The Hong Kong Polytechnic University

School of Accounting and Finance

Governance, Interest Alignment and Corporate Spinoffs

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Certificate of Originality

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Justin Law

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Submitted by Justin Law
for the degree of Doctor of Philosophy
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ABSTRACT

The fact that spinoffs create value is well established in the literature. I maintain that spinoffs create value by providing the firms an opportunity to improve interest alignment by re-negotiating the incentives of the CEOs of both the spinoff parent and the spun-off firms, thereby reducing agency costs. Using pay-performance sensitivity to proxy for interest alignment, I find that for the parent firms, spinoff brings a closer association between the change in the CEOs pay with both stock return and return on equity (ROE) after spinoff. In fact, similar results also hold for the spun-off firms. Although I do not find evidence to support my conjecture that focus-increasing spinoffs yields a stronger interest

alignment as compared to non focus-increasing spinoffs, this finding is still consistent with the result from Daley et al. (1997).

Following corporate governance and agency theory literature, I further examine the impact of four corporate governance constructs – board structure, committee independence, board activities and ownership structure – on the interest re-alignment benefit from spinoff transaction. I find that the overall corporate governance of both the parent and spun-off firms are associated with the interest alignment improvement from the spinoff transaction. In addition, the change in committee independence and the change in overall governance are associated with the interest alignment of the parent firms after spinoff. However, I do not find any association between the change in corporate governance and the interest alignment of the spun-off firms. The absence of results may due to the small sample size. Moreover, for both the parent and spun-off firms, the interest alignment improvement for stronger governance firms is not significantly differ from their counterparts with weaker governance. This finding suggests that both weak and strong governance firms gain similar interest alignment benefits. In spite of this, this result is consistent with findings reported by Ahn and Walker (2007).

In sum, my study documents evidence that spinoffs promote interest alignment between the CEO and the shareholders and corporate governance in the spinoff firms matters in this improvement. These findings augment the literature establishing that spinoffs create value by reducing agency costs.

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CHAPTER 1 – INTRODUCTION

1.1 Objectives and Motivation

Both finance and economics literature have recognized the significance of agency problems in organizations. The existence of agency problems arises, as suggested by Jensen and Meckling (1976), from the contracting nature of the firm. The separation of ownership and control in corporations leads to the owners having to rely on managers to operate on their behalf (Berle and Means 1932). The managers are thus the agents of the owners who are their principals. As individuals seeking to maximize their self-interest, the interests of the manager-agents and the owner-principals become misaligned and this misalignment is manifested as agency problems (Jensen and Meckling 1994). The agency problems translate into three types of costs borne by organizations, namely monitoring costs, bonding costs and the residual loss. These three types of costs are collectively known as agency costs.

The establishing of an effective internal control system in an organization is a means of curbing agency costs and promoting governance in organizations (Jensen 1996). An effective internal control system relies on a set of corporate

governance mechanisms, with the board of directors being the starting point, or "apex" (Fama and Jensen (1983)). An effective board can alleviate agency costs through its monitoring role. In particular, the board is responsible for such major corporate decisions as to mergers, re-organizations etc. Also, the board monitors the CEO by setting and implementing compensation, recruitment and termination policies and decisions. The effectiveness of a board depends on three dimensions and how it conducts itself in each or how each affects its conduct. The three dimensions are: board structure, committee independence and the board and committee meetings.

The effectiveness of a board is determined by its structure for the board characteristics (i.e. board structure) as these characteristics can enhance or impair their monitoring function. Independent outside directors, who do not have any business or family ties and have not been employed in the firm for the last 3 years, are free to openly express their views and issue directives to management without any job related constraints faced by insiders (Rosenstein and Wyatt (1990), Cornett, Marcus and Tehranian (2008), Chhaochharia and Grinstein (2009), Nguyen and Nielsen (2010)). The ability to function without fear or favor contributes to such a board being more effective in its monitoring of the management. Diversity in the composition of the board whether in terms of the

skill sets, professional backgrounds (accountancy, law, finance) or gender enriches and informs decision making as it makes available a broader spectrum of opinions and alternatives to the directors even as it avoids groupthink (Morck (2008), Cater et. al. (2003), Adams and Ferreira (2009)).

Meanwhile, four board characteristics – interlocked directors, busy directors, gray directors and CEO-chair duality – impair a board's monitoring role. Interlocked directors, who share directorship positions with inside officers in their respective firms, likely dampen a board's effectiveness by influencing each others' decisions with their mutual agenda (e.g. Hallock (1997), Core et al. (1999), Lacker et. al. (2005), Bizjak et. al.(2009)). The heavy workload of busy directors, who take up multiple directorships, are likely to be detracted from the efforts and focus in serving a particular board (Core et. al. (1999), Fich and Shivdasani (2006)). Moreover, the decisions of gray directors, who receive extra pay from another position in the same firm, are likely to be influenced by the additional remuneration they enjoy while serving as directors in the same company. (Core et. al. (1999), Nguyen and Nielsen (2010)). Where self interest dominates, monitoring of the management is going to be adversely affected. Where a CEO serves as the board's chairman, poor monitoring by the board is likely to result as all the board decisions will be overshadowed by the CEO's

self-interest. The tendency will be to encourage CEO entrenchment (Yermack (1996), Core et. al. (1999)).

Board committees comprise of independent outside directors enhance board monitoring as their decisions and opinion are more objective than would otherwise be the case (Klein 2002, Anderson et. al. (2004)). In addition, frequent board and committee meetings allow members to spend more time in carrying out their monitoring duties (Conger et. al. (1998), Karamanou and Vafeas (2005)). The frequency of meetings enhances the effectiveness of the board.

The ownership structure is another element in the firms' internal control system. Where members of the management team are also shareholders, this fact plays an important role in mitigating agency costs as the agent's financial stake in the ownership effectively binds together the interest of both agent and principal (Jensen and Meckling (1976), Jensen (1993)). Likewise, institutional investors may also mitigate agency costs as their ownership stakes leads them to actively monitor the management (Jensen (1993)).

Besides establishing an effective internal control system, corporate re-organization is an alternative means of curbing agency costs. A spinoff is a unique form of corporate re-organization in that, by allowing the firm to mitigate

the agency costs arise from a multi-divisional firm, it creates value without requiring any cash in the process. Specifically, spinoffs can reduce agency costs by dismantling internal capital market inefficiencies and by improving governance structures and contracting efficiency (Schipper and Smith (1983), Hite and Owers (1983), Aron (1991), Bruch and Nanda, (2003))

The internal capital market inefficiencies present in a multi-divisional firm give rise to agency costs. By breaking up the inefficient internal capital market, spinoffs mitigate the agency costs by allowing the firm to achieve investment efficiency. Post-spinoff firms appear to show a stronger positive association with the average industry Tobin's Q and average industry investment as compared to pre-spinoff firms (Gertner et al, (2002)). In spite of this, the spinoff firms' investment in low-Q segment does not change significantly after spinoff. However, post-spinoff firms do invest significantly more on high-Q segments (Ahn and Denis, 2004). Further, spinoffs reduce the investment diversity present in multi-divisional firms, resulting in excess value gain from the spinoff (Bruch and Nanda, 2003).

Spinoffs also reduce agency cost by improving the firms' governance structures. Seward and Walsh (1996) suggests that most of the members of the

boards of spun-off firms are outside directors and the compensation contract of their CEOs tend to be performance-based. Ahn and Walker (2007) show that the effective governance structure in spinoff firms results in a higher market-to-book valuation after spinoff.

Hite and Owers (1983) and Schipper and Smith (1983) postulate that spinoffs mitigate agency costs by improving contracting efficiency. Both studies use this hypothesis to explain the positive abnormal returns associated with spinoff announcements. Aron (1991) and Seward and Walsh (1996) indicates that spinoffs remove noise in performance signals, allowing firms to write performance-based contracts in a less costly manner.

The magnitude of agency problems in multi-divisional organizations is likely to differ according to their divisional diversity. Removing divisional diversity will therefore reduce the agency costs in these firms. Spinoff provides a means to remove divisional diversity by divesting a division with the same (non focus-increasing spinoff) or different (focus-increasing spinoff) industry as the parent firm. Daley et al (1997) indicate that divisional managers in highly diversified firms are likely to be protected from poor performance by cross-subsidization. They argue that focus-increasing spinoffs remove

inefficiencies resulting from cross-subsidization and thereby create more value as compared to non focus-increasing spinoffs. Schipper and Smith (1983) argue that writing and enforcing efficient performance contracts becomes more costly for firms with high transaction diversity. As compared to non focus-increasing spinoffs, focus-increasing spinoffs remove more transaction diversity from the divisional diversity. This allows the firm to write and enforce more cost-efficient incentive contracts. In essence, by removing inefficiencies associated with divisional diversity, focus-increasing spinoffs should create more value than non focus-increasing spinoffs.

Setting optimal CEO compensation contracts also plays an important role in mitigating a firm's agency costs; it encourage the CEO to act in the best interest to the shareholders (Holmstrom 1979). However, writing optimal CEO compensation contract is costly in multi-divisional firms because the operating complexities between divisions hinder market monitoring (Aron, 1991). Also, a CEO's performance is affected by uncontrollable factors present in multi-divisional firms (Hill, Hitt and Hoskisson, 1992). Spinoffs remove these contracting costs by separating the multi-divisional firm into two or more entities. Consequently, the post-spinoff firms will have greater incentive to write stronger performance-based CEO compensation contracts promoting closer alignment

between CEO and shareholders' interests ("the incentive alignment hypothesis"). Further, the removal of these contracting costs is more prominent in focus-increasing spinoffs than non focus-increasing spinoffs. The savings occur because the increased contracting costs that stem from business diversity are eliminated. Thus, focus-increasing spinoffs have greater incentive to write stronger performance-based CEO compensation contracts as compared to non focus-increasing spinoffs.

Compensation literature suggests that the interest of shareholders and managers can be aligned by giving the CEOs sufficient incentives to work towards the best interest of the shareholders. This is particularly true where CEO remuneration is closely tied to firm performance. The pay-performance sensitivity measure introduced by Jensen and Murphy (1990) captures the extent of interest alignment between the CEO and the shareholders. This implicitly reflects the magnitude of agency problem in the firm. Empirical evidence document that both the level of CEO's pay and pay-performance sensitivity are positively tied to firm performance (Hall and Liebman, 1998; Murphy, 1990; Conyon and Murphy, 2000). Alternatively, several studies suggest an inverse relationship between pay-performance sensitivity and a firm's riskiness due to the

agent's risk aversion (Aggarwal and Samwick, 1999; Jin, 2002; Garvey and Milbourn, 2003)[1].

A spinoff effectively increases the CEO's exposure to firm specific or idiosyncratic risk as the multi-divisional firm becomes less diversified after spinoff. Thus, the CEO may consider the spinoff as an opportunity to hedge against the increased risk exposure by re-negotiating his compensation contract. Consequently, the compensation contract will impair the interest alignment between the CEO and the shareholders ("the risk aversion hypothesis"). Since focus-increasing spinoffs involve divestiture of an unrelated business unit, the CEOs of focus-increasing spinoffs will be exposed to more idiosyncratic risk as compared to non focus-increasing spinoffs[2]. As a result, as compared to non focus-increasing spinoffs, the CEOs of focus-increasing spinoffs will have more incentive to renegotiate their compensation contracts to hedge against the additional risk exposure, which further impairs interest alignment between the CEOs and the shareholders.

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[1] Essentially, these studies suggest that pay-performance sensitivity is negatively associated with CEOs exposure to idiosyncratic risks. Meanwhile, the association between pay-performance sensitivity and CEOs exposure to systematic risks depends on the presence of other external factors such as the CEO's ability to trade the market portfolio, the cost for CEO to hedge the market portfolio etc. In spite of this, Cichello (2005) empirically shows that the negative association between pay-performance sensitivity and firm's risk is diminished once controlled for firm size.

[2] This is consistent with Huson and MacKinnon (2003), the authors find that firms undertake focus-increasing spinoffs are exposed to a higher level of firm specific risk.

This study maintains that spinoffs mitigate firms' agency problems from the incentive alignment perspective: a spinoff offers an opportunity for the parent to improve contracting efficiency by restructuring the CEO's compensation contracts. Such restructuring will bring a closer interest alignment between the CEO and the shareholders, thus removing agency costs and creating value for the spinoff. Using pay-performance sensitivity as a proxy for the level of CEO-shareholder interest alignment, this hypothesis is tested through a comparison of the pay-performance sensitivity for the pre-spinoff parent with the post-spinoff parent and the spun-off firm. The incentive alignment hypothesis suggests a positive change in pay-performance sensitivity of the parent and the spun-off firms after spinoff. In addition, the positive change in pay performance sensitivity will be more pronounced for parents of focus-increasing spinoffs as compared to non focus-increasing spinoffs. Meanwhile, the risk aversion hypothesis will predict the opposite.

If spinoffs mitigate agency costs by strengthening the CEO-shareholders' interest alignment, the established literature on agency theory and corporate governance (Jensen and Meckling (1976), Fama and Jensen (1984), Jensen (1996)) suggests that the firms' internal control systems will be likely to play a vital role in improving such interest alignments. Accordingly, this study examines the

hypothesis that the governance mechanisms present in spinoff firms are associated with the interest alignment improvement in both parents and spun-off firms. Since the firms with stronger governance are likely to minimize more agency costs from more efficient contracting improvements, the interest alignment improvement for stronger governance spinoff firms is expected to be more pronounced relative to spinoff firms with weaker governance. Using a composite corporate governance score capturing the four dimensions of firms' governance mechanisms, this study tests these two hypotheses by comparing the pay-performance sensitivity, augmented by the composite corporate governance score, for the pre-spinoff parent with the post spinoff parent and spun-off firms.

