.39)	(3.56)	(0.00)	(1.10)	(0.62)	(0.30)
ROA	0.167	8.713	9.467	-0.001	-1.464	-0.274	-0.295
	(0.12)	(9.49)	(6.27)	(0.01)	(2.06)	(0.96)	(0.53)
Leverage	0.116	6.892	-3.248	-0.003	0.791	-0.765	-0.044
	(0.07)	(5.47)	(3.62)	(0.00)	(1.18)	(0.66)	(0.31)
Market-to-book	0	0.003	0.001	0	-0.017	0.001	0
	(0.00)	(0.00)	(0.00)	(0.00)	(0.03)	(0.00)	(0.00)
Stock volatility	-0.576**	31.361*	-19.948*	-0.014	0.226	-0.248	1.504
	(0.24)	(18.20)	(12.03)	(0.01)	(3.37)	(1.93)	(1.02)
Number of segments	0.002**	0.082	-0.013	-0.000*	0.004	0.025**	-0.002
	(0.00)	(0.08)	(0.05)	(0.00)	(0.02)	(0.01)	(0.00)
CEO age	0.003	0.089	-0.128	0	-0.02	-0.013	0.014
	(0.00)	(0.19)	(0.13)	(0.00)	(0.04)	(0.02)	(0.01)
CEO serving as director	0.276	12.097	-1.842	0.002			-0.437
	(0.20)	(15.39)	(10.17)	(0.01)			(0.87)
CEO ownership	-0.204	-33.748	-33.043	-0.003	3.855	-0.858	-1.854
	(0.40)	(30.62)	(20.24)	(0.02)	(5.99)	(3.36)	(1.69)
Forced	0.071*	0.364	1.528	-0.002	0.123	-0.692*	0.224
	(0.04)	(3.06)	(2.02)	(0.00)	(0.64)	(0.37)	(0.17)
Constant	0.748***	13.399	2.34	0.007	5.394	-2.463	2.055*
	(0.28)	(21.30)	(14.08)	(0.01)	(3.35)	(1.85)	(1.20)
Observations	345	345	345	463	459	459	347
R-squared	0.353	0.118	0.145	0.025			0.148
Adj. R-squared	0.329	0.086	0.114	-0.001			0.117
Pseudo R-squared					0.072	0.054	

Table 2.7 Endogenous matching of CEOs and firms

This table reports the regression results following Heckman's (1979) two-stage least square to address nonrandom selection of female CEO. In the first stage (Panel A), a probit model is estimated for firm's propensity to appoint a female CEO based on firm characteristics, CEO characteristics and the gender equality index of the state where the firm is headquartered (Sugarman and Straus (1988)). In the second stage (Panel B), the inverse Mill's ratio calculated from the first stage is included to correct for self-selection. All regressions include year fixed effects. Standard errors are clustered by firm and are in parentheses. ***, **, and * denote significance at 1%, 5% and 10% respectively.

Panel A: Female CEO selection

Variables	Female CEO
State gender equality ranking	-0.008***
	(0.00)
Internal	-0.057
	(0.06)
Boarddiversity_t-1	0.019***
	(0.00)
Firmsize_t-1	-0.403**
	(0.16)
ROA_t-1	0.323
	(0.29)
Leverage_t-1	-0.044
	(0.18)
Market-to-book_t-1	-0.002**
	(0.00)
StockVolatility_t-1	0.852
	(0.60)
CEO age	-0.035***
	(0.01)
Constant	0.283
	(0.40)
Industry control	Yes
Observations	12,044
Pseudo R-squared	0.076

Panel B: Second stage least square

Variables	Board size	Board independence	Board interlock	Board attendance	Duality	Aggregate board monitoring
Female	-0.084***	4.233***	0.002	1.033*	-0.045	0.599***
	(0.02)	(1.42)	(0.00)	(0.56)	(0.37)	(0.12)
Inverse Mill's ratio	0.032**	-17.314***	0.013***	-0.774**	-1.146***	-2.446***
	(0.01)	(1.09)	(0.00)	(0.35)	(0.29)	(0.09)
Firm size	0.418***	71.828***	-0.052***	6.366***	-5.415***	3.550***
	(0.02)	(2.09)	(0.01)	(0.74)	(0.58)	(0.18)
ROA	0.001	-4.710***	0.003	-0.047	-0.835***	-0.406***
	(0.01)	(1.19)	(0.00)	(0.39)	(0.28)	(0.10)
Leverage	-0.004	-2.852**	0.004	-0.559	-0.538	-0.01
	(0.01)	(1.28)	(0.00)	(0.46)	(0.35)	(0.11)
Market-to-book	0	-0.022***	0	-0.002	-0.002	-0.003***
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Stock volatility	-0.250***	-21.758***	0.004	0.04	4.114***	-1.414***
	(0.04)	(3.66)	(0.01)	(1.28)	(0.96)	(0.32)
Number of segments	0	0.014	-0.000***	0.003	0.196***	-0.001
	(0.00)	(0.02)	(0.00)	(0.01)	(0.01)	(0.00)
CEO age	-0.001*	0.635***	-0.000***	0.047***	0.080***	0.079***
	(0.00)	(0.05)	0.00	(0.02)	(0.01)	(0.00)
CEO tenure	-0.001*	0.007	0.000***	-0.012	0.056***	0.001
	0.00	(0.03)	0.00	(0.01)	(0.01)	(0.00)
CEO serving as director	-0.005	-5.047***	-0.002	-1.267**	1.111***	-0.355***
	(0.02)	(1.33)	(0.00)	(0.61)	(0.31)	(0.11)
CEO ownership	-0.060*	-21.271***	-0.003	-0.351	4.020***	-0.004
	(0.03)	(2.84)	(0.01)	(1.01)	(0.82)	(0.25)
Constant	1.386***	-58.203***	0.103***			-1.829***
	(0.06)	(4.95)	(0.01)			(0.43)
Observations	9,582	9,582	9,904	5,101	7,274	9,595

ESSAY 3
CHIEF EXECUTIVE OFFICER INFLUENCE, COMPENSATION AND TURNOVER: EVIDENCE FROM SPINOFF

1. Introduction

The chief executive office's power and his rent extraction behavior have become a central problem that challenges the traditional view of the agency theory that entrusts the board of directors with the task of monitoring the firm's management. Evidence that the boards of directors do not operate at arm's length from the CEO's influence has been mounting. Recently for example, Facebook director Marc Andreessen and CEO Mark Zuckerberg were sued by investors alleging that they have cooperated to influence an independent board committee in the decision to grant Facebook CEO more control of the company at the expense of its shareholders. [10] Quantifying CEO's influence and its harm to shareholders' interest are challenging but studies in finance have shown that CEO has certain influence over the board of directors. Bebchuck, Fried and Walker (2002) propose the management power approach to explain issues in management compensation that could not be tackled by traditional agency theory. They argue that the trend towards higher CEO compensation is the result of CEO using compensation to extract rents since the CEO can influence his or her board of directors. In this paper, I utilize an interesting setup from corporate spinoffs that may help shed more lights on the CEO influence hypothesis.

When firm spins off part of its business into an independent publicly traded company, firm needs to form a new boards of directors for the spinoff business. The brand new spinoff board of directors could be formed in the best interest of the shareholders should they be involved in the selection of its directors. Instead, since spinoff board must be formed before the spinoff stock can

[10] See https://www.ft.com/content/21f51844-bd96-11e6-8b45-b8b81dd5d080l

be publicly traded, the parent board of directors and management are often involved in the selection of spinoff directors (King and Condit 2001, Denis, Denis and Walker 2014). More interestingly, since parent firm executives and directors may become the new CEO of the spinoff business, having influence over who will monitor them subsequently might lead to observable differences in rent extracting behavior between the parent related spinoff CEOs and CEOs at similar, non-spinoff firms. In contrast, if spinoff CEO was not appointed from the parent firm, his or her influence over the composition of the spinoff board could be lower than that of an incumbent CEO at similar firms. My study utilizes this unique setting and examine CEO compensation and turnover at spinoff firms to provide supporting evidence for the CEO influence hypothesis.

In order to examine the CEO influence hypothesis, previous literature relies on board characteristics to gauge variation in CEO power. For example, larger, less independent boards and boards that bestow the chairman power to the CEO are believed to be under more influence by the CEO (Jensen 1993, Raheja 2005). Core, Holthausen and Larcker (1999) find evidence that larger boards with more director appointed by the CEOs compensate the CEO higher. Weisbach (1988) reports that outside directors are better at monitoring the firm CEO thus firing poor performing CEOs more promptly. Goyal and Park (2002) document that combining the CEO and chairman role in one individual is associated with lower sensitivity of CEO turnover to firm performance.

Previous literature has documented that the new spinoff board is structured differently from board of peer firms. Denis, Denis and Walker (2015) find that spinoff boards are smaller, more independent, and include more industry experts than board at industry- and size-matched firm when spinoff board is freshly formed. They argue that these spinoff boards are structured for the need to assess the CEO's ability and show that the difference in board structures are largest for spinoff with an outside appointed spinoff CEO who was not formerly employed by the parent firm

as an executive or director. However, in this study I argue that these spinoff board characteristics might also be consistent with difference in CEO's influence over the formation of spinoff board relative to board at industry and size-matched peers and provide evidence that these differences remain significant post spinoff.

Given differences of spinoff board structures, I inspect CEO compensation and turnover in spinoff firms. I hypothesize that spinoff CEOs who were appointed from the parent firm have higher influence over the composition of the spinoff board, relative to CEOs at similar non-spinoff firms. In contrast, if spinoff CEOs were appointed from outside the pre-spinoff parent, their influence is lower. I find evidence that parent related spinoff CEOs receive higher compensation than their peers at matched firms while outside appointed spinoff CEOs receive similar compensation to their respective peers. While these initial results cannot rule out the possibility that parent related spinoff CEOs might have better skills and experiences, I also provide evidence that these CEOs have lower pay-performance sensitivity, consistent with Bebchuck and Fried (2003) argument that powerful CEOs' pay is less sensitive to firm performance. Inspection of CEO turnover performance sensitivity also provides supporting evidence to the CEO influence hypothesis. I find that parent spinoff CEOs have significantly lower turnover – accounting performance sensitivity compared to CEOs at similar firms while outside hired spinoff CEOs have similar turnover – performance sensitivity.

My paper contributes to the literature examining CEO's influence on the board of directors by inspecting a unique group of spinoff firms that need to form their board of directors from scratch. Since CEOs of spinoffs could be appointed from the pre-spinoff firm or from outside, it creates an opportunity to examine the CEO's influence on the spinoff board composition and his subsequent rent seeking behavior. While previous literature has investigated CEO compensation

in spinoff firms, mine is the first to analyze spinoff CEO compensation against industry and size-matched firm under the CEO influence hypothesis. My paper thus contributes to the understanding of rent seeking behavior by firm CEOs and provides evidence that limiting the CEO influence on the selection of firm directors might mitigate CEO rent seeking behavior.

2. Motivation

2.1. CEO's Influence and Decision Making by the Board of Directors

The agency theory proposed by Jensen and Meckling (1976) suggests that the board of directors is trusted with the task of monitoring the management of the firm. Given the ability to determine the compensation management deserves and replace management when needed, the board is believed to behave as a representative of the firm's shareholders to discipline and encourage the firm management to act in the best interests of the shareholders. However, the current literature has called into question whether the board is free from management's influence and acts at arm's length in these important decisions.

Bebchuk, Fried and Walker (2002) argue that since managers have power and influence over the board of directors to a certain extent, it is not possible for the board of directors to operate at arm's length when setting the compensation for the firm management. More particularly, the authors contend that managers use their power over the boards of directors to extract rents and influence the board of directors to increase their compensation even if managers are only performing adequately. They rely on, among other reasons, the fact that managers are often involved in the selection of directors serving on the boards and are often connected to board members via "bond of interest, collegiality, or affinity". The authors cited several evidence to support the managerial power approach. For example, executives are compensated for general market rises which are not due to their efforts, boards of directors reset options exercises prices

when firm stock prices fell below the original strike prices, or when a CEO of an acquired firm is given a "gratuitous" payment to speed up the acquisition process.