If both parent and spun-off firms achieve a closer interest alignment after the spinoff, this benefit is may be attributable to the improvement in corporate governance in the spinoff firms. This leads to the hypothesis that the post-spinoff pay-performance sensitivity of both parents and spun-off firms is associated with changes in their corporate governance produced by the spinoff transaction. This hypothesis is tested by analyzing the association between the change in average governance composite score before and after spinoff, and the post spin-off pay-performance sensitivity for both parent and spun-off firms.

1.2 Major Findings

Based on a sample of 71 firms spanning 1990 to 1997, the study finds that pay-performance sensitivity, on average, has significantly improved for both parent and spun-off firms after spinoff when stock return and return on equity (ROE) are used as market and accounting based measures of shareholder value. In other words, the empirical evidence supports the interest alignment hypothesis. The evidence is also consistent with the agency cost reduction explanation of how spinoffs create value. However, the evidence does not clearly support the interest alignment hypothesis for the incremental benefit gain from focus-increasing spinoffs. In spite of this, the result is still consistent with the findings of Daley et al (1997).

With respect to corporate governance, the results reveal that overall corporate governance of spinoff firms, measured by board structure, committee independence, board activities and ownership structure, is associated with the interest alignment improvement for both the parent and spun-off firms under both the market and accounting based measures of shareholders' wealth. Thus, the overall results indicate support for the conjecture that corporate governance does matter in the interest re-alignment of both the parent and the spun-off firms.

Also, among the four dimensions of corporate governance examined, change in committee independence and overall governance structure is associated with the post-spinoff pay-performance sensitivity of the parent firms. The result is consistent using both accounting and market-based measure of shareholders' wealth. However, no such association is observed for the spun-off firms. In spite of this, the weaker results observed for the spun-off firms may be due to the small sample size. Finally, evidence does not lend support to the hypothesis that the improvement in interest alignment is more pronounced for strong governance spinoffs as compared to weak governance counterparts. Stated alternatively, the evidence suggests that spinoff brings similar interest alignment benefit to both weak and strong governance parent and spun-off firms. Nevertheless, this result is consistent with the finding from Ahn and Walker (2007).

1.3 Contributions

By examining the change in CEO-shareholder interest alignment for the post spinoff parents, the spun-off firms and their predecessors along with the impact of the spinoff firms' governance on the interest alignment improvement; this study documents the empirical evidence which supports the interest alignment

explanation for spinoff value creation. Meanwhile, I acknowledge a few prior studies which raised similar arguments. Hite and Owers (1983) suggest improvement in contracting efficiency as a potential explanation to the positive abnormal returns associated with spinoff announcements. Similarly, Schipper and Smith (1983) explain the value created in spinoff[3] comes from the elimination of diseconomies of decision management and diseconomies of decision control. Aron (1991) merely provide a theoretical model to show that spinoff facilities writing and enforcing performance-based contracts but without empirical evidence. Seward and Walsh (1996) empirically show that spinoff enable firms to implement more efficient control systems by using a correlation matrix on data related to the spun-off units. Finally, Daley et al. (1997) test the corporate performance (proxy by change in return on assets) for both the parent and the spun-off unit around spinoff for the corporate focus versus the interest alignment hypotheses. Since performance improvement can only be observed for the parent, the authors conclude that the evidence supported the corporate focus hypothesis.

[3] The value is measured based on the abnormal return from spinoff announcements.

However, this study is different as I extend the contracting efficiency proposition to empirically examine CEO compensation contracts in spinoff firms. The consideration of compensation contracts using a long window event study is interesting as it offers an opportunity to test both the interest alignment and risk aversion hypotheses stemming from the executive compensation literature. To the best of my knowledge, this is the first long window event study which examines impact of CEO compensation contracts for spinoff firms. In addition, the use of pay-performance sensitivity methodology directly captures the extent of interest alignment improvement from the spinoff transaction.

Besides examining the CEO compensation contracts, this study illustrates the role of four aspects of governance towards the interest re-alignment for both the parent and the spun-off firms in this transaction. Although there is already a voluminous literature on corporate governance, governance literature examining the role of board committees and board meetings are considered sparse. The findings from the two dimensions of governance examined in this study provide additional contribution to this small yet growing strand of governance literature.

In sum, this study effectively links the spinoff transaction, pay-performance sensitivity, and corporate governance altogether, providing holistic empirical

support on the interest alignment improvement of spinoffs. The findings also provide an additional perspective on agency cost reduction explanation of spinoff value creation (Gertner et al, (2002), Burch and Nanda (2003), Ahn and Walker (2007)).

1.4 Organization of the Dissertation

The rest of this dissertation is organized as follows. Chapter 2 of this dissertation summarizes the relevant literature on the agency aspect of spinoff value creation, pay-performance sensitivity and corporate governance mechanisms. Chapter 3 presents the analysis on interest re-alignment from spinoffs through pay-performance sensitivity. Chapter 4 examines the relationship between corporate governance and interest re-alignment of spinoffs. The fifth and last chapter summarizes the findings, discusses the limitations of the study and identifies opportunities for further research.

CHAPTER 2 – LITERATURE REVIEW

2.1 Agency Cost Reduction and Spinoff Value Creation

A wealth of literature have documented that spinoffs create value for parent company (e.g. Hite and Owers, 1983; Miles and Rosenfeld, 1983; Schipper and Smith, 1983; Cusatis et al, 1983; Seward and Walsh, 1996; Daley et al, 1996; Daley et al, 1997; Dasai and Jain, 1999). Broadly speaking, current literature offers four broad explanations for spinoff value creation: (1) wealth transfer from bondholders to shareholders; (2) reduction of information asymmetry between managers and shareholders, (3) reduction of tax and regulatory costs, and (4) reduction of agency costs from conglomeration. Focusing on the agency cost reduction explanation, studies suggest that spinoffs can mitigate firms' agency costs by means of breaking up internal capital market inefficiencies and improving contracting efficiency.

The presence of agency problems in internal capital markets can lead to rent seeking and bargaining activities among divisional managers, resulting investment inefficiencies (Shin and Stulz, 1998; Scharfstein, 1998; Rejan et al, 2000; Scharfstein and Stein, 2000). Several studies have shown that spinoff effectively breaks up the internal capital market by separating the firm's divisions into

stand-alone companies and thereby mitigate such agency problems. By examining the investment behavior for firms before and after spinoff using Tobin's Q measure, Gertner et al (2002) find that investment in post spinoff firms exhibit a stronger positive association to Tobin's Q as compared to the pre-spinoff parent. Also, spinoff firm's investments move closely together with median industry investments and median industry Tobin's Q. In addition, spinoff firm in high Tobin's Q industries tend to raise industry-adjusted investment after spinoff and vice versa. Such observations are more prominent for spinoffs when the parent and spun-off unit are operating in different industries, and when there is a positive market reaction associated with the spinoff announcement.

Bruch and Nanda (2003) argues that disparity in investment opportunities among business units in conglomerates exacerbate rent seeking among divisions (diversity cost hypothesis), which manifests itself into diversification discount. Spinoffs effectively eliminate such divisional diversity in prior conglomerates and hence create value. This is supported by the evidence that the combined post-spinoff firm (i.e. parent and the spun-off unit together) excess value is higher than the pre-spinoff excess value. The improvement in excess value for spinoff firms is associated with reduction in firm diversity after spinoff.

Using industry-adjusted levels of investments, relative investment ratio and relative value-added to proxy for investment efficiency, Ahn and Denis (2004) indicates that the presence of investment inefficiencies in diversified firm partially explains diversification discount. Specifically, the pre-spinoff firms invest significantly more in its low-q segments than its high-q segments. Although the firms' investment in low-q segment does not change after spinoff, their investment in high-q segments significantly increased after spinoff. Further, such improvement in investment allocation is associated to improvement in excess value after spinoff. These results suggest that spinoff improve investment efficiencies, which in turn eliminated the diversification discount.

Similar to Bruch and Nanda (2003), McNeil and Moore (2005) also find evidence that the excess value for spinoff firms improved after spinoff. The authors attribute this to the improvement on the allocation efficiency of capital expenditure, which is consistent with Ahn and Denis (2004). They also find a positive relationship between spinoff announcement returns and investment allocation efficiency of the parent to the spun-off unit.

On the contrary, study from Colak and Whited (2007) suggest that the improvement in investment efficiency from spinoffs is merely an artifact of

endogeneity problem and measurement error. Since the spinoff sample is not randomly selected from diversified firms, it is possible that it is the firms themselves which choose to spinoff as a means to re-focus, causing the endogeneity problem. In other words, the improvement in investment efficiency is likely due to specific underlying characteristics inherited in spinoff firms. Also, measurement errors present in measuring Tobin's Q, a proxy used for unobservable investment opportunities in prior spinoff studies, help driving such conclusion. After controlling for both measurement errors and endogeneity problem, the authors find no evidence for investment efficiency improvement for spinoff firms.

Taken together, a common theme emerged from these studies suggests spinoff firms' exhibit a more efficient, value-enhancing investment behavior. Such improvement is driven by the absence of an inefficient internal capital market created as a consequence of prior conglomeration undertakings.

Another form of agency cost reduction from spinoffs is the improvement in contracting efficiency. Hite and Owers (1983) examines voluntary spinoffs during 1963 to 1981 and finds that spinoffs firms, on average, earn 7% abnormal return from 50 days before announcement to completion of spinoff. The authors

suggest that a source for such value gain comes from the improvement of contracting flexibility. Writing optimal contracts for the multidivisional firm as a whole may prevent writing optimal contracts for separate divisions, especially when the separate divisions operate in specialized industries. Spinoff therefore allows the parent and the spun-off units to write optimal contracts to better achieve the unit's specialized comparative advantage. Consequently, the gain from contracting efficiency increases shareholders' value.

Schipper and Smith (1983) also examine voluntary spinoffs under the same period as Hite and Owers (1983) and they find a significant positive market reaction associated with spinoff announcements. An explanation offered by the authors on such positive market reaction is that spinoff removes the diseconomies of decision management and decision control arises from prior firm expansion. As the firm's transactions diversity and amount increases during the course of its expansion, the firm may find it costly to produce and disseminate investment-facilitating information (diseconomies of decision management), evaluate and reward managerial performance, and suffer residual loss from shirking efforts (diseconomies of decision control). The costs from such diseconomies eventually outweigh the gain from economy of scale. Given that spinoff effectively split up the transaction diversity and amount to the parent and

the spun off entity, prior diseconomies is eliminated. Thus, this transaction brings value to shareholders.

Using an analytical model, Aron (1991) shows that spinoffs can facilitate writing and enforcing performance-based incentives contracts for divisional managers. While a division is still reside as part of the multi-divisional firm, evaluating a divisional manager's performance by using the firm's stock price is difficult to motivate the divisional manager. It is because the multi-divisional firm's stock price is a noisy signal in reflecting the true performance of the divisional manager. However, once the division is spun off from the firm, the divisional manager performance is directly monitored by the capital market. Thus, it is easier to write and enforce performance-based incentive contracts as the performance signals become much cleaner after spinoff.

Recent spinoff studies suggest a source of spinoff gain comes from the improvement in internal control and governance systems. Thus mitigate the agency costs present in pre-spinoff firms. Seward and Walsh (1996) finds evidence suggests that spinoff firms demonstrate efficient internal control and governance systems. Specifically, both the board of directors and the compensation committee of the spun-off firms are comprised of mostly outside

directors. Also, CEO compensation in spun-off companies, on average, receives 77% performance-based compensation. Nevertheless, improvement in contracting efficiency, governance and control practice does not strongly related to the abnormal return from spinoff announcement.

Another study from Ahn and Walker (2007) finds that firms' with better governance in terms of board composition and board size are more likely to engage in spinoffs. Compared to the matched peer firms, the board of directors in pre-spinoff firms which characterized by having fewer board members, more heterogeneous, and higher external board member ownership are more likely engage in spinoff. The stronger governance system established in the spinoff firms, in turn, brings larger market-to-book improvement to the spinoff firms as compared to their matched peers. This evidence is consistent with the view that spinoff creates value by reducing agency costs from conglomeration.

In sum, both theoretical and empirical literature suggests that spinoff creates value as it provides the flexibility for the firm to write and enforce performance-based incentive contracts, which motivates the managers' performance. Also, empirical evidence suggests that the post spinoff firms exhibit stronger corporate governance systems, leading to increase in firm value.

These findings are consistent with the agency cost reduction explanation on spinoff value improvement.

2.2 Corporate Focus and Spinoff Value Creation

Besides examining the value created from spinoff in general, one area of spinoff research studies the differential value improvement for focus-increasing versus non focus-increasing spinoffs. Focus-increasing spinoff refers to spinoff where the spun-off firms' business operation is different from the pre-spinoff entity, and vice versa for non focus-increasing spinoffs. In general, prior studies find that focus-increasing spinoffs create more value than non focus-increasing spinoffs. Daley et al (1997) find that only focus-increasing spinoffs are associated with significant positive abnormal returns around spinoff announcement. Also, return on assets for focus-increasing spinoffs improved significantly after spinoff. However, such improvement cannot be observed for non focus-increasing spinoffs. The authors suggest that performance improvement may due to the increased focus of managers' expertise in managing their core business (corporate focus hypothesis). Consequently, the performance improvement can only be observed from the parent. Alternatively, the performance improvement may also due to the opportunity for the firm to write

improved incentive contracts, which better align the interests between shareholders and managers (incentive alignment hypothesis). In this case, both the parent and the spun-off unit should result in performance improvement. The empirical evidence lends support to the corporate focus hypothesis.

Examining the same period of spinoff firms as Daley et al (1997), Desai and Jain (1999) find that focus-increasing spinoff yields a significantly higher abnormal returns than non-focus increasing spinoff during the announcement period and in the long run. They also find direct evidence that the announcement period abnormal return is positively associated with change in operating performance and change in focus. Such results suggest that firms becoming more focus yield favorable response from the market. In addition, it also brings operating improvement in the long run.

2.3 CEOs' Performance, Risk Aversion and Compensation

2.3.1 CEO interest alignment and pay-performance sensitivity

Jensen and Murphy (1990) seminal article on executive compensation defines pay-performance sensitivity as the change in CEO's wealth associated with change in shareholders' wealth. This measure captures the magnitude of interest alignment between CEO and shareholders. Contracting theory suggests that the higher the pay-performance sensitivity, the lower the agency conflict between the shareholders and CEO. Based on a sample of 2,213 CEOs compensation during 1974 – 1986, the authors find a significant positive association on CEOs' pay performance sensitivity. Meanwhile, they also documented that the average US executives' all-inclusive pay (including compensation, shareholdings and dismissal) changes at a rate of $3.25 dollars for every $1,000 change shareholders' wealth of their firms. Given such finding, Jensen and Murphy concluded that the magnitude of CEO compensation is too small to be effective. They attribute the low pay-performance sensitivity to the presence of political forces in the contracting process.

Subsequent study from Kaplan (1994) further shows that the positive pay-performance sensitivity is also observed in Japanese CEOs. Specifically, the

author examines whether the relationship between executives pay, turnover and firms' performance measures (such as stock returns, earnings and sales growth) for CEOs are different in Japan as compared to the U.S. Such difference is plausible as Japan is based on a bank and relationship oriented governance system whereas the U.S. is based on a market-oriented system. However, based on a sample of 119 Japanese firms and 146 U.S. firms in 1980, the author finds a positive pay-performance sensitivity relationship for Japanese firms. Moreover, the pay-performance relationships are similar between firms in the two countries concerned.

Using a more recent CEO compensation sample (1980 – 1994), Hall and Liebman (1998) also document a strong association between CEOs pay and firm performance, the strong association is related to the significant increase in using stock and stock options for CEO compensation since 1980. They attribute the strong pay-performance sensitivity to the value change in CEO's stock and stock options holdings. Meanwhile, relative performance is not a significant component of CEOs compensation. Based on the result, the authors argue that CEO is not pay like bureaucrats as Jensen and Murphy (1990) suggested.

Murphy (1999) examines pay-performance sensitivities and elasticities from 1971 to 1996. The author finds that both pay-performance sensitivities and elasticities were tripled during 1990-1996 across major industries in U.S. The sensitivities are driven primarily by stock options and stock ownership. Industry variation tends to play a role in explaining variation in pay-performance sensitivity. In fact, pay-performance sensitivity is particularly lower in regulated industries. Moreover, the relationship between CEO cash compensation and stock return has increased during the 25-year period and that the annual variation in pay-performance sensitivities appears to be higher than pay-performance elasticities.

Conyon and Murphy (2000) compare the difference in CEO compensation between United States and United Kingdom in 1997. The study reveals that after controlling for factors such as size, growth opportunities, and industry etc., US CEOs on average earns 45% more cash compensation, and 190% more total compensation than UK CEOs. Although the pay-performance elasticity for cash compensation is higher for US CEOs, it is significantly higher only for the financial services sector. Also, the pay-performance sensitivity on stock and stock options components of US CEOs compensation is significantly higher than the UK counterparts. The authors argue that such stylized findings are due to the

tax and cultural differences, rather than the difference in productivity and capability of CEOs between the two countries.

Perry and Zenner (2001) examine the effect of government regulations on executive compensation and pay-performance sensitivity. The introduction of SEC disclosure rules and IRS code section 162m in 1992 – 1993 requires companies to enhance executive compensation disclosure and limit the non-performance related compensation to one-million dollars. Both regulations are aimed at reducing excessive compensation received by executives. By examining the firms' compensation structure before and after these new regulations, firms most likely to be affected by these regulations reduce salary growth rate after 1993. Also, for CEOs receiving compensation close to or higher than one million, their pay-performance sensitivity increased from 1993 – 1996 after controlling for factors affecting CEO incentives.

Rather than focusing on CEO compensation, Gillan Hartzell and Parrino (2009) investigate CEOs' employment contracts as their compensation, benefits and turnover is merely an outcome of the employment contract. The authors find that less than half of the S&P500 companies had comprehensive written (explicit) employment contracts with their CEOs. Explicit contracts are used at firms

operating in more uncertain environment and the contract altering costs is considered as low. In addition, CEOs who are hired from outside, compensated with larger portion of incentive-based compensation and expected to earn abnormal compensation at their firms will likely have explicit employment contracts. Besides, explicit contracts for outside-hired CEOs are on average, about 1-year longer than internally promoted ones. Finally, CEOs with higher possibility to have their contracts altered will have an explicit agreement protects against such possibility on top of their explicit employment contracts.

Hartzell and Starks (2003) examine the role of institutional investors on corporate governance through monitoring and influencing CEO compensation. The authors find a negative association between the level of CEO compensation and institutional ownership concentration after controlling for firm size, investment opportunities, recent performance and industry. Moreover, there is a strong positive association between institutional ownership concentration and CEO pay-performance sensitivity. Such findings suggest that presence of institutional ownership do influence CEO pay structure. Moreover, they also find a positive significant relationship between the percentage of shares held by institutional owners and CEO pay-performance sensitivity, suggesting that

institutional investors prefer to invest in firms with high CEO pay-performance sensitivity.

In sum, these studies documented that pay-performance sensitivity measures the bonding between CEO incentives and shareholder value. A stronger bonding represents a closer alignment between CEO and shareholders. Empirical evidence suggests on average, such bonding has become stronger over time. Firms with stronger incentive alignment and institutional investor monitoring do exhibit higher pay-performance sensitivity. Also, the increasing use of equity and performance based components plays a key role towards improving pay-performance sensitivity.

2.3.2 CEO risk aversion and pay-performance sensitivity

One strand of executive compensation literature examines the relationship between risks and incentives. The tradeoff in inducing the agents' effort versus reducing the agent's risk in a classical agency model suggests an inverse relationship between firms' riskiness and pay-performance sensitivity. By computing the numerical solutions for the agency models provided by Grossman and Hart (1983) and Holmstrom and Milgrom (1987), Haubrich (1994) shows the possibility to match standard principal-agent theory to Jensen and Murphy (1990)

empirical results. The author also shows that a small magnitude of risk aversion can result in low pay-performance sensitivity. Nevertheless, a low level of risk aversion can result in low pay-performance sensitivity, and low pay-performance sensitivity can still provide incentives to increase firm value substantially.

By performing a direct test on the comparative static predictions from the standard principal-agent model, Aggarwal and Samwick (1999) report a negative association between pay-performance sensitivity and riskiness of firm's performance (measured by variance of the firm's returns). Specifically, the executives' pay-performance sensitivity, based on various components of executive compensation, is greater in magnitude for firms with highest stock price volatility as compared to firms with lowest stock price volatility. This empirical evidence lends strong support to the results from standard principal-agent models. In addition, they find that pay-performance sensitivity estimates without controlling for risk (variance of firm's returns) can lead to a downward bias.

Unlike prior studies which focus on the impact on total risk and CEOs incentives, Jin (2002) investigates the relationship between CEOs incentives and the systematic and firm specific component of total risk from both theoretical and empirical perspectives. His model shows that the pay-performance sensitivity is

decreased with firm-specific risks regardless to whether CEOs can trade the market portfolio. Meanwhile, the relationship between pay-performance sensitivity and systematic risks also depends on whether CEOs can trade the market portfolio. When CEOs cannot trade the market portfolio, this relationship depends on other factors such as the level of CEOs risk aversion and the CEOs exposure to market risk in the compensation contract. On the contrary, this relationship is not present when CEOs can trade the market portfolio. The empirical findings support all the predictions from the model.

Garvey and Milbourn (2003) analyze the relationship between the use of relative performance evaluation and the CEOs ability to hedge market risk. Consistent with Jin (2002), their analytical model also find that optimal pay-performance sensitivity decreases as firm-specific risk increases. In fact, optimal pay-performance sensitivity also decrease as systematic risk increases when (1) providing relative performance evaluation is costly to the firm and (2) hedging systematic risk privately is costly to the CEO. Optimal pay-performance sensitivity becomes independent to systematic risk when the above conditions become costless. Furthermore, firms will offer more relative performance evaluation when the cost for CEO hedging systematic risks increases, and vice versa. Their empirical findings are consistent with model predictions.

A recent study from Gao (2010) documents a negative association between pay-performance sensitivity and the executive's effort to diversify their firm-specific risks by hedging his incentive portfolio. He argues that if it is less costly for the executive to access the hedging market on his incentive portfolio, the idiosyncratic risks faced by the executive is reduced, thereby increases the executive's ability to bear the firm's risk. As a result, the executive will have less incentive to work towards his performance contract. Stated alternatively, the executive's access to the hedging market effectively increases the executive's risk tolerance level, therefore firms will raise the incentive components in his/her compensation contract (i.e. increase pay-performance sensitivity) in order to induce optimal effort. Also, firms' with executives having easier access to the hedging market have higher financial leverage. The author attributes such use of debt as a substitute to mitigate the executive's hedging problem.

Despite these consistent findings regarding the negative association between risk aversion and pay-performance sensitivity, Cichello (2005) argues that the empirical results from Aggarwal and Samwick (1999) are mostly driven by firm size. Using a comparable data set as Aggarwal and Samwick (1999), the negative association between pay-performance sensitivity and stock volatility diminished substantially after controlling for firm size. He also pointed out that

firm size has a profound effect on pay-performance sensitivity when performance is measured in dollar terms.

The general conclusion from these studies suggests CEO risk aversion have negative impact the optimal incentive level in CEO compensation and pay-performance sensitivity. In particular, pay-performance sensitivity is negatively associated with idiosyncratic risks whereas its association with systematic risk depends on factors such as CEOs ability to trade the market portfolio, CEOs cost to hedge market risk privately and the firm's cost to provide relative performance evaluation.

2.4 Agency Problems & Corporate Governance

The need for corporate governance in organizations can be traced back to the theory of the firm. The seminal paper from Jensen and Meckling (1976) suggests that the firm is a "nexus for a set contracting relationships among individuals". In other words, firms are simply a legal entity comprises entirely of contracts. If the parties in the contracting relationships are utility maximizers, the principals and agents will likely have divergent interests and as a result, the agents will not be acting in the best interest of the principals. Facing this dilemma, the principals establish costly monitoring or bonding mechanisms in

order to limit the agents' divergent interests, and suffer the remaining losses (residual loss) which cannot be mitigated through the above mechanisms. The costs and losses borne by the principals as a result of the contractual relationship are collectively known as agency costs.

Fama and Jensen (1983) argue that proper control in the organizational decision process is essential to mitigate agency problem in firms, especially when there is separation of ownership and control in organizations. The authors separate organizational decision process into two functions: decision management (initiation and implementation of decisions) and decision control (ratification and monitoring of decisions). Given the self-interested nature of the agents, they will likely engage making decisions which deviate from the principals' goals. This problem will be exacerbated in the absence of effective decision control mechanisms. Therefore, an important measure to mitigate agency problems is to separate decision management and decision control functions. The authors considered the board of directors being the "apex of decision control systems" in organizations.

The importance of the board of directors in corporate governance is further reinforced by Jensen (1993). According to Jensen, the product market bears excess capacity during the course of industry advancement and development. Without an efficient exit mechanism for organizations, a continual build-up of excess capacity will result. Consequently, such excess capacity will translate into wastage of resources in organizations and society as a whole. There are three possible avenues through which organizations can exit: the capital market, the legal, political and regulatory system, the product and factor market. Given all these mechanisms are being inefficient in removing excess capacity, the author argue that the firms' internal control system becomes plays a vital role to preserve organization assets and to avoid further wastage in organizations. Ineffective internal control mechanisms will lead to poor corporate governance, which in turn, crates excess capacity and wastage. Jensen further argues that the effectiveness of a firm's internal control systems starts with the firm's Board of Directors. In order to enhance the Board of Directors' effectiveness in monitoring organizations, he suggests the board should promote a critical culture, include members with financial expertise, confine to a small size, invite blockholders and active investors as board members, separate CEO and Board Chairmanship and adopt equity based compensation for Board members.

Taken together, the literature suggests that agency problems inherit in firms are due to its contractual nature. The presence of proper internal control mechanisms can mitigate agency problems and therefore induce good corporate governance. Meanwhile, the effectiveness of the board of directors plays a significant role in the internal control mechanisms in firms. Therefore, the boards' effectiveness has significant implications on the firms' agency problems and governance.

2.5 Corporate Governance Mechanisms

Shleifer and Vishny (1997) describe corporate governance mechanisms as "economic and legal institutions" to assure investors getting a return on their investment. Prior studies have broadly identified two separate and yet related classes of corporate governance mechanisms, one being country level and another being firm level. Studies on country level corporate governance examines the impact of the country's legal regime on investors' protection, which consequently affect firms' internal governance, firms' performance, financing and dividend decisions.

La Porta, Lopez-de-Silanes, Shleifer and Vishny (hereinafter "LLSV") (1997) examines the legal rule character and law enforcement quality for 49 countries

and find that civil law countries has weakest investors' protection and least developed capital markets when compared to common law countries. Also, countries with poor investors' protection are associated with smaller and narrower debt and equity markets. Such findings are consistent with the findings in LLSV (1998). Furthermore, the authors find that investors' protection is negatively associated with the ownership concentration.

La Porta, Lopez-de-Silanes and Shleifer (1999) study the ownership structure of large companies in 27 countries under different legal regimes. The authors find that the sample firms are typically family-controlled or state-controlled, with the exception of companies residing in countries with excellent investors' protection. Also, ownership control by financial institution is considered rare. Such finding is consistent with Claessens et. al (2000), which document that more than two-thirds of the sample firms in nine East Asian countries are controlled by a single shareholder.

LLSV (2000) argue that using differences in legal regime in examining corporate governance is more useful than the conventional way of using the bank vs. market-based financial systems. The authors also develop a model to explain the impact of legal protection and controlling shareholder cash flow ownership on

firm value. Specifically, the model suggests that firms in stronger investor protection jurisdiction and firms with higher cash flow ownership by controlling shareholder should have higher firm value. Empirical evidence with 539 firms from 27 countries support the model.