Empirically, Bebchuck et al. (2002)'s management power argument can be tested by examining how the differences in CEO influence over the board of directors across firms impact the CEO compensation and replacement decisions made by the board. Bebchuck et al. (2002) and the current literature argue that certain board structures are associated with higher CEO power. For example, Jensen (1993) and Raheja (2005) argue that a large board is more prone to control by the CEO and free-riding problems. Jensen (1993) argue that independent directors monitor the CEO more effectively and an independent chairman would contain CEO's influence on the board of directors.

Consistent with Bebchuck et al. (2002), CEO's influence over the board of directors has been shown to benefit the CEO's compensation package. Core, Holthausen and Larcker (1999) find that CEO compensation is higher when CEO is also the chair of the board, when the board contains more directors, when more independent directors are appointed by the CEO, when independent directors are older and serve on multiple boards. Hatzell and Stark (2003) find that the institutional ownership concentration which is believed to put more constraints on the CEO's power is positively associated with pay-performance sensitivity and negatively related to level of compensation. Boyd (1994) reported a negative relationship between board control (measured by board independence, director stock ownership, owner representation on board and director compensation) and CEO compensation. Brick, Palmon and Wald (2006) argue that the board and the CEO share mutual benefits when rewarding each other higher compensation. The authors report positive relationship between CEO compensation and excess director compensation as evidence of mutual back-scratching between the CEO and the board. Chhaochharia and Grinstein

(2009) find that after 2002, firms that need to increase board independence following requirement by U.S. stock exchanges significantly lower their CEO compensation.

While Bebchuck et al. (2002) focus mainly on CEO compensation as the main channel of rent extraction by powerful CEOs the current literature also investigates CEO's prolonged tenure as additional evidence of management entrenchment. Laux (2008) proposed a model that predicts higher board independence will lead to increase in CEO turnover. Weisbach (1988) reports that outside directors are tougher monitors and thus CEO turnover performance sensitivity is higher for firms with outsider dominated boards. Goyal and Park (2002) show that combining the CEO and chairman role in one individual is associated with lower sensitivity of CEO turnover to firm performance. Guo and Masulis (2015) use the 2003 change in NYSE and NASDAQ board independence rules as a natural experiment and show that there is significant increase in forced CEO turnovers in noncompliant firms which had to increase board independence or implement fully independent nominating committee. Dah, Frye and Hurst (2014), on the other hand, find that firms which remove independent directors to move close to the required 50% independent board stated by the Sarbanes Oxley act (SOX) have lower CEO turnover performance sensitivity following SOX.

2.2. CEO's Influence on the Formation of the Boards of Directors in Spinoff Firms

In a spinoff transaction, one or more divisions of a company is separated and becomes independent businesses from the parent company. The parent company stockholders receive spun-off firm shares on a pro rata basis and become the shareholders of the newly formed company. Since the spun-off units are independent firms, they must form their own board of directors in preparation for the spinoff. The parent board of directors and management are involved in the selection of spinoff board of directors. King and Condit (2001) described in their article that

management and directors of parent firms consider spinoff a rare opportunity to build a "dream team" of directors for spinoff business. Denis, Denis and Walker (2014) emphasized that CEOs and directors of parent firm are likely to be involved in the selection of spinoff directors. Further examination of spinoff firm first proxy statement also provides consistent narration of the parent firm's involvement in the formation of the spinoff boards. Particularly, spinoff directors are profiled as being nominated by the parent firm's board of directors or its nominating committee. Furthermore, shareholders of spinoff units who are also shareholders of parent firms do not cast their votes directly on who will be directors of the spinoff firms before or immediate when spinoff unit is publicly traded.[11] Therefore, if the CEO of spinoff is appointed from the parent firm, his or her influence on the composition of the spinoff board might be greater than the case of an outside hired spinoff CEO.

Empirically, Denis et al. (2015) investigate the structure of the newly formed spinoff board of directors and find that spinoff boards are smaller and consist of more outside directors with industry expertise than peer firms of the same size and in the same industry. Furthermore, the differences are largest for the group of spinoff firms that hire an outside CEO and the group of spinoff firms whose CEOs were not on the parent's board of directors. While the authors interpret the result as consistent with higher needs for CEO's ability assessment, it is also consistent with spinoff board being structured under lower CEO's influence if spinoff CEO is hired from outside the combined business. Consistently, Du and He (2015) examine the adoption of anti-takeover provisions (ATPs) in the new spinoff firms and find that parent managed spinoffs adopt lower number of ATPs than spinoffs whose management is separated from the parent's.

[11] Spinoff firms are required to have a board of directors by the time their stocks are listed on stock exchanges, thus the first shareholder meeting is not likely to happen before the board of directors has been formed.

Although Denis et al. (2015) inspected the structure of the spinoff boards in comparison with industry and size-matched peers, their sample is limited to the board structure in the first year after spinoff is completed. I extend the spinoff sample by following these spinoff firms from the spinoff year until up to ten years post spinoff. The extension of the sample first allows for more observations to be included in the test sample and second enables us to answer the question whether spinoff board structure reverses to the norm post spinoff or stays different from the peer board post spinoff. If the spinoff board structure reverses to the norm post spinoff, then CEO's influence on board composition might be short lived and we might see no significant differences in spinoff CEO's rent seeking behavior relative to peer CEOs. If, on the other hand, spinoff board structure remains different from the structure of peer firm boards, then we could expect differences in rent seeking behavior of spinoff CEOs compared to peer firm CEOs.

Thus my first hypotheses inspecting the structure of the board of directors post spinoff contend that:

H1: The structure of the spinoff board remains significantly different from matched firm board post spinoff.

H1a: The structure of the spinoff board is no longer significantly different from matched firm board post spinoff.

Since the severity of the CEO's influence on the formation of the board of director can be better distinguished for spinoff firms, it provides an interesting setting to examine whether the spinoff CEOs' rent extraction behavior is different from their peers in similar firms. Previous literature has examined the spinoff CEO's compensation under the argument that once a division is spun off from the combined business, the CEO's ability can be better assessed by the market, which leads to improvement in incentive alignment for spinoff CEO (Aaron 1991). However,

previous studies only inspect how the spinoff CEO's incentive alignment are improved relative to when spinoff used to be a division of the parent firm (Seward and Walsh 1996, Feldman 2015). My study, on the other hand, examines spinoff CEO's compensation and turnover relative to industry and size-matched peers.

As argued earlier, if the CEO of the new spinoff firm was previously employed by the parent firm as the parent CEO, the spinoff division manager or as a member of the parent board of director, his or her involvement is expected in the selection of the new spinoff board member, thus his subsequent influence on the spinoff board's decisions might be more severe. Contrastingly, if the spinoff CEO is hired from outside of the combined business to run the new spinoff, his or her influence on the composition of the spinoff is more limited. Thus, comparing to peer firms of the same industry and size, we could expect spinoff CEO's rent extraction behavior to be at least similar to peer firm CEO if the spinoff CEO belonged to parent management, while outside hired spinoff CEOs might exhibit lower rent extraction behavior relative to their peer respective peer CEOs. More particularly, parent spinoff CEOs might have more influence over the spinoff board of directors, thus his or her compensation might be higher with lower turnover performance sensitivity than peer firms. In contrast, outside hired spinoff CEOs are compensated similarly to peer firm CEOs with similar or higher turnover performance sensitivity.

Hence, my CEO influence hypotheses predict that:

H2: Parent related spinoff CEOs have higher compensation than peer firm CEOs, while outside hired spinoff CEOs are compensated similarly to or lower than peer firm CEOs.

H3: Parent related spinoff CEOs have lower turnover performance sensitivity than peer firm CEOs, while outside hired spinoff CEOs have similar or higher turnover performance sensitivity compared to peer firm CEOs.

3. Empirical analysis

3.1. Sample Selection

The sample of spinoff transactions is collected from the Security Database Corporation (SDC) Merger and Acquisition Database from 1997 to 2013. I limit the sample to tax-free corporate spinoffs with available financial data from Compustat, stock trading data from CRSP, board of director information from ISS (formerly RiskMetrics) and CEO compensation and characteristics from Execucomp. Table 1 presents the distribution of 147 spinoffs included in the final sample throughout the sample period. There is a high concentration of spinoffs during 1996 through 2000, coinciding with the period of many publications investigating the benefits of corporate spinoff.

To inspect board structure of spinoffs and matched firms, I collect the number of directors sitting on board (*Board Size*), the percentage of outside directors (*Board Independence*), the percentage of female directors (*Gender Diversification*), and whether the CEO is also the chairman of the board (*Duality*) from ISS and Execucomp. CEO compensation is collected from Execucomp in the form of cash compensation (salary and bonus), equity compensation (total value of restricted stock granted and total Black-Scholes value of options granted) and total compensation (salary, bonus, other annual compensation, total value of restricted stock granted, total Black-Scholes value of options granted, long-term incentive payouts, and all other total), the percentage of cash compensation in total compensation, and the percentage of equity compensation in total compensation. CEO compensation in dollar value is converted to year 2000 dollars and used in natural log form. To control for firm characteristics, I include the natural log of firm market value, firm leverage (total debt over total assets), firm return on assets (ROA) from Compustat and annual stock return calculated from CRSP database.

3.2. Matching Strategy and Summary Statistics

For each spinoff firm in the final sample, I follow the current literature (Denis et al. 2015) and find a matched peer firms based on size (natural log of market valuation) and industry (48 industry definition by Fama and French) in the respective year. In other words, each spinoff firm-year observation is matched with one firm-year observation from the non-spinoff universe which is the overlap of firms from Compustat, CRSP, Execucomp and ISS. This matching strategy ensures that all spinoff observations are best matched with similar peers and the matching is renewed for every year the spinoff firm remains in the sample. However, for CEO turnover tests, this matching procedure is not applicable; therefore, for CEO turnover tests, I find the best match for spinoff in the spinoff year and follow both firms throughout the entire sample period.

Table 2 reports summary statistics of board structure, CEO compensation, firm characteristics and CEO characteristics or the spinoff firm and its peer following the firm-year matching technique and throughout the entire sample period. There are significant differences in board structures between spinoffs and their matched firms. Particularly, spinoff firms have smaller boards which are more independent, more gender diversified and have a higher probability of combining the CEO and chairman roles than their industry- and size-matched peers. Smaller board size and higher board independence in spinoffs are consistent with Denis et al. (2015). Comparison of the CEO's compensation seems to indicate that spinoff CEOs are compensated more with equity and have higher total compensation than peer firm CEOs. Spinoff firm CEOs are also younger and have shorter tenure than their counterparts at peer firms. Since these firms are matched based on firm size and industry, there is no significant difference in firm size and industry, however, spinoff firms seem to have slightly lower return on assets and have slightly lower annual stock returns.

Table 3, on the other hand, describes summary statistics of the test sample using spinoff year matching strategy. There is no significant differences between spinoff and peer firm performance in the CEO turnover test sample in univariate. However, differences in board structure and CEO characteristics are consistent with Table 2. Control variables for CEO turnover tests include firm size, property, plant and equipment scaled total assets, revenue scaled by total assets and stock volatility. Since the spinoff and peer firm were matched in the spinoff year, spinoff firm were slightly smaller in this sample but the difference is marginal, hence the spinoff year matching strategy also works quite well.

3.3. Spinoff Board Structure Post Spinoff

In order to test my board structure hypotheses, I use multivariate regressions of board structure on firm characteristics following prior studies using data of spinoff and matched firms immediately post spinoff year. Since the source of spinoff CEOs may play an important role in the formation of spinoff boards, I partition the sample in to outside hired and parent related spinoff CEO firms with their respective matched firms. The multivariate results are reported in Table 4. Consistent with Denis et al. (2015), spinoff boards with outside hired CEOs are found to be significantly smaller with higher percentage of independent directors than the boards at matched firms. Moreover, outside hired CEO spinoff boards also have higher gender diversification and higher likelihood to combine the CEO and chairman role. Except for variable Duality, the structure of spinoff boards seems consistent with increased monitoring of the CEO (Jensen 1993, Adams and Ferreira 2009). When spinoff CEO is related to parent firm's management, spinoff boards are also smaller, more independent, more diversified with lower likelihood of dual CEO-chairman relative to their peer firm boards, but significance is only found for board independence.

In general we find partial support for our hypothesis H1 since spinoff board structure remains significantly different from that of matched firms but only for the group of spinoff firms with outside hired CEOs. While the results are weaker for parent related CEOs, they are consistent with Denis et al. (2015) who find smaller and less significant difference for parent related spinoff CEOs and consistent with spinoff board being structured under higher influence by the parent related spinoff CEO.