The relationship between country-level and firm-level governance is studied by Klapper and Love (2004). Using a sample of firms across 25 emerging markets, the authors document that firm-level governance has a strong positive association with the country-level governance, proxy by the countries' legal protection. Also, good firm level corporate governance is more important in countries with weaker legal systems.

Studies of firm level corporate governance mechanisms examine the impact of various internal control mechanisms within organizations on various corporate financial decisions and firm value. In fact, the governance mechanisms examine in this study is entirely at firm level as the spinoff firms are all drawn from one country, namely the United States. Among the wide spectrum of literature on firm-level governance mechanisms, this study examines three representative aspects: board and committee structure, board and committee activities, and ownership structure.

2.5.1 Board Structure and Committee Structure

One evident aspect which greatly impact board's effectiveness is the membership composition of the board and board committees. The following examines prior literature on the following aspects of board structure and their influence towards corporate governance: independent outside directors, female directors, interlocked directors, busy directors, gray directors and CEO-chair duality. Independent outside directors will be examined first in the next section, followed by another section which examines the remaining board structure elements.

Independent outside directors are directors who appointed externally with no other existing or former relationship(s) (e.g. business, bloodlines, employment etc.) with the incumbent firm other than the directorship role. Two board members are considered as interlocked when they sit on each other's board. Consistent with definition provided by National Association of Corporate Directors (NACD) guidelines (1996), busy directors are directors who serve on three or more corporate boards. Gray directors are directors who receive additional compensation, other than usual directors' fees, for additional services (e.g. legal,

consultancy etc.) rendered to incumbent firms. CEO-chair duality refers to the situation where CEO also serves as the chairman of the board.

2.5.1a – Independent and Outside Directors

According to a study by Rosenstein and Wyatt (1990), announcement of outside director appointment is associated with significant positive excess returns. This effect is observed even though the boards concerned are dominated with outside directors. The study defines outside directors as directors who are not present or former employee of the firm and the only formal connection with the firm is the directorship duties. The authors conclude that outside directors monitoring outweighs costs associated with managerial entrenchment.

Based on 128 tender offer bids from 1980 to 1987, Byrd and Hickman (1992) document that bidding firm with outside independent directors holding at least 50% board membership is associated with significantly higher announcement date abnormal return than other bidders, except when independent directors hold a very high proportion of board seats. The authors' definition of independent directors is consistent with Rosenstein and Wyatt (1990). Such evidence supports the monitoring role of independent directors.

Monitoring role from independent directors is further evidenced by a study by Uzen, Szewczyk and Varma (2004). The authors examine the association between board composition and incidence of corporate fraud. Based on a sample spanning from 1978 to 2001, firms with fraud incidences has a lower percentage of outside and independent directors in boards as compared to their counterparts.

Drawing from 275 Fortune 500 firms between Year 1995 to 2000, Karamanou and Vafeas (2005) find a positive association between quality of firms' governance and management forecasts (as a proxy for quality of voluntary financial disclosure). In particular, firms with higher board independence and institutional ownership are more likely to make and update their management forecasts. In fact, the forecast accuracy for these firms is also higher. As a whole, the authors contend that effective firm governance promote better voluntary disclosure quality and firm transparency.

Study from Cornett, Marcus and Tehranian (2008) argue that the presence of independent outside directors can promote better governance by mitigating earnings management. Based on a sample of U.S. firms from 1994 to 2003, the authors empirically show a negative association between percentage of outside independent directors and the amount of discretionary accruals (as a proxy for

earnings management). Also, percentage of outside independent directors is positively associated to firm performance with or without adjusting for the impact of earnings management.

After the Enron and Worldcom crises, Sarbanes-Oxley Act and the new rules of major exchanges was introduced. The new rules cause changes to board structure. Taking advantage of the absence of endogenity problem from this setting, Chhaochharia and Grinstein (2009) study the impact of changes in board structure due to new regulations and CEO compensation. Since the new rules are purposely designed to enhance board oversight, the study provides additional empirical evidence on board's monitoring effort on CEOs' pay. Focusing on three governance variables affected by the new rules (majority of independent directors on board, independent nominating committee and independent compensation committee), the authors find that the newly complied firms (non-compliant before the new rules becomes effective) reduce CEOs pay by 17% as compared to those which has already complied previously. Moreover, the association (between CEO compensation and governance variables affected) is only significant for board independence.

Nguyen and Nielsen (2010) study the stock price reaction on the sudden death of independent directors from 1994 to 2007. Following Rosenstein and Wyatt (1990)'s definition of outside (independent) director, sudden death of independent director significantly reduce firm value by 0.85%. The reduction is significantly more negative as compared to sudden deaths of gray directors and inside directors. In addition, the marginal value of independence is higher for boards with fewer outsider directors and when the deceased independent director served as chairmanship or committee membership. Such evidence therefore supports the contention that the monitoring role of independent directors adds value to shareholders.

Despite these findings, a number of studies find no relationship or even negative relationship between board independence and board effectiveness. Hermalin and Weisbach (1991) find no relationship between board composition and performance, measured using Tobin's Q, for 142 public utilities firms. Although insufficient power in the empirical tests can be one potential reason leading to such result, the magnitude is of little economic significant even if the association is statistically significant. Therefore, the authors suggest that the inside and outside directors acts the same way in representing shareholders' interests.

Agrawal and Knoeber (1996) examine the association between firm performance and seven governance mechanisms using 400 large US firms. Empirical results suggest a negative relationship between outside directors and firm performance, even when the estimation is done together with other six governance mechanisms. Moreover, examining all seven governance mechanisms together in a simultaneous systems framework, outside directors remains the only mechanism that has a significant negative relationship with firm performance. Given such puzzling results, the authors conjecture that boards' expansion is a function of political objectives. In other words, companies will invite politicians, environmental activists, or consumer representatives to sit on board during the course of their expansion. However, their presence may reduce firm performance.

Core et al. (1999) study the relationship between firms' governance mechanisms and CEO compensation. The authors argue that poor governance in firms leads to poor monitoring, promoting CEO entrenchment, and ultimately pays himself a more handsome remuneration package. This study uses percentage of insiders and gray directors to proxy for boards' independence. Gray directors impair boards' independence as their decisions and views can potentially be influenced by their additional capacity assumed in the firm. These

additional ties to firms impairs' their independence and hence, their monitoring role. Their empirical findings indicate that CEO compensation is negatively related to inside directors, but positively related to gray directors, after controlling for economic variables on CEO compensation. This result is consistent with the notion that internal director can monitor management as equally good as outside directors, and that gray directors are ineffective monitors.

Based on 934 U.S. firms spanning from Year 1985 to 1995, Bhagat and Black (2002) study the association between board independence and firm performance. In addition, they examine whether board composition changes in response to change in firm performance. Consistent with Agrawal and Knoeber (1991), the authors also find a negative association between board independence and firm performance. In addition, low profitability firms increase the proportion of independent directors on their boards in the hope of turning around their performance. However, this strategy does not improve profitability. Such findings suggest that "monitoring board" (board that comprised almost entirely of independent directors) may not be a key component towards good corporate governance and the authors encourage firms to experiment with other types of board structures.

Taken together, the evidence on the impact of independent director and board effectiveness is mixed. Meanwhile, a strand of studies indicates whether the inclusion of independent director affect board's effectiveness depends on the firm's operating environment. Coles, Daniel and Naveen (2008) argue that complex firms, such as large firms, diversified firms, and firms which rely more on debt financing, have more outside directors on their boards as compared to simple firms. It is because complex firms have higher advising requirements, which can be met by having outsiders possessing with wide array of expertise. In addition, R&D- intensive firms should have more insiders on their boards and such board structure should be associated with higher firm performance. The rationale is that the performance of R&D intensive firms relies heavily on firm-specific knowledge, which can only be satisfied by having more insiders on their boards. Empirical evidence from 8,165 firm-year observations during 1992 – 2001 supports the authors' conjectures.

Recent evidence from Duchin, Matsuaka and Ozbas (2010) suggests that outside directors' effectiveness is a function of their ability to acquire information about the firms, proxy by the availability, homogeneity and accuracy of analysts' quarterly earnings forecasts. Specifically, the authors document that adding outside directors to board has no impact on firms' performance on average.

However, adding outside directors to board significantly improve firms' performance when their cost of acquiring firms' information is low, and impair performance when their cost of acquiring firms' information is high.

2.5.1b – Other Board Structure Elements

In this section, I survey major studies on the following elements of board structure: interlocked directors, gray directors, busy directors, female directors and CEO-chair duality.

Prior studies have documented the impact of interlocked board members on boards' effectiveness. Hallock (1997) study the association between CEO pay and board composition. In particular, using 602 firms in 1992, he finds that firms with interlocking boards pay CEO significantly higher as compared to firms without interlocking boards. However, such effect disappears once controlled for CEO characteristics. This finding provides some evidence that interlocking boards impair board effectiveness.

Core et al. (1999) also document a positive association between interlocked directors and CEO compensation, suggesting that interlocked outside director is associated with weak corporate governance. However, this association is not

significant at conventional levels once the CEO characteristics are controlled for. The authors considered such result is consistent with the Hallock (1997).

Using a sample of 452 U.S. firms throughout the years of 1984 – 1991, Fich and White (2003) show that sample firms with one or more interlocked director(s) on board tends to pay CEO more and experience lower CEO turnover. The authors interpret such results as evidence of CEO entrenchment. Specifically, boards with interlocked directors' create powerful alliances which allow CEO to extract handsome compensation package and strengthen their entrenchment. From this perspective, interlocking boards impairs firms' governance and exacerbate firms' agency problems.

Lacker et. al. (2005) apply social network analysis to investigate the impact of interlocked director and CEO compensation. The authors uses a "back door" distance (defined as the minimum number of firm boards, other than directors on the same board, required to establish a link between pairs of directors) to measure the strength of communication channel over through which board members can exert their influence. Empirical evidence using 22,074 directors for 3,114 firms indicate that CEO earns a substantially higher total compensation when they sit on boards which inside and outside director has a very short "back door" distance, or

when CEO and members of the compensation committee has a very short "back door" distance. The authors conclude from this finding that boards' monitoring function is hampered in the presence of "cozy" board members' relationships.

Using social network analysis as Lacker et. al. (2005), Barnea and Guedj (2006), the authors examine the impact of boards in firms with better connections with other firms (i.e. more connected boards) and CEO compensation. They document that after controlling for factors affecting CEO compensation (e.g. firm size, investment opportunities etc.), CEO receives higher salary in firms with more connected boards. Such finding is consistent with Lacker et. al (2005). Also, the difference in CEO compensation between the top and bottom quintile of connected firms amounts to 10% in salary and 13% in total compensation. The degree of connectedness is measure in three dimensions: degree, closeness, and betweenness. In addition, members of connected boards who enjoyed higher pay are more likely grant a higher CEO salary as compared to those who have not exposed to such high salaries.

Bizjak, Lemmon and Whitby (2009) examine whether the interlocking boards are associated with the practice of backdating employees stock options. The authors find that those firms with a board member who interlocked to another

firm that previously backdated their stock option will likely engage in the same practice approximately one-third of the time. Thus, board interlocks is strongly related with the practice of option backdating. Given that option backdating is a result of agency problems, this study provide additional evidence suggesting that interlocking boards is associated with ineffective governance.

Prior studies also examine whether board diversity improves firms' governance. According to Morck (2008), diversity in boards is important as it mitigates our innate predispositions to submit to authority, such as CEO in firms. As a result, it will lead to boarder viewpoints and less groupthink. Using percentage of female and minority directors on boards as proxy for board diversity, Carter et al. (2003) documents a positive association between board diversity and Tobin's Q. This result is robust even after controlling for factors such as size, industry and other corporate governance measures. Thus, the authors conclude that board diversity is related to firm value.

Evidence from Farrell and Hersch (2005) indicate a positive association between the likelihood of adding a female director on board and return on assets. Also, the authors find that better performing firms tend to have more female directors on board. However, adding female directors is not associated with

significant market reactions. Such evidence suggests that gender diverse boards may not generate higher firm performance.

Adams and Ferreira (2009) study the impact of female directors on firms' governance and performance. They document that female directors attend more meetings than male directors, and female directors tend to join monitoring committees. CEO turnover is more sensitive to performance, and directors receive more equity based compensation in firms with stronger gender diverse boards. Also, gender diversity boards add value to companies with weak shareholders rights. However, in overall, firms perform worse on average when there is greater gender diversity on board. Such results suggest board diversity is associated with more monitoring to the boards. Meanwhile, too much monitoring will impair firms' performance.

CEO being the chairman of the board (CEO-chairman duality) is a board characteristic which impairs boards' effectiveness. It is because this role duality allows CEO to dominate over all boards' decision and therefore, encouraging CEO entrenchment. Yermack (1996) find that firm value is positively associated with non CEO-chairman duality, although the coefficient is marginally significant. Core et. al. (1999) also CEO-chairman duality is associated with higher CEO

compensation, again supporting the notion that CEO-chairman duality being a characteristic of weak corporate governance.

Altogether, prior studies suggest that boards with interlocked directors, busy directors and CEO as chairman lessen boards' effectiveness in executing their monitoring role. However, the presence of female directors on board increases board diversity and is positively associated with board's monitoring function.

2.5.1c – Board Committee Structure

Besides serving both monitoring and guidance roles from the board as a whole, the sub committees of the board are also delegated in executing these two roles. Thus, the impact of board committees' structures on boards' effectiveness becomes an interesting issue. Typical sub-committees in boards includes compensation committee, which is responsible for overseeing CEO and senior management's compensation policy; audit committee, which is responsible for monitoring corporate fraud and the audit function in corporations; nominating committee, which is responsible for directors' nomination; finance or investment committees, which oversees major capital expenditure and financing decisions.

Klein (1998) classifies board committee into two types. The first type is for the purpose of monitoring management (monitoring committees), which includes audit, compensation and nominating committee. The second type is for the purpose of evaluating firms investing and financing decisions (productivity committees), which comprises finance, investment and strategic development committees. She finds that monitoring committees comprises disproportionately of outside directors whereas productivity committees comprises disproportionately of inside directors. Also, the ratio of outside directors in monitoring committees is associated with benefits of monitoring, namely outstanding debt and free-cash flow. Further, the ratio of insiders in productivity committees is associated with relative net income, capital expenditure productivity and stock returns. Such evidence suggests independence of monitoring committees is important towards their role.

Another study from Klein (2002) examines the impact of audit committee characteristics and earnings management. Using abnormal accruals as a proxy for earnings management, the author document a negative association between the magnitude of abnormal accruals and the percentage of outside directors in audit

committee (proxy for audit committee independence)[4]. Also, firms change their boards/audit committees from a majority to a minority of independent directors are associated with significant increases in abnormal accruals as compared to their counterparts. Such findings are consistent with the view that auditor independence promotes board monitoring and thereby reducing earnings management.

Anderson et al. (2004) extend Klein's study by investigating the relationship between committee independence and the cost of debt. The authors argue that audit committee independence enhance better monitoring of financial reports, which will be used for creditors for lending arrangements. Accordingly, the authors find that firms with fully independent audit committee experience a 15% basis point lower cost of debt as compared to those with insiders and affiliates members on the audit committee.

Prior studies have also examined whether the independence of compensation committee affect CEO compensation. Newman and Mozes (1999) document that although CEO compensation for firms with insiders on their compensation committee is not significantly different from their counterparts, CEO

[4] The author also finds the same association for board independence.

compensation is less sensitive to poor performance for firms with insiders on compensation committees. In other words, CEO for firms with insiders on compensation committees shielded them for poor performance, therefore suggesting that outside directors serve as active monitors on compensation committees. Similarly, Vefeas (2003) also find evidence that CEOs in firms with insiders in compensation committees get higher fixed pay and less contingent pay, and the contingent pay is significantly less sensitive to accounting performance.

Anderson and Bizjak (2003) document that CEO compensation is not associated with the independence of the compensation committee. Other than the fact that compensation committee with greater independence is marginally associated with more equity-based compensation, no other evidence suggest an association between compensation committee independence and CEO pay.

In sum, prior research suggests that independence of audit committee promotes better board monitoring. Meanwhile, the monitoring effect of independent compensation committee remains unclear.

2.5.2 Board Activities

Besides board structure, the issue of number of meetings conducted by the board also appealed to academics. Conger, Finegold and Lawler III (1998) argue that effectiveness of boardroom performance is, amongst other factors, a function of the frequency of board meetings. Thus, frequency of board meetings, the amount of time spent in preparing for the meetings and the amount of time in discussing the important decisions are keys to effectiveness of the board.

However, using a sample of firms spanning from 1990 – 1994, Vafeas (1999) document that although board meetings are positively associated with director reputation, board size and the number of board committees, they are negatively associated with ownership of officers and directors. Also, board meetings are associated with prior poor performance. Further, operating performance improves following periods of abnormally high board activity. Based on these findings, the author concludes that although the monitoring value of board meetings appears to be mixed, frequency of board meetings is an important aspect of board's operations.

Similarly, Uzun et al. (2004) do not find any association between board meetings, committee meetings, and the incidences of fraud in the sample firms. Overall, prior studies on the monitoring value of board meetings appear to be mixed.

2.5.3 Ownership Structure

Jensen (1993) argues that substantial management and board equity holdings are essential to boards' effectiveness as it promotes better interest alignment between the board and the shareholders. In addition, the presence of active investors (e.g. institutional investors) who hold large equity or debt positions is important to a well functioning governance system as their independence and financial interest will allow them to monitor management in an unbiased manner.

Empirical evidence from Core et al. (1999) lends support to Jensen's argument. The authors find a negative association between CEO compensation and equity ownership, proxy by the percentage of equity ownership by CEO, and the presence of blockholder who own 5% or more equity. The empirical findings support Jensen (1993) argument that CEO equity ownership and the presence of blockholder mitigates agency problems. Meanwhile, Hermalin and Weisbach (1991) indicate a non-monotonic relationship between management ownership

and firm value: firm value increases when ownership is less than one percent, but decreases when ownership is more than 20%.

Prior studies also examine the effect of board ownership, Morck et al. (1999) document a piecewise linear relationship between board ownership and market value of the firm (proxy by Tobin's Q). Specifically, the authors find a positive relationship when board ownership is between 0% - 5%, a negative and less pronounced relationship between 5% - 25%, and a positive relationship beyond 25%. The authors conclude that the one condition for managerial entrenchment is when board ownership falls between 5 to 25%. McConnell and Servaes (1990) document a curvilinear relationship between insider ownership and firm value (also proxy by Tobin's Q). In particular, the relationship increases first and then decreases. However, the authors cannot find significant relationship between firm value and the presence of blockholder, or the fraction of equity held by blockholders.

Besides board and management ownership, studies have also looked at the governance impact of institutional ownership. As mentioned previously, Hartzell and Starks (2003) indicate that institutional ownership concentration, proxy by the proportion of the top five institutional investors in the firm, and

Herfindahl index of institutional investor ownership, is negatively associated to the level of CEO compensation, and yet positively associated to CEO pay-performance sensitivity. Cornett et al. (2008) document that institutional ownership and having institutional investors on board reduces discretionary accruals, and improves firms' performance with and without adjusting for the effect of earnings management.

Gordon and Pound (1993) examine the relationship between voting outcome of shareholders proposals and firms' governance structure. The authors find that corporate governance proposals sponsored by large institutional investors receive significantly more votes than other sponsors (such as unions and religious groups). Also, shareholders' proposals receive more votes when the concentration of institutional ownership is high. Similarly, Gillian and Starks (2000) document a strong positive relationship between voting outcome of proxy proposals and the identity of sponsors, percentage of institutional ownership, issue address, and whether the proposal is submitted again. Percentage of institutional ownership is also positively associated to the stock market reaction on the proposal.

Yun (2009) empirically shows in the U.S. setting where there is change in state regulations to remove takeover threats, firms tend to increase their cash

holdings rather than increase their borrowing capacity (proxy by line of credit). Such tendency is stronger for firms without large shareholders or institutional investors. On this basis, the author argues that large shareholders and institutional investors' take up a monitoring role to limit managers' behave opportunistically in a setting of weakened takeover threat.

Overall, the above cited studies suggest board ownership, insider ownership and institutional ownership promotes more effective governance. However, the relationship may not be in a linear fashion.

CHAPTER 3 – INTEREST ALIGNMENT AND SPINOFF: EVIDENCE FROM PAY-PERFORMANCE SENSITIVITY

3.1 Hypothesis Development

As indicated in the previous chapter, literature has already established that spinoff reduces firms' agency costs and hence creates value. My study extends this argument by examining the impact of spinoff on CEO contracting efficiency. Spinoff effectively separates a multidivisional firm into two (or more) entities, making it easier and more effective for the market to monitor their performance. Also, CEO performance is less susceptible to uncontrollable factors found in previous multidivisional organization. Accordingly, firms will have more incentives to design CEO compensation contracts with a stronger performance-based component as writing and enforcing such contracts becoming less costly. As a consequence, the CEO-shareholder interest alignment for both parents and spun-off firms will improve after spinoff (the incentive alignment hypothesis). In fact, I further conjecture that such improvement should be more pronounced for the parent firms of focus-increasing spinoffs. It is because the division divested for focus-increasing spinoffs are operating in an unrelated industry as compared to the pre-spinoff firm, which further facilitates market monitoring and removes more uncontrollable factors hindering CEOs

performance. Consequently, writing stronger performance-based contracts for the parents firms of focus-increasing spinoffs are less costly than non focus-increasing spinoffs.

On the contrary, the separation of divisions in spinoffs also increases the CEOs exposure to more idiosyncratic risks in the firm. Thus, self-interested CEOs will have more incentive in negotiating compensation contracts that can hedged against their increased risk exposure, thereby impairing interest alignment after spinoff (the risk aversion hypothesis). Again, such impairment should be more prominent for the parents of focus-increasing spinoffs as divesting an unrelated business unit raises the CEOs exposure to idiosyncratic risks even further as compared to non focus-increasing spinoffs.

If spinoff creates value by mitigating agency costs, I will expect finding evidence supporting the incentive alignment hypothesis. I also expect the incentive alignment to be stronger for focus-increasing spinoffs as compared to non focus-increasing spinoffs. I test these conjecture by comparing the CEO pay-performance sensitivity for the parent before and after spinoff, and the pre-spinoff parent and the spun-off firms. The incentive alignment hypothesis predicts a positive change in pay-performance sensitivity for both the parent and

spun-off firms after spinoff whereas the risk aversion hypothesis predicts the opposite. Further, incentive alignment (risk aversion) hypothesis predicts a positive (negative) change in pay-performance sensitivity for focus-increasing spinoffs as compared to non focus-increasing spinoffs. Although similar arguments have been raised by Hite and Owers (1983), Schipper and Smith (1983), Aron (1991), Seward and Walsh (1996) and Daley et al (1997), this study contribute to the extant literature by offering direct empirical evidence to support the interest alignment explanation of spinoff value creation[5].

[5] Hite and Owers (1983) suggest improvement in contracting efficiency as a potential explanation to the positive abnormal returns associated with spinoff announcements. Schipper and Smith (1983) provide indirect evidence to support diminishing return to management (a consequence of diseconomies of decision management and diseconomies of decision control). Aron (1991) only provide a theoretical model without empirical evidence. Seward and Walsh (1996) empirical results mainly drawn from a correlation matrix on data related to the spun-off units. Finally, Daley et al. (1997) test the corporate performance (proxy by change in return on assets) for both the parent and the spun-off unit around spinoff. Since performance improvement can only be observed for the parent, the authors conclude that the evidence supported the corporate focus hypothesis.

3.2 Data and Methodology

3.2.1 Data

My spinoff sample is drawn primarily from the Securities Data Corporation (SDC) mergers and acquisitions database[6]. I first identify completed spinoff transactions from 1990 to 1997[7]. These spinoff transactions are subsequently confirmed by searching the *Lexis-Nexis* database using keywords spinoff, spin off and spin-off. Also, I only include spinoff transactions where the parent divests more than 80% ownership of the spun-off unit. This yields 160 transactions for the initial sample. Following prior literature, I eliminate 72 spinoff sample by applying the following criteria: (1) the spinoff business is involved in the financial services, banking sectors or regulated industries; (2) the spinoff firm is an ADR; (3) the spinoff firm is a tracking stock or a closed-end fund; (4) the spinoff is motivated by takeover defenses, mergers, bankruptcies and regulatory issues; (5)

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[6] I would like to express my sincere gratitude to Seoungpil Ahn, Timothy R. Bruch, Vikram Nanda and Mark D. Walker, and for their generous contribution of their initial spinoff sample for this project before I gain access to the SDC database.

[7] The sample commences from 1990 as CEO compensation data prior to 1990 are unavailable from Execucomp or *Lexis Nexis*. The sample ends in 1997 as the reporting requirement for business segments is significantly changed starting from 1998. Essentially, segments reported before 1998 are considered industry segments whereas segments reported from 1998 and onwards are considered operating segments. In order to maintain consistency within the sample, I end my sample period in 1997.

the parent firm is merged with another firm within one year after spinoff; (6) the spin-off firm that was a prior equity carve-out within one year before spinoff.

Both the annual stock return and return on equity (ROE) will be used to proxy for shareholders' wealth in estimating pay-performance elasticity. These two proxies represent a market-based and an accounting-based measure of shareholders' wealth. For stock return, I use the fiscal year stock return in order to match with the compensation data. This is computed by compounding the monthly stock returns obtained from *CRSP* database. ROE is computed by dividing the income before extraordinary items available for common shareholders by total common shareholders' equity. Both items are obtained from the *Compustat* database. To mitigate the potential impact from outliers, firms with common shareholders' equity below $1 million (which will lead to a very large ROE) and annual returns above 3.5 are excluded from further analysis[8].

The primary source of CEO compensation data is Standard and Poor's *ExecuComp* database. The four components of CEO compensation as indicated

[8] I have repeated all the tests with the inclusion of these extreme samples and the results are consistent to the ones reported here. To further ensure robustness of results, I have repeated the analysis excluding firms with annual returns higher than 3.0 or ROE lower than -2.0. Again, no significant deviation of results is observed.

previously are all available from *ExecuComp*. However, compensation data for spinoff firms before 1992 and firms outside S&P 1500 are not available on *ExecuComp*. Given this, I manually collect compensation data from the firms' proxy statements from *Direct Edger* database if they are not available on *ExecComp*. Of the four components of CEO compensation, only stock option grants are not reported in monetary amount in the proxy statement. To ensure consistency, I follow the *ExecuComp's* modified Black-Scholes option valuation methodology to compute the value of option grant for hand collected compensation data. 17 firms are eliminated due to the absence of CEO compensation data. As a result, the final sample consists of 71 firms. Details on the sample selection criteria are presented in Panel A of Table 1.

[Insert Table 1 About Here]

Panel B of Table 1 reports distribution of the full sample and the focus-increasing subsample by year. About 59% of the full sample is clustered around the last 3 years of the 8-year sample period (i.e. 1995-1997). Such sample pattern is similar to Ahn and Denis (2004). I will address this issue by including year dummies in my subsequent analysis to avoid having the results driven by specific year effects. Also, over half of the full spinoff sample are

focus-increasing spinoffs. However, the focus-increasing spinoff sample does not exhibit a clustering effect as the full sample.