3.4. CEO Compensation and Turnover in Spinoff

Given spinoff board structure remains significant different from that of matched firm post spinoff, we could expect some differences in rent seeking behavior of spinoff CEOs relative to peer CEOs. I first examine spinoff CEO compensation relative to their peers at non-spinoff firms using multivariate framework where I include firm characteristics, performance and board characteristics that have been shown as significant determinants of CEO compensation in prior studies.

Panel A of Table 5 reports multivariate regression results for two groups of firms, i.e. spinoff firms with outside hired CEOs compared to their matched peers and spinoff firms with parent related CEOs regressed against their industry and size-matched peers. The results show no significant differences between outside hired spinoff CEOs and their counterparts at matched firms, except for slightly higher level of equity compensation (coefficient of variable *Spinoff* is positive at 10% for Equity Compensation). In contrast, parent related spinoff CEOs have significantly higher level of equity and total compensation as well as higher proportion of equity in total compensation (significantly positive coefficients on variables *Spinoff* for Equity Compensation, Total Compensation and %Equity). Consistent with Core et al. (1999), the number

of directors on board have positive impact of level of CEO compensation. The results thus support hypothesis H2.

Although CEO age is included, the results in Panel A of Table 5 do not rule out the possibility that parent related spinoff CEOs have better skills or more valuable experiences than their counterparts at peer firms thus receive higher compensation. In order to provide additional evidence to support the managerial power hypothesis which predicts that inside promoted CEOs who expectedly have higher influence on the newly formed spinoff boards are able to use compensation to extract rents (Bebchuck et al. 2002), I also inspect the pay-performance sensitivity (PPS) of spinoff CEOs relative to their counterparts at matched firms. Jensen and Murphy (1990) propose PPS as a measurement of alignment between management's incentive contracts and shareholder's wealth improvement. Specifically, the higher the management PPS the more his or her compensation is tight to firm performance. Bebchuck and Fried (2003) argue that "pay will be higher and/or less sensitive to performance in firms which managers have relatively more power" in support of the management power approach to executive compensation (Bebchuck et al. 2002). Therefore, should parent related spinoff CEOs have relatively more influence on their board of directors than CEOs at peer firms, we could expect their pay to be less sensitive to firm performance or lower PPS than that of peer firm CEOs. Outside hired CEOs, in contrast, should have the same or lower PPS than their respective peer CEOs. I follow Jensen and Murphy (1990) and calculate cash, stock and total PPS for CEOs of spinoff and matched firms then run compare PPS of spinoff CEOs against their counterparts. The results are reported in Panel B of Table 5, where I also control for the board characteristics. Consistent with Bebchuck and Fried (2003), parent related spinoff CEOs have lower stock and total PPS relative to their peers at matched firms while there is no significant differences between PPS of outside hired spinoff CEOs and their

respective peer CEOs. Parent related spinoff CEOs have significantly higher cash PPS but as Bebchuck and Fried (2003) argued rent seeking behavior of powerful CEOs mainly targets equity compensation.

Given supporting evidence for the CEO influence hypothesis found in the CEO compensation channel, I next examine CEO turnover - performance sensitivity is spinoff firms and their matched firms. Particularly, I follow current literature and use logistic regression of CEO turnover on past firm performance controlling for past board and firm characteristics. I include dummy variable *Spinoff* and an interaction between *Spinoff* and past firm performance to answer the question whether spinoff CEOs have higher or lower turnover - performance sensitivity relative to CEOs at peer firms. I use two measurements of past firm performance following the current literature, i.e. accounting performance measured by industry adjusted return on asset (*Ind_adjROA*) and stock performance measured by industry adjusted stock return (*Ind_adjRET*). Panel A of Table 6 reports the logistic regression results. Spinoff CEOs seem to face lower rate of dismissal according to the results for both outside hired and parent related CEOs. While there is no significant difference in the turnover - performance sensitivity between outside hired CEOs in spinoff firms and CEOs of peer firms, the turnover - performance sensitivity is significantly lower for parent related CEOs of spin-off firms, indicated by the significant positive coefficient on the interaction term between *Spinoff* and past accounting performance. This coefficient translates to a marginal effect of .5386 with significant level of 5%, suggesting that for a parent related CEO in spinoff firm, the sensitivity of CEO turnover with respect to past firm performance is .5386 lower than such sensitivity in a peer firm. Poor accounting performance leads to increased probability of the CEO being replaced at both spinoff and peer firms where parent related spinoff CEOs have lower turnover - accounting performance sensitivity, supporting hypothesis H3 and the general

CEO influence prediction. Past stock performance, however, does not seem to be able to predict CEO turnover for the firms included in the CEO turnover sample.

4. Conclusion

When a firm spins off part of its business into an independent publicly traded company, firm must form a new board of director for the spinoff business. This provides a unique laboratory to examine how the newly formed spinoff board might be characterized differently under variation of CEO's influence and how differences in subsequent CEO's rent seeking behavior might be observed. More specifically, spinoff CEOs who were appointed from the parent firm might have higher influence over the selection of spinoff directors relative to their peers at similar non-spinoff firms. In contrast, spinoff CEOs who were hired from outside might have lower influence over the spinoff board formation. I find evidence that spinoff board is structured differently from board of industry and size – matched firm post spinoff, consistent with Denis et al. (2015). Inspecting CEO compensation and turnover, I find that parent related spinoff CEOs are compensated with higher level of compensation while receiving lower pay-performance sensitivity (PPS) and having lower turnover-performance sensitivity relative to their counterparts at industry and size-matched firms, consistent with the CEO influence hypothesis. Contrastingly, outside appointed spinoff CEOs have similar compensation both in terms of level pay and PPS and have similar turnover-performance sensitivity. My study contributes to the literature that examines CEO's rent seeking behavior using a unique sample of spinoff firms that need to form its new boards of directors from scratch and provide evidence that limiting CEO influence on board selection might help mitigate CEO rent seeking behavior.

References

Aron, D. J. (1991). Using the Capital Market as a Monitor: Corporate Spinoffs in an Agency Framework. *The RAND Journal of Economics*, *22*(4), 505-518.