[Insert Table 2 About Here]

The summary statistics on the compensation and performance variables for the spinoff parents and spun-off firms are presented in Panel A and B of Table 2 respectively. Year 0 in the table denotes the year of the spinoff event. The period reported for the parent companies spans from two years before (i.e Year -2 and -1) to three years (i.e Year 1, 2 and 3) after the spinoff event. For spun-off units, the period reported spans from the first year to the third year after the spinoff event (i.e. Year 1, 2, and 3). The first four items shows the four components of CEO compensation in the sample. Throughout the sample period, the median of every CEO compensation component is smaller than the mean for both parents and spun-off units, indicating that the distribution of CEO compensation for both groups of firms are skewed towards the right. By taking the log difference for the CEO compensation, the models in my analysis dampen the impact of skewness. The trend from the four components of CEO compensation indicates that CEOs of the parent companies, on average, receives a higher compensation after spinoff. Meanwhile, CEOs of the spun-off units

receives, on average, a lower compensation as compared to their pre-spinoff parents. The CEO pay difference for these two groups is related to the size difference of the parent and spun-off firms as indicated from their average assets. This observation is consistent with extent literature on executive compensation that CEO compensation is related to the size of the firm (e.g. Core et. al. (1999)). In addition, comparing the structure of CEO compensation from the pre-spinoff (i.e. Years -2 and -1) vs. the post spinoff periods (i.e. Years +1 to +3), CEOs of both the parent and spun-off firms' receive more equity based compensation (stock options and restricted stocks) as their total compensation after spinoffs. This is consistent with findings from Seward and Walsh (1996). Besides, both mean and median stock options for Year -1 are drastically higher than Year -2[9]. One explanation is that the sample for Year -2 ended in 1995 whereas the sample for Year -1 ended in 1996. In fact, half of the sample in Year -2 is concentrated in years 1994 and 1995 whereas half of the sample in Year -1 is concentrated in years 1995 and 1996. Given that the median value of stock options for Year 1994 to Year 1996 are $252,000, $188,000 and $620,000 respectively, the median stock options in Year -1 will likely be significantly higher as compared to Year -2. Another possible explanation is that CEOs of spinoff firms game their future

[9] The increase is not driven by the presence of outliers.

compensation using stock options. Given that the market typically views spinoff in a positive manner and that the CEOs anticipates the spinoff will be complete in the following year, they will have an incentive to negotiate more stock options grants in Year -1 in order capture the potential stock price increase from the positive market sentiment after spinoff.

CEOs anticipated that their firm will complete the spinoff transaction in the following year, and that the market typically views spinoff in a positive manner,.

The evidence that spinoffs create shareholder value can be observed from the stock return and ROE of the parent firms in Panel A of Table 2. On average, the mean stock return increased from 20.8% in Year -1 to 26.1% in Year 0, whereas the mean ROE increased from 2.8% in Year -1 to 13.3% in Year 0[10]. Finally, the size of the spinoff, defined as the market value of the spun-off unit divided by the combined market value of the post-spinoff parent and spun-off unit[11], indicated that spinoffs result a mean (median) divestiture of about 30.9% (24.6%) of the combined firm after spinoff. Although the spinoff size reported is slightly higher

[10] Similar increase is also observed for median ROE, which goes from 8% in Year -1 to 12% in Year 0.

[11] This definition is consistent with Burch and Narda (2003) and Ahn and Denis (2004).

than Burch and Narda (2003) and Ahn and Denis (2004), it is likely due to the difference in sample period.

3.2.1 Methodology

The purpose of this study is to examine whether spinoff improves CEO-shareholder interest alignment. As a preliminary test, I first examine the trend of pay-performance elasticity for the parent and spun-off firms by estimating the following model for every event year from Year -1 to Year +3:

$$ln(CEO\ pay_t/CEO\ pay_{t-1}) = \alpha + \beta_1\Delta(shareholder\ wealth_t) + \beta_2\Delta(shareholder\ wealth_{t-1}) \quad (1)$$

Equation (1) is based on the pay-performance elasticity model by Hall and Liebman (1998) and Murphy (1999), which tests the association between the change in both contemporaneous and lagged shareholder wealth on change in CEO compensation[12]. The dependent variable is the first difference of log (CEO

[12] The difference between pay-performance elasticity and pay-performance sensitivity lies solely in the measurement of the dependent and independent variable. The model to estimate pay-performance sensitivity expresses both pay and performance in dollars whereas for pay-performance elasticity, pay is expressed and logarithms and change in shareholder wealth is expressed in returns. As compared to pay-performance sensitivity, pay-performance elasticity is relatively robust to firm size (Gibbons and Murphy, 1992). The use of pay-performance elasticity in this study appropriately addresses the issue of firm size variation in the sample, along with the firm size variation before and after the spinoff event.

wealth). CEO compensation typically includes 4 components: (1) salary and bonus, (2) stock options, (3) restricted stock and (4) other compensation[13]. Components (1) and (4) represent cash compensation whereas (2) and (3) represent equity compensation. Consistent with prior compensation literature, CEO wealth are measured by total compensation received by the CEO. Since the equity compensation comprise as a major portion of total CEO compensation, I have also employ equity compensation as proxy for CEOs' wealth. The first difference equity compensation in year t equals to the sum of stock option and restricted stocks granted in year t[14]. Meanwhile, the first difference for total CEO compensation in year t is obtained by simply adding the first difference in cash compensation and the equity compensation granted in year t.

The independent variables are change in contemporaneous and lagged shareholders' wealth. In order to estimate pay-performance elasticity, shareholders' wealth is measured based on rates of return, proxy by annual fiscal

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[13] Other compensation represents compensation which cannot be classified in other categories. Such as life insurance premiums, retirement payments, tax reimbursements, retirement plan contributions etc.

[14] The equity compensation is reported based on the amount granted during the year. Given that firms do not necessary grant equity compensation annually, I consider the equity compensation granted in year t as the change in equity compensation in year t. Such treatment implicitly assumes that the stock option and restricted stock granted in previous year is 1 in estimating the pay-performance elasticity.

year stock returns and return on equity (ROE). The choice of these two proxies represents a market and accounting-based measure of shareholders' wealth.

By comparing pay performance elasticity (i.e. coefficients β_1, β_2 or both) of the pre-spinoff firm in Year -1 and its subsequent event years for post spinoff parents and spun-off firms, an improved trend would suggest interest alignment whereas a deteriorated trend would suggest risk aversion. However, such trend cannot establish that spinoff significantly promotes interest alignment or risk aversion for both parent and spun-off firms. In order to formally test my interest alignment and risk aversion hypotheses, I estimate the following model:

$$\begin{aligned} ln(CEO\ pay_t/CEO\ pay_{t-1}) = {} & \alpha + \beta_1 \Delta(shareholder\ wealth_t) + \\ & \beta_2 \Delta(shareholder\ wealth_{t-1}) + \beta_3 SpD + \\ & \beta_4 * SpD * \Delta(shareholder\ wealth_t) + \\ & \beta_5 * SpD * \Delta(shareholder\ wealth_{t-1}) + \beta_6 Spinsize \end{aligned} \quad (2)$$

Equation (2) is a panel regression model based on pay-performance elasticity model from equation (1). It is estimated in an event window which combines a pre-spinoff and a post-spinoff event year. I choose Year -1 and Year +1 as the event window as it represents a period which is closest to the spinoff event.

Given the spinoff event may not be conducted at the fiscal year-end date of the spun-off firms, the compensation and the full 12-month stock return data for Year 0 are not available for those spun-off firms concerned. For those spun-off firms, I annualized the compensation[15] and stock return based on the available data in Year 0. To ensure robustness and persistency of results, I combine the Year -1 and all the post spinoff event years sample (i.e. Year +1 to Year +3) to estimate equation (2) for both parent and spun-off firms.

Two additional independent variables are introduced in Equation (2), *SpD* is a dummy variable which takes a value of 0 to indicate pre-spinoff and a value of 1 to indicate post-spinoff. *Spinsize* is a variable to control for spinoff size. The inclusion of this control variable is necessary because a larger scale spinoff can potentially allow better market monitoring and eliminate more uncontrollable factors that hamper CEOs performance, thereby resulting better interest alignment. Given that my model analyze the change in CEO pay before and after the spinoff event, the usual control variables included for regressions on CEO pay levels are therefore not necessary. In spite of this, I have also included other control variables for additional tests.

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[15] Specifically, the annualized compensation only includes salary and bonus and other compensation. The amount of options and restricted stocks are taken as reported.

My key variables of interests are the interactions terms: $SpD*\Delta(shareholder\ wealth_t)$ and $SpD*\Delta(shareholder\ wealth_{t-1})$. Both variables capture the change of pay-performance elasticity from the spinoff event. If spinoffs improve CEO contracting efficiency according to the interest alignment hypothesis, I expect β_4, β_5 or both to be positive and significant. Alternatively, the risk aversion hypothesis will predict the opposite.

To further test the interest alignment and risk aversion hypotheses on focus-increasing spinoffs, I estimate the following model for the pre and post spinoff parent firms:

$$\begin{aligned} ln(CEO\ pay_t/CEO\ pay_{t-1}) = \quad & \alpha + \beta_1\Delta(shareholder\ wealth_t) + \\ & \beta_2\Delta(shareholder\ wealth_{t-1}) + \beta_3 SpD + \\ & \beta_4 * SpD*\Delta(shareholder\ wealth_t) + \\ & \beta_5 * SpD*\Delta(shareholder\ wealth_{t-1}) + \beta_6 Focus + \\ & \beta_7 * SpD*Focus*\Delta(shareholder\ wealth_t) + \beta_8 * \\ & SpD*\ Focus\ *\Delta(shareholder\ wealth_{t-1}) + \\ & \beta_9 Spinsize \qquad (3) \end{aligned}$$

Equation (3) is similar to (2) but with the inclusion of a focus dummy variable, which takes up a value of 1 for focus-increasing spinoffs and 0 for non

focus-increasing spinoffs. Consistent with prior studies from Desai and Jain (1999) and Daley et al. (1996), a spinoff is considered as focus-increasing if the SIC code of the spun-off unit is different from its predecessor at a two-digit level. To ensure consistency, I estimate equation (3) by using the same event window as equation (2).

The key variables to support my hypothesis that interest alignment is stronger for focus-increasing spinoffs are the three-way interaction terms: *SpD*Focus*Δ(shareholder wealth$_t$)* and *SpD*Focus*Δ(shareholder wealth$_{t-1}$)*. This proposition is supported if the coefficient β_7, β_8 or both to be positive and significant. On the contrary, the risk aversion hypothesis will predict the same coefficient(s) being significant with opposite signs.

3.3 RESULTS

3.3.1 – Yearly Pay-Performance Elasticity Regressions

I begin the analysis by examining the trend of yearly pay-performance elasticity before and after spinoff spanning from Year -1 to Year +3 with Year 0 being the spinoff event year. The pay-performance elasticity is obtained by estimating equation (1) with CEOs' wealth proxy by the equity compensation (i.e. stock options and restricted stocks) and total compensation received by CEO, and shareholders' wealth proxy by fiscal year stock return and ROE.

[Insert Table 3 About Here]

Results of yearly pay-performance elasticity regression using stock returns as a proxy for shareholders' wealth are reported in Table 3. Panels A and B provide regression results using equity compensation and total compensation as measures of CEOs' wealth correspondingly. The R-square for all pay-performance elasticity regressions tends to be low. This finding is consistent with the extant pay-performance sensitivity literature (Hall and Liebman (1998), Murphy (1999), Conyon and Murphy (2000)). Both contemporaneous and lagged pay-performance elasticity coefficients (i.e. b2 and b3) are negative before spinoff

as indicated in Year -1. This observation is consistent for both CEOs' wealth measures as indicated in Panels A and B. In fact, the lagged pay-performance elasticity is negative and significant at 5% level and 10% level using the two measures of shareholders' wealth. The negative significant pre-spinoff pay-performance sensitivity is likely driven by the large increase in stock options grants in Year -1 as compared to Year -2 as a result of the reasons explained previously. In essence, the results suggest that pre-spinoff CEO compensation contracts do not promote interest alignment with the shareholders.

Turning to post-spinoff parent firms, both contemporaneous and lagged pay-performance elasticity coefficients turn positive commencing from the event year (Year 0). Moreover, the lagged elasticity is significant at 10% level in Year +2. The results are consistent under the two different measures of shareholders' wealth in Panels A and B. The change in sign of the elasticity coefficients suggests an interest alignment improvement for the parent firms after spinoff. For the spun-off firms, although the signs of contemporaneous and lagged pay-performance elasticity coefficients are exhibited with mixed signs throughout the three years after spinoff, none of the coefficients are negative and significant as compared to the pre-spinoff year. Moreover, the R-square of the spun-off firms' pay-performance elasticity regressions in Years +2 and +3 are higher than

the pre-spinoff counterpart in Year -1. Again, both findings are consistent using two proxies of CEOs' wealth as indicated in Panels A and B. The change in sign and significance of the elasticity coefficients, along with the improvement in R-square also suggest interest alignment is improvement for the spun-off firms. Despite the improvement for spun-off firms are not as evident as the post-spinoff parent, this is possibly driven by the small sample size of the spun-off firms.

[Insert Table 4 About Here]

Table 4 repeats the same analysis in Table 3 using ROE as an accounting-based measure of shareholders' wealth. The coefficient for the pre-spinoff pay-performance elasticities display mixed signs and not significant in Panel A but significant in Panel B. However, the post-spinoff contemporaneous pay-performance elasticity coefficients for the parent firms are positive throughout three year period after spinoff. Moreover, the coefficient in Year +1 is significant at 10% level in Panel B while significant at 5% level in Year +2 is under both Panels. In addition, the sign of the lagged coefficient for post-spinoff parent firms are also positive in Years +3 under both panels. With respect to the R-square, the post-spinoff parent regressions in Years +2 and +3 are higher than the pre-spinoff firm. This observation is consistent on both proxies of CEO

compensation as displayed in Panels A and B. The change in signs and significance of the contemporaneous pay-performance elasticity coefficients, along with the improvement in R-square implies that spinoff improves interest alignment for the parent firms. For the spun-off firms, the contemporaneous pay-performance elasticity coefficients are positive in both Year +2 and +3 using both measures of CEO's wealth. In addition, none of the post spinoff pay-performance elasticity coefficients in Panel B are negative and significant as compared to the pre-spinoff firm. Furthermore, comparing to the R-square of the pre-spinoff regression, improvement in R-square for the spun-off firms' regressions is noted under both measures of CEOs' wealth starting from Year +2. Despite the improvement of spun-off firms is less evident as compared to parent counterparts, it is possibly due to its relatively smaller sample size. Nevertheless, the improvement in signs and R-square again suggest that spinoff improves the interest alignment of the spun-off firms.

Taken together, the results in Tables 3 and 4 provide preliminary evidence to support my interest alignment hypothesis for both parent and spun-off firms. The evidence is also consistent to the contracting efficiency argument as proposed by prior studies from Schipper and Smith (1983), Hite and Owers (1983) and Aron (1991).

3.3.2 – Panel Pay-Performance Elasticity Regressions – Parent Firms

The improvement in the sign and significance of the pay-performance elasticity coefficients, along with the regression R-square for both post spinoff parent and spun-off firms in the previous yearly pay-performance elasticity analysis merely provides preliminary support towards the interest alignment hypothesis. This section presents the results of the formal test for the interest alignment and risk aversion hypothesis for the parent firms by estimating equation (2). Following the previous analysis, same measures of CEO and shareholders' wealth are employed in this analysis. The pre-spinoff sample is Year -1 whereas the post-spinoff sample is Year +1. The choice of this window period is to ensure the results is primarily driven by the spinoff event rather than other unrelated factors.

[Insert Table 5 About Here]

Table 5 displays the results for the panel pay-performance elasticity regressions of the parent firms before and after spinoff. Panel A reports the panel regressions using Year -1 as the pre-spinoff year sample and Year +1 as the

post spinoff year sample. To ensure long run persistency of results, I repeat the analysis but replacing the post-spinoff sample by combining Year +1 to Year +3 and report it under Panel B. For both panels, fiscal year stock return, ROE, and a combination of the both measures are employed to proxy for shareholders' wealth. Within each of these specifications, two other regression specifications related to measures of CEOs' wealth are developed. The first regression employs equity compensation to proxy for CEOs' wealth whereas the second regression uses total compensation. Such arrangement yields a total of six regression specifications reported in each panel. Among these six regression specifications, the R-square for all regressions specifications are relatively low, similar to the results from the yearly regressions. This finding is also consistent with the extant pay-performance sensitivity literature (Hall and Liebman (1998), Murphy (1999), Conyon and Murphy (2000)).

The pre spinoff pay-performance elasticity is indicated by four coefficients estimates *conRtn*, *lagRtn* *conROE* and *lagROE*. The contemporaneous pre-spinoff pay-performance elasticity coefficients are negative for the first two specifications using stock returns as measures of shareholders' wealth. In fact,

the coefficients of *lagRtn* are negative and significant at 5% or 10% levels[16]. Meanwhile, the pre-spinoff pay-performance elasticity using ROE as performance measures is mixed as the coefficient for *conROE* is negative and significant ($p<0.05$) whereas the coefficient for *lagROE* is positive and significant ($p<0.05$). Similar pattern of pre-spinoff pay-performance elasticity is also noted in the last two specifications when combining both stock returns and ROE as measures of shareholders' wealth. Collectively, this suggests that both equity-based compensation and total CEO compensation does not promote interest alignment before spinoffs. Such findings are also consistent with the results from the yearly regressions in Tables 3 and 4.

My key variables of interest in the model are the interaction terms: *SpDxconRtn, SpDxconROE, SpDxlagRtn* and *SpDxlagROE*. These four variables indicate the change in pay-performance sensitivity from spinoffs under two different proxies of shareholders' wealth. The interest alignment hypothesis would predict either one or both coefficients to be positive and vice versa for the risk aversion hypothesis. One can readily observe that the sign, magnitude and

[16] For all panel regressions, the t-statistics are computed based on White (1984) standard errors or White (1984) standard errors robust to within firms' cluster correlation (i.e. Rogers (1993) standard errors) where appropriate.

significance for the two coefficients are very similar when comparing the regression results using equity compensation versus total CEO compensation as a measure of shareholders' wealth. This is consistent with prior literature on pay-performance sensitivity that equity compensation is a key component in driving the total pay-performance elasticity. This is also consistent with the notion that the use of equity based compensation promotes a closer interest alignment between CEO and shareholders (Jensen and Murphy (1990), Hall and Liebman (1998), Murphy (1999), Conyon and Murphy (2000)).

The results of the first two specifications indicate that both coefficients of the interaction terms are positive while the *SpDxlagRtn* is also significant at 5% level when shareholders' wealth is measured by stock returns. Meanwhile, despite the coefficients for *SpDxlagROE* are negative and significant ($p<0.05$) using ROE as a proxy for shareholders' wealth, the coefficients for *SpDxconROE* are positive and significant at 1% level. The results from the prior four specifications are consistent to the last two specifications using both stock returns and ROE together as measures of shareholders' wealth. Specifically, the coefficient for *SpDxconRtn* is positive although not significant at conventional levels. Also, the coefficient for *SpDxlagROE* is negative and yet not significant at conventional levels. Meanwhile, the remaining interaction terms *SpDxlagRtn* and

SpDxconROE are positive and significant at 10% and 1% level respectively. Together, the evidence from the Panel A suggests that spinoff improves the pay-performance sensitivity of the parent firms, which support my interest alignment hypothesis.

In unreported tests, I have repeat this analysis replacing the post spinoff sample to Year +2 and Year +3 to ensure robustness and persistency. The results of those tests are similar to the ones reported in Table 5[17]. Such evidence suggests that spinoff improves the association between the change in CEO pay and both market-based and accounting-based shareholders wealth for the parent firm. Alternatively stated, this result supports my interest alignment hypothesis that spinoff improve interest alignment of the parent firms after spinoff and thereby creates value. Also, this result complements with spinoff value gain explanation from Hite and Owers (1983) and Schipper and Smith (1983), both suggest that spinoff creates value by improving in contracting efficiency. In addition, my results also support the analytical model from Aron (1991) that

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[17] Using total compensation as a measure of CEOs' wealth, the coefficients for *SpDxlagRtn* are positive significant at 5% level for both Year +2 and Year +3 when shareholders' wealth is proxy by stock return. Also, the coefficient for *SpDxconROE* is positive and significant at 1% level for both Year +2 and Year +3 when shareholders' wealth is measured by ROE. In addition, the coefficient for *SpDxlagRtn* is positive and significant at 10% level in Year +2 and +3 while the coefficient for *SpDxconROE* is positive and significant at 10% level in Year +2 for specification using combined performance measures.

spinoff facilitates firms to write and enforce performance based incentive contracts.

To demonstrate long run persistency of results, I combine the pre spinoff year sample, together with and all three post spinoff years sample of the parent firms to estimate model (2). The results based on this approach are reported in Panel B of Table 5.

Focusing on the key explanatory variables in equation (2), the coefficients for *SpDxlagRtn* are positive and significant for the first two specifications ($p<0.01$ and $p<0.05$ respectively) with stock return being a proxy for shareholders' wealth. Meanwhile, the coefficients for *SpDxconROE* are positive and significant at 1% level for the next two specifications when shareholders' wealth is measured by ROE[18]. In addition, the coefficients for *SpDxlagRtn* and *SpDxconROE* are positive and significant at 5% level in the last two specifications when shareholders' wealth is measured by both stock returns and ROE. Collectively, the results are consistent with the ones presented in Panel A and they again

[18] Although the coefficient for *SpDxlagROE* is negative and significant at 5% and 10% levels, both their magnitude and significance is lower than the contemporaneous interaction term.

support my interest alignment hypothesis that spinoff brings a stronger bonding between CEOs pay with shareholders' return.

To summarize, the findings from the panel pay-performance sensitivity regressions suggest that spinoffs facilitate a closer association between change in CEO pay and change in lagged market-based shareholders' wealth and contemporaneous accounting-based shareholders' wealth for parent firms. In other words, the evidence supports my interest alignment hypothesis whereby spinoffs improve interest alignment and contracting efficiency of the parent firm, consistent with the agency cost reduction explanation of spinoff value creation. My results also complement with Hite and Owens (1983) and Schipper and Smith (1983), both suggest that spinoff creates value as it improves the firms' contracting efficiency. In addition, my empirical evidence supports the theoretical model from Aron (1991), suggesting that spinoff allows the firm to write and enforce performance based incentive contract in a less costly manner. From a broader perspective, my results are consistent with the view from a strand of spinoff studies (Seward and Walsh, 1996; Bruch and Nanda, 2003; Ahn and Walker, 2007 etc.) which suggest that spinoff creates value by mitigating agency costs present in multi-divisional organizations.

Given that spinoff improves the interest alignment of the parent firm, the natural question that arises is whether the interest alignment improvement is associated with the spinoff value creation. To examine this question, I test the correlation between the improvement on pay-performance sensitivity and performance improvement after spinoff for parent firms. Specifically, based on the estimated coefficients as reported under specification (6) of Panel A in Table 5 (i.e. Panel pay-performance elasticity regression with performance using both stock return and ROE), I compute the estimated sum of the two-way interaction terms for each firm using stock returns and ROE respectively (i.e. β_4SpDxconRtn + β_5SpDxlagRtn; β_8SpDxconROE + β_9SpDxlagROE). This yield two estimated values which represents the magnitude of interest alignment improvement from spinoff.

Next, I test the correlation between these two estimates with the performance improvement of the post-spinoff parent using (1) stock return in Year +1, and (2) the difference in ROE between Year 0 (i.e. the event year) and Year +1. If performance improvement is partially driven by improvement in interest alignment, I expect the correlation to be positive and significant.

The result (un-tabulated) indicates that the estimated interest alignment improvement using ROE is positive and significantly ($p<0.01$) correlated with both performance improvement measures. Similarly, the estimated interest alignment improvement using stock returns is also positively correlated with both performance improvement proxies but the correlation is only significant with stock return improvement ($p<0.05$). Taken together, the results provide some evidence that spinoff value creation is partly driven by the improvement of interest alignment between CEO and the shareholders.

3.3.2 – Panel Pay-Performance Elasticity Regressions – Spun-off Firms

Although evidence supports the interest alignment hypothesis for the parent before and after spinoff, such analysis should be extended to the spun-off firms in order to obtain full support to my hypothesis. In light of this, I repeat the same panel regressions as the parents by re-estimating model (2) with a combined sample of pre-spun-off parent firms in Year -1 and spun-off firms in Year +1. The results are reported in Table 6, with Panel A showing the estimated coefficients using different proxies for CEOs and shareholders' wealth. Consistent with the parents' regressions, regressions using different proxies of

performance measures are reported in groups of two. The first being stock return, next is ROE and the last one is stock return and ROE combined. Of each of these two specification sets, the first regression proxy CEOs' wealth using equity compensation while the second regression uses total compensation.

[Insert Table 6 About Here]

Consistent with the results of the parent firm in Table 5, the R-square are relatively low for all specifications. As noted previously, it is also consistent with the low R-square reported in prior pay-performance sensitivity literature (e.g. Hall and Liebman (1998), Murphy (1999), Conyon and Murphy (2000) etc.). The pre-spinoff pay-performance elasticities also display a similar pattern as the parent firms: the coefficients for both *conRtn* and *lagRtn* are negative with the lagged elasticity being significant at conventional levels using stock return to proxy for shareholders' wealth ($p<0.05$ and $p<0.1$). Meanwhile, the pre-spinoff pay-performance elasticities display mixed results using ROE as performance measure. Specifically, the coefficient for *conROE* is positive and significant at 1% and 5% levels for the two specifications whereas the *lagROE* is negative and significant at 5% levels. Again, similar pattern of signs for the pre-spinoff pay-performance elasticities are observed for the last two specifications

combining stock returns and ROE as measures of shareholders' wealth. The evidence again indicates that CEO compensation for pre-spinoff parent firms does not promote interest alignment with shareholders.

The fact that spinoff improves the interest alignment of spun-off firms is evidenced by the interaction terms (i.e. *SpDxconRtn*, *SpDxlagRtn, SpDxconROE* and *SpDxlagROE*). Referring to the first two specifications using stock returns as shareholders' wealth measure, both contemporaneous and lagged interaction terms are positive despite none of which are significant at conventional levels. For the next two specifications using ROE as performance measure, the signs of the interaction terms are mixed despite all the coefficients are significant at conventional levels. However, for the last two specifications using combined measures of shareholders' wealth, the coefficients for *SpDxconRtn* and *SpDxlagRtn* are positive and significant at 5% or 1% levels although the remaining interaction terms displays similar signs as previous specifications, none of them are significant at conventional levels. Despite weaker results as compared to the parents' counterparts, evidence from Panel A suggests that spinoff improves the association between change in CEO pay and contemporaneous market-based shareholders' wealth for spun-off firms.

To ensure robustness of results, I have repeated this analysis replacing the post spinoff sample to Year +2 and Year +3 (results un-tabulated) with improved results[19]. In essence, although the results with spun-off firms are weaker as compared to the parent counterparts, it is still consistent with the findings from the parent firms as displayed in Table 5. More fundamentally, this result support my conjecture that spinoff improves the interest alignment for the spun-off firms. It again supplements with the contracting efficiency explanations put forth by Hite and Owers (1983) and Schipper and Smith (1983).

Following the methodology employed in the parent firms, I also combine the pre spinoff year sample, together with all three post spinoff years sample of the spun-off firms to re-estimate model (2). The combined sample panel regression results using market and accounting based measures of shareholders' wealth is reported in Panel B of Table 6.