Bebchuk, L. A., Fried, J. M., & Walker, D. I. (2002). Managerial Power and Rent Extraction in the Design of Executive Compensation. *The University of Chicago Law Review*, *69*, 751-846.

Bebchuk, L. A., & Fried, J. M. (2003). Executive Compensation as an Agency Problem. *Journal of Economic Perspectives*, *17*(3), 71-92.

Boyd, B. K. (1994). Board control and CEO compensation. *Strategic Management Journal*, *15*(5), 335-344.

Brick, I. E., Palmon, O., & Wald, J. K. (2006). CEO compensation, director compensation, and firm performance: Evidence of cronyism? *Journal of Corporate Finance*, *12*(3), 403-423.

Chhaochharia, V., & Grinstein, Y. (2009). CEO Compensation and Board Structure. *Journal of Finance*, *64*(1), 231-261.

Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, *51*, 371-406.

Dah, M. A., Frye, M. B., & Hurst, M. (2014). Board changes and CEO turnover: The unanticipated effects of the Sarbanes–Oxley Act. *Journal of Banking & Finance*, *41*, 97-108.

Denis, D. J., Denis, D. K., & Walker, M. D. (2014). Matching directors with firms: The role of industry expertise and CEO influence. *Working paper, University of Pittsburgh & North Carolina State University*.

Denis, D. J., Denis, D. K., & Walker, M. D. (2015). CEO Assessment and the Structure of Newly Formed Boards. *Review of Financial Studies*, *28*(12), 3338-3366.

Feldman, E. R. (2016). Managerial compensation and corporate spinoffs. *Strategic Management Journal*, *37*(10), 2011-2030.

Goyal, V. K., & Park, C. W. (2002). Board leadership structure and CEO turnover. *Journal of Corporate Finance*, *8*(1), 49-66.

Guo, L., & Masulis, R. W. (2015). Board Structure and Monitoring: New Evidence from CEO Turnovers. *Review of Financial Studies*, *28*(10), 2770-2811.

Hartzell, J. C., & Starks, L. T. (2003). Institutional Investors and Executive Compensation. *Journal of Finance*, *58*(6), 2351-2374.

Jensen, M. C. (1993). The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems. *Journal of Finance*, *48*(3), 831.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360.

Jensen, M. C., & Murphy, K. J. (1990). Performance Pay and Top-Management Incentives.*Journal of Political Economy*, *98*(2), 225-264.

King, C., Condit, M., 2001. Spin-off boards: Creating dream teams. The Corporate Board, November/December, 10-14.

Laux, V. (2008). Board Independence and CEO Turnover. *Journal of Accounting Research*, *46*(1), 137-171.

Raheja, C. G. (2005). Determinants of Board Size and Composition: A Theory of Corporate Boards. *Journal of Financial and Quantitative Analysis*, *40*(02), 283.

Seward, J. K., & Walsh, J. P. (1996). The governance and control of voluntary corporate spin-offs. *Strategic Management Journal*, *17*(1), 25-39.

Weisbach, M. S. (1988). Outside directors and CEO turnover. *Journal of Financial Economics*,*20*, 431-460.

Tables

Table 3.1 Distribution of spinoffs by year

This table presents the distribution of tax-free spin-off transactions in the final sample from 1996 to 2013. Spinoff transactions were collected from SDC database and merged with available information from Compustat, Execucomp, CRSP and ISS. All spin-off firms that became private, were acquired immediately after the completion of the spinoff and cannot be identified were excluded from the final sample.

Year	Number	Percentage of Sample
1996	9	6%
1997	9	6%
1998	12	8%
1999	13	9%
2000	14	10%
2001	8	5%
2002	2	1%
2003	2	1%
2004	4	3%
2005	4	3%
2006	6	4%
2007	12	8%
2008	12	8%
2009	2	1%
2010	8	5%
2011	9	6%
2012	11	7%
2013	10	7%
Total	147	100%

Table 3.2 Summary statistics - Matching for board structure and CEO compensation tests

This table reports summary statistics for the sample of spinoffs and their matched firms used in the board structure and CEO compensation tests. For each firm-year observation in the spinoff sample, one firm-year non-spinoff observation was found based on firm size (ln(market capitalization)) and industry (48 industries by Fama and French). ***, ** and * denote significant difference at 1%, 5% and 10% respectively.

Variables	Spinoff			Peers			Difference	
	Mean (1)	Median	Std. Dev.	Mean (2)	Median	Std. Dev.	(1)-(2)	
Board structures								
Size (Number of directors)	9.02	9.00	1.96	9.56	9.00	2.24	-0.53	***
Independence (%)	78.55	83.33	13.66	72.80	75.00	15.69	5.75	***
Gender diversification (%)	13.02	12.50	9.24	11.45	11.11	9.28	1.58	***
Duality (Binary)	0.65	1.00	0.48	0.55	1.00	0.50	0.10	***
CEO compensation								
Cash - ln($2000 in thousands)	7.07	7.09	0.94	7.02	7.06	1.09	0.05	
Equity - ln($2000 in thousands)	7.75	7.79	1.14	7.41	7.43	1.48	0.34	**
Total compensation - ln($2000 in thousands)	8.67	8.78	1.00	8.49	8.53	0.97	0.17	**
% Cash (Cash/Total compensation)	0.26	0.18	0.22	0.32	0.23	0.24	-0.06	***
% Equity (Equity/Total compensation)	0.58	0.58	0.41	0.49	0.52	0.28	0.08	***
CEO characteristics								
Age	55.03	55.00	6.54	56.47	57.00	7.12	-1.44	***
Tenure	4.85	4.00	3.81	7.02	5.00	7.32	-2.16	***
Ownership (% stock owned)	0.01	0.00	0.04	0.03	0.00	0.27	-0.03	*
Firm characteristics								
Size - ln(Market value)	7.90	7.90	7.89	7.92	7.92	7.88	-0.02	
Leverage (Total debt/Total assets)	0.43	0.43	0.50	0.53	0.53	0.36	-0.11	
ROA (Net income/Total assets)	0.03	0.03	0.05	0.05	0.05	0.06	-0.01	***
Annual stock return	0.12	0.12	0.10	0.13	0.13	0.09	-0.01	*
Market-to-book ratio	6.09	2.65	4.56	3.30	2.25	8.53	2.79	

Table 3.3 Summary statistics - Matching for CEO turnover tests

This table reports summary statistics for the sample of spinoffs and their matched firms used in the CEO turnover tests. For each firm in the spinoff sample, one matched firm was found based on firm size (ln(market capitalization)) and industry (48 industries by Fama and French) in the spinoff year. Both firms are then tracked thought out the entire sample period from 1996 to 2014. ***, ** and * denote significant difference at 1%, 5% and 10% respectively.

Variables	Spinoff			Peers			Difference	
	Mean (1)	Median	Std. Dev.	Mean (2)	Median	Std. Dev.	(1)-(2)	
Firm performance								
Industry adjusted ROA	0.02	0.04	0.15	0.06	0.03	1.22	-0.03	
Industry adjusted stock return	0.12	0.05	0.57	0.11	0.05	0.62	0.01	
Board structures								
Size (Number of directors)	8.73	9.00	2.05	9.40	9.00	2.37	-0.66	***
Independence (%)	77.50	83.33	14.51	72.63	77.78	16.38	4.87	***
Gender diversification (%)	12.33	12.50	9.96	11.43	11.11	9.41	0.91	
Duality (Binary)	0.63	1.00	0.48	0.51	1.00	0.50	0.12	***
CEO characteristics								
Age	54.32	54.00	6.44	56.05	56.00	7.75	-1.73	***
Tenure	3.85	3.00	3.29	6.82	4.00	7.52	-2.97	***
Ownership (% stock owned)	1.07	0.80	1.28	2.28	1.08	3.67	-1.21	***
Firm characteristics								
Size - ln(Market value)	7.52	7.38	1.46	7.69	7.52	1.57	-0.17	*
PPE/Total assets	0.48	0.35	0.39	0.46	0.37	0.35	0.03	
Revenue/Total assets	0.98	0.88	0.66	1.05	0.90	0.77	-0.07	*
Stock volatility	0.14	0.11	0.07	0.13	0.11	0.07	0.01	

Table 3.4 Board structures post spinoff

This table report multivariate regressions of the determinants of board structures in spinoff versus matched firms. Variable *Spinoff* is equal 1 for spinoff firms and 0 for matched firms. Outside hired CEOs are spinoff CEOs who were hired from outside the pre-spinoff business. Parent related CEOs are spinoff CEOs who were formerly executives, divisional managers or directors at parent firms. Standard errors are clustered by firm and in the parenthesis. ***, ** and * denote significance at 1%, 5% or 10% respectively.

	Outside hired CEO				Parent related CEO			
Variable	Board size	Board independence	Board diversification	Duality	Board size	Board independence	Board diversification	Duality
Spinoff	-0.687***	3.940***	1.733***	0.109***	-0.15	4.979**	1.807	-0.033
	(0.12)	(0.85)	(0.58)	(0.03)	(0.30)	(2.37)	(1.35)	(0.07)
Firm size	0.804***	1.272***	1.202***	0.043***	0.757***	0.649	1.268***	0.046***
	(0.04)	(0.30)	(0.20)	(0.01)	(0.06)	(0.44)	(0.25)	(0.01)
ROA	-0.727	-0.965	-1.065	0.038	1.590**	-4.665	4.985	0.066
	(0.53)	(3.75)	(2.55)	(0.14)	(0.73)	(5.65)	(3.22)	(0.18)
Leverage	-0.116***	0.163	-0.048	0.006	1.552***	-0.011	0.737	0.023
	(0.03)	(0.19)	(0.13)	(0.01)	(0.47)	(3.62)	(2.06)	(0.12)
Stock return	0.016	0.667	0.305	-0.048	-0.159	-0.418	-0.4	0.01
	(0.12)	(0.82)	(0.56)	(0.03)	(0.14)	(1.09)	(0.62)	(0.03)
Market-to-book	0.048***	0.047	0.100**	0.001	0.000	0.076	0.018	0.000
	(0.01)	(0.07)	(0.05)	(0.00)	(0.02)	(0.14)	(0.08)	(0.01)
Constant	3.129***	46.297***	-4.265	0.361*	1.964	59.265***	-11.876**	0.669**
	(0.65)	(4.60)	(3.13)	(0.20)	(1.25)	(9.65)	(5.50)	(0.30)
Observations	1,092	1,092	1,092	1,054	642	636	636	652
R-squared	0.29	0.221	0.083	0.063	0.3	0.218	0.12	0.059

Table 3.5 CEO compensation

This table reports determinants of CEO compensation for spinoff versus industry and size-matched firms. Variable *Spinoff* is equal to 1 for spinoff firms and 0 for matched firms. CEO compensation level are converted to year 2000 dollars and used in natural log form. Outside hired CEOs are spinoff CEOs who were hired from outside the pre-spinoff business. Parent related CEOs are spinoff CEOs who were formerly executives, divisional managers or directors at parent firms. Panel A reports multivariate regressions of compensation level and structure. Panel B reports estimates of pay-performance sensitivity (PPS) controlling for board characteristics. Standard errors are clustered by firms and in the parenthesis. ***, ** and * denote significance at 1%, 5% and 10% respectively.