Consistent with the results from the Panel A, the CEOs' pay of the pre-spinoff firms does not promote interest alignment. It is evidenced by the

[19] Specifically, using total compensation as a measure of CEOs' wealth, the interaction terms, *SpDxconRtn* and *SpDxlagRtn*, are positive and significant ($p<0.05$) in Year +2 and Year +3 respectively. For the ROE regressions, the coefficient *SpDxconROE* is positive and significant ($p<0.01$) in Year +3.

estimated coefficients of *conRtn*, *lagRtn* and *conROE*[20]. Specifically, all these coefficients are negative with some being significant at 10% level. In fact, the signs and significance of these coefficients mirrors with the results reported in Panel A. Examining the interaction terms in the same table reveals that their coefficients are positive for the first two specifications using stock returns as shareholders' wealth measure. In fact, the coefficient of *SpDxlagRtn* is significant at 10% level when CEO compensation is measured by the equity-based compensation received. Also, the coefficients of *SpDxconROE* for the two specifications are positive and significant at 1% level. In addition, the coefficient *SpDxconRtn* is positive and significant at 5% level for the last two regression specifications with two performance measures combined. The long run panel results shown in this panel is consistent with the ones presented in Penal A. Altogether, findings from the combined sample panel regressions support my interest alignment hypothesis that spinoff improves the association between CEO compensation and shareholders' wealth for spun-off firms. This is also consistent with the results from the parents' counterparts in Panel B of Table 5.

[20] Although the coefficients for *lagROE* are positive, their significance is lower as compared to the *conROE*.

In sum, the pay-performance sensitivity regressions for spun-off firms indicate that spinoff promotes a closer association between the change in CEO compensation and the change in lagged market-based shareholders' wealth, and change in contemporaneous accounting-based shareholders' wealth. The findings from spun-off firms complements with those from the parents' regression in supporting my interest alignment hypothesis that spinoff creates value by improving the contracting efficiency for both the parent firms and the spun-off firms after spinoff. This contention is consistent to extant literature which considered spinoff facilitates writing more efficient management contracts and creates value (Hite and Owens (1983), Schipper and Smith (1983) and Aron (1991)). Furthermore, it complement with the strand of spinoff literature which argues spinoff creates value by removing agency costs presence in multi-divisional organizations (Seward and Walsh, 1996; Bruch and Nanda, 2003; Ahn and Walker, 2007 etc.).

One may argue that there is potential reverse casualty issue as a manager of the potential spinoff segment can initiate the spinoff transaction. Specifically, if a segment of a multi-divisional firm is performing more superior as compared to the parent company, the segment manager have an incentive to spinoff as this allows the manager to write a stronger performance-sensitive contract.

Consequently, the segment manager will get a higher pay. Although I acknowledge such potential, it is unlikely due to two reasons. First, spinoff is usually initiated by the CEO and approved by the board of directors and shareholders. Even a segment manager may want to get his/her segment spinoff from the parent firm, the approval still rest on the CEO, board and shareholders. If the segment has been doing very well, the CEO will likely keep rather than spinoff such well-performing segment.

Secondly, referring to the descriptive statistics in Table 2 on the performance of the parent and spun-off firms, the post spinoff parent outperforms the spun-off firm for two consecutive years after spinoff with respect to the average stock returns and ROE. In addition, a number of spun-off firms are acquired by another company within a few years after spinoff. This partly explains why the spun-off firm sample is smaller than the parent counterparts. In addition, Daley et al. (1997) find that only post-spinoff parent firms experienced operating performance improvement rather than the spun-off entities. Taken together, evidence suggests that spun-off firms are, on average, performing worse than the parent companies.

3.3.3 – Pay-Performances Elasticity for Focus-Increasing Spinoffs

In this section, I analyze the impact of interest alignment on the parent firm for focus-increasing spinoffs as compared to non focus-increasing spinoffs. Following prior studies, I define focus-increasing spinoff if the SIC code of the spun-off unit is different from the pre-spinoff parent at a two-digit level. The analysis involves estimating the pay-performance elasticity regressions using model (3). Using the same approach as estimating the panel pay-performance elasticity regressions, the regression estimates in this analysis are based on one year of pre spinoff and one year of post spinoff sample, with pre spinoff year being Year -1 (i.e. the fiscal year prior to spinoff) and the post spinoff year being Year +1 after spinoff.

[Insert Table 7 About Here]

Panel A of Table 7 shows the panel regression results for the focus-increasing spinoffs using both stock returns and ROE as proxies for shareholders' wealth. The key variables to test my conjecture that focus-increasing spinoff promotes a stronger interest alignment are the three-way interaction terms: *FxSpDxconRtn*,

FxSpDxlagRtn, FxSpDxconROE and FxSpDxlagROE. This hypothesis is supported if either one or both variables are positive and significant. From the table, only the lagged three-way interaction term in the first specification is significant at 10% level. Nevertheless, the three-way interaction terms in the remaining specifications are not significant with mixed signs. In essence, the results do not lend support to my interest alignment hypothesis for focus-increasing spinoffs. This result also does not support the implication from Schipper and Smith (1983)'s study as focus-increasing spinoffs should eliminate more transaction diversity and thereby allow the firm to write incentive contracts in a less costly manner as compared to the non focus-increasing spinoffs[21].

Following the panel regression approach I use previously, I estimate model (3) by combining the pre spinoff year sample (i.e. Year -1) and all three post spinoff years (i.e. Year +1 to Year +3) sample together. The combined sample panel focus-increasing panel regression results using two different measures of shareholders' wealth, along with the combined performance measures, are reported in Panel B of Table 7. None of the three-way interaction terms is significant at conventional levels for the first two specifications using stock return

[21] In unreported tests, I have replaced the post spinoff sample from Year +2 to Year +1 and Year +3. The results are similar to the ones reported in Panel A.

as performance measure, despite all of which display positive signs. For the next two specifications, the coefficients for *FxSpDxconROE* are positive and significant at 5% level. In essence, the results indicate that focus-increasing spinoff promotes a stronger association between change in CEO's wealth and the change in contemporaneous accounting-based shareholders' wealth. In fact, the same coefficient is also significant ($p>0.05$ and $p<0.1$) in the last two specifications using combined performance measures. As a whole, the evidence partially supports my interest alignment hypothesis for focus-increasing spinoffs. This result is also consistent with the findings from Daley et. al. (1997) and Desai and Jain (1999), both documented that focus-increasing spinoff creates more value than non focus-increasing spinoffs.

In sum, my analysis on focus-increasing regressions does not yield robust results to fully support of my interest alignment hypothesis. However, this conclusion is still consistent with the findings from Daley et al. (1997). In that study, the authors find that focus-increasing spinoff results higher positive excess returns and long term performance improvement, evidence further suggests that the improvement is not due to stronger incentive alignment, but rather allowing managers to focus their expertise to manage the core business.

3.3.4 – Test on Sample Selection Bias

An issue which can affect the generalizability of the results presented previously is the sample selection bias. Given that spinoff is an outcome of a firm's choice, the spinoff sample does not represent a random sample. As a result, it is possible that the underlying factors motivates firms to spinoff may also be correlated with the improvement in pay-performance elasticity, similar to an omitted variable problem.

To address the selection bias issue, I follow the Heckman's two stage regression procedure (Heckman, 1979). In essence, the first stage employs the PROBIT model to estimate the probability that firms undertake the spinoff decision based on their underlying characteristics. The Inverse Mills ratio of the PROBIT regression, representing the likelihood of the spinoff decision, is obtained and enters into the second stage regression as an explanatory variable to re-estimate the pay-performance elasticity (i.e. Model (1)).

For the first stage of the Heckman procedure, I obtain the matched firms by selecting one firm which has the same 4-digit SIC code, closest in size (proxy by

Total Assets) as the sample firms, and in the same year and month of the spinoff distribution. The sample firms are combined with the matched firms to yield a pooled sample of 117 firms. The pooled sample is used to estimate the following model:

$$S_i^* = \beta_0 + \beta_1 K_i + \varepsilon_i \qquad (\text{where } S_i = 1 \text{ if } S_i^* > 0 \text{ and } S_i = 0 \text{ if } S_i^* < 0)$$

The dependent variable, S_i^*, is the un-observable variable related to firms' spinoff decision with $S_i^* > 0$ if a firm decided to spinoff. The observable variable S_i is used to proxy for S_i^*, $S_i = 1$ for the spinoff sample and otherwise for the matched sample. K is a set of underlying firm specific factors that is associated with the spinoff decision. Following Yook (2006), I have included ROA (defined as operating income before extraordinary items divided by total assets), ROA of Years -2 and -3, standard deviation of the 3 ROAs, leverage (calculated by total debt divided by total assets), Size (proxy by total assets), investment level (calculated by dividing capital expenditures by total sales), Tobin's Q (defined as the market value of total assets divided by the book value of total assets, where the market value is computed by book value of total assets plus market value of common equity minus book value of common equity and deferred taxes), number of segments and standard deviation of monthly returns. Unless

specified, all variables are measured at Year -1 in order to represent the parent firms' characteristics immediate before the spinoff decision. A variable, lambda (also known as the inverse Mill's ratio) is obtained from the regression, where lambda is defined as:

$$\lambda_i = \frac{\phi(Z_i)}{\Phi(-Z_i)}$$

and where ϕ and Φ denotes the density and the distribution for a standard normal variable, and Z_i is defined as:

$$Z_i = -\frac{\beta_0 + \beta_1 K_i}{\sigma_\varepsilon}$$

Lambda represents the likelihood that firms decided to spinoff, and included as an explanatory variable to re-estimate Model (2) in the second stage. The model for the second stage is as follows:

$$\begin{aligned} ln(CEO\ pay_t/CEO\ pay_{t-1}) = \ & \alpha + \beta_1\Delta(shareholder\ wealth_t) + \beta_2\Delta(shareholder \\ & wealth_{t-1}) + \beta_3 SpD + \beta_4 * SpD * \Delta(shareholder\ wealth_t) \\ & + \beta_5 * SpD * \Delta(shareholder\ wealth_{t-1}) + \beta_6 * Spinsize + \\ & \beta_7 * \lambda_i \end{aligned} \quad (4)$$

Following the methodology previously used, I combine the pre-spinoff year sample (Year -1) and the full post-spinoff sample (i.e. from Year +1 to Year +3) as the event window to estimate equation (4). In addition, all alternative proxies used previously for CEOs' wealth and shareholders' wealth are included to ensure consistency. If the results reported previously are driven by sample selection bias, one would observe that β_7 being significant. In addition, the inclusion of lambda will also reduce the statistical significance of the incremental pay-performance elasticity (i.e β_4 and β_5) as reported previously.

[Insert Table 8 About Here]

The results of the two-stage regressions are displayed in Panel A and B of Table 11 respectively. According to Panel A, two factors are associated with the spinoff decision. Lagged ROA (ROA_{t-2}) is negatively associated with the spinoff. In other words, firms with poor past performance will likely engage in spinoff. This finding is consistent with the theoretical model from Chemmanur and Yan (2004). The authors analytically show that a rationale behind corporate spinoff is because spinoff can avoid the incumbent managers from losing corporate control. In particular, the incumbent firm management has a choice after knowing the firm's potential to spinoff: the manager either work more diligently

in managing the firm in order to avoid losing control, or the manager give up control of one of the firms as a consequence of spin-off. However, no matter which decision the incumbent manager undertake, the authors show that the firm value will increase with the spinoff decision. Implicitly, the presence of an underperforming division will increase the likelihood of having that division to be spun off as the division will otherwise be taken over by other firms. Since the underperforming division affects the performance of the firm as a whole, one would expect that poorly performed firms are associated with the likelihood to spinoff. The number of segments is also associated with the likelihood of spinoff. This is consistent with the model from Anon (1991). In addition, both results are consistent with Yook (2006).

Panel B of Table 8 shows the results for the second stage regressions for the 6 model specifications as depicted in Table 5. The estimated coefficient for lambda exhibited mixed signs throughout all six regression specifications. In fact, none of these coefficients are significant at conventional levels. This result suggests that the previous pay-performance elasticity results are not driven by firm specific characteristics pertains to spinoff firms. Based on the estimated coefficients for two-way interaction terms (i.e. *SpDxconRtn*, *SpDxlagRtn*, *SpDxconROE* and *SpDxlagROE*), their signs are significance are very similar to

the ones depicted in Panel B of Table 5 using stock returns as a measure of shareholders' wealth. Although the significance for *SpDxconROE* has dropped as compared the results in Table 5 for the ROE regression specifications, the coefficients are still significant at 5% level. Similarly, despite a drop in significance for *SpDxconROE*, the coefficient for *SpDxlagRtn* in the last two specifications using combined performance measures yields consistent results with Panel B of Table 5.

Taken together, the results from Panel B of Table 8 indicate that the incremental pay-performance elasticity results are largely unaffected even with the inclusion of sample selection bias correction term. Alternatively stated, my results reported previously are not driven by the sample characteristics of the spinoff firms.

3.3.5—Other Tests

To ensure my results are not driven by industry and year specific effects, I repeat the same tests by including the year, industry dummies and firm size (proxy by Total Assets). The tests yield similar results. Besides measuring performance by using stock returns and ROE, I repeat the same tests by using return on assets (ROA) as a proxy for CEO performance. The results are

qualitatively similar to the ROE regressions. In other words, my test results are robust to alternative specifications and proxies.

3.4 – Summary and Conclusion

In this chapter, I document evidence supporting the hypothesis that spinoff improves the interest alignment of the parent and spun-off firms. This result is robust using both market and accounting based measure of shareholder value. However, I only find weak evidence to support the conjecture that interest alignment for focus-increasing spinoffs is stronger than non focus-increasing spinoffs. Having said that, this finding is still consistent with prior study by Daley et al (1997), in which the authors find no evidence to support the incentive alignment explanation towards focus-increasing spinoffs value creation. In sum, my results are also consistent with extant literature which suggests that spinoffs create value by means of agency costs reduction.

CHAPTER 4 – THE IMPACT OF CORPORATE GOVERNANCE ON INTEREST ALIGNMENT OF SPINOFF

4.1 Hypothesis Development

The empirical evidence from the previous chapter documented that spinoff improve the pay-performance sensitivity for the parent and the spun-off firms after the transaction. I argue such improvement is possible as spinoff allows firms to write stronger performance-based contracts in a more cost efficient manner. The intended outcome from the new contracts is to reduce