Panel A: Determinants of CEO compensation

	Outside hired CEO					Parent related CEO				
Variables	Cash Compensation	Equity Compensation	Total Compensation	%Cash	%Equity	Cash Compensation	Equity Compensation	Total Compensation	%Cash	%Equity
Spinoff	-0.0582	0.1739*	0.111	-0.0277	0.0353	-0.1535	0.3817***	0.1877**	-0.0258**	0.0708***
	(0.08)	(0.10)	(0.08)	(0.02)	(0.03)	(0.19)	(0.14)	(0.09)	(0.01)	(0.02)
Firm size	0.0011	-0.0429*	-0.0182	0.0018	-0.0082	-0.0358	-0.0663*	-0.0262	-0.0002	-0.0031
	(0.02)	(0.03)	(0.02)	(0.01)	(0.01)	(0.04)	(0.04)	(0.02)	(0.00)	(0.01)
Market-to-book	0.0009	0.0064*	0.0057*	-0.0015*	0.0007	-0.0047	0.0057	0.0038	-0.0011	0.0017**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)
Leverage	0.0041	0.007	0.0064	-0.0001	-0.0011	0.001	-0.0002	0.0017	-0.0009**	-0.0026**
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	0.00	(0.00)
ROA	0.2389	-0.1436	-0.0628	0.0194	-0.0528*	0.1585	0.0666	0.1425	-0.016	0.0069
	(0.17)	(0.12)	(0.10)	(0.02)	(0.03)	(0.19)	(0.14)	(0.09)	(0.01)	(0.03)
Stock return	0.5657*	0.4218	0.77	-0.1403	-0.1716	1.3109*	0.1019	0.3826	0.1886***	-0.0749
	(0.32)	(0.58)	(0.48)	(0.13)	(0.26)	(0.74)	(0.75)	(0.49)	(0.07)	(0.12)
Board size	0.1444**	0.4788***	0.4294***	-0.0462***	0.0404***	0.4261***	0.4432***	0.3787***	0.0092	0.0348***
	(0.06)	(0.05)	(0.04)	(0.01)	(0.01)	(0.07)	(0.06)	(0.03)	(0.01)	(0.01)
Board independence	0.0143**	-0.001	-0.0018	0.0046	-0.005	0.0452	-0.2029	-0.1422	0.0514*	-0.0995
	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.35)	(0.44)	(0.26)	(0.03)	(0.07)
Board gender diversification	-0.0002	0.0096*	0.0086**	-0.0026***	0.0026*	0.0175*	0.0084	0.0071	-0.0007**	0.0019
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	0.00	(0.00)
Duality	1.4678*	3.1583***	1.8300**	-0.1076	0.029	0.1903**	-0.04	0.031	0.0397**	-0.0578**
	(0.87)	(1.21)	(0.91)	(0.24)	(0.28)	(0.08)	(0.09)	(0.05)	(0.02)	(0.02)
CEO age	-0.0298	0.0196	0.0134	0.0005	0.0023	0.0204	0.0240*	0.0170*	-0.0024**	0.0004
	(0.03)	(0.02)	(0.01)	(0.00)	(0.00)	(0.02)	(0.01)	(0.01)	(0.00)	(0.00)
CEO tenure	0.0012	-0.0180**	-0.0164**	0.0045**	-0.0056**	-0.0139	-0.0201*	-0.0208***	0.0006	-0.0051***
	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.02)	(0.01)	(0.01)	(0.00)	(0.00)
Constant	5.3860***	4.0400***	4.8772***	0.6056***	0.6057***	3.9288***	4.9955***	5.8014***	0.2322**	0.2875*
	(0.62)	(0.64)	(0.50)	(0.13)	(0.15)	(1.05)	(0.87)	(0.51)	(0.10)	(0.16)
Observations	814	814	814	814	814	768	768	768	768	768
R-squared	0.2304	0.1626	0.5771	0.1956	0.1409	0.3835	0.379	0.4933	0.3967	0.112
Adj. R-squared	0.2003	0.1299	0.5605	0.1641	0.1074	0.3285	0.3517	0.4734	0.373	0.0771

Panel B: Pay-performance sensitivity

	Outside hired CEOs			Parent related CEOs		
Variables	CashPPS	StockPPS	TotalPPS	CashPPS	StockPPS	TotalPPS
Spin-off	0.0001	-0.015	-0.008	0.0003**	-0.012**	-0.010**
	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)
Board characteristics	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Observations	80	72	84	114	104	120
R-squared	0.04	0.12	0.12	0.07	0.12	0.07

Table 3.6 CEO turnover

This table reports logistic regressions of CEO turnover on past firm performance and firm characteristics. The dependent variable is equal 1 if CEO is replaced and 0 otherwise. Variable *Spinoff* equal 1 for spinoff and 0 for industry and size-matched firms. Outside hired CEOs are spinoff CEOs who were hired from outside the pre-spinoff business. Parent related CEOs are spinoff CEOs who were formerly executives, divisional managers or directors at parent firms. Accounting performance is measured by industry adjusted ROA and stock performance is measured by industry adjusted annual stock return. Standard errors are clustered by firm and in the parenthesis. ***, ** and * denote significance at 1%, 5% or 10% respectively.

	Outside hired CEO		Parent related CEO	
Variables	Accounting Performance	Stock Return	Accounting Performance	Stock Return
Spin-off	-2.040***	-1.424***	-0.670**	-0.34
	(0.66)	(0.55)	(0.31)	(0.27)
Ind_adjROA_t-1	-6.610***		-4.579**	
	(2.52)		(2.19)	
Spinoff x Ind_adjROA_t-1	2.606		6.322**	
	(4.94)		(2.66)	
Ind_adjRET_t-1		-0.218		-0.26
		(0.43)		(0.44)
Spinoff x Ind_adjRET_t-1		0.381		-0.994
		(0.57)		(0.75)
Boardsize_t-1	0.003	0.113	0.06	0.055
	(0.10)	(0.10)	(0.07)	(0.06)
BoardIndependence_t-1	-0.002	-0.008	0	-0.003
	(0.01)	(0.01)	(0.01)	(0.01)
BoardGenderDiversification_t-1	-0.036*	-0.049**	-0.019	-0.025*
	(0.02)	(0.02)	(0.01)	(0.01)
Duality_t-1	2.144***	1.817***	1.484***	1.237***
	(0.46)	(0.39)	(0.37)	(0.33)
PPE_t-1/TotalAssets_t-1	-0.331	-0.214	0.301	0.252
	(0.55)	(0.52)	(0.50)	(0.50)
REV_t-1/TotalAssets_t-1	0.650***	0.547**	0.667***	0.653***
	(0.23)	(0.22)	(0.21)	(0.22)
Firmsize_t-1	0.136	0.099	0.104	0.142
	(0.14)	(0.15)	(0.11)	(0.12)
StockVol_t-1	-7.352	-1.661	-1.334	-1.758
	(4.72)	(4.17)	(3.35)	(3.24)
CEOAge	-0.158***	-0.127***	-0.136***	-0.114***
	(0.03)	(0.03)	(0.02)	(0.02)
Constant	4.858**	2.955	2.996	1.941
	(2.35)	(2.27)	(1.90)	(1.85)
Observations	490	490	742	742
Chi-squared	76.60	96.20	88.70	106.42
Pseudo R-squared	0.22	0.18	0.16	0.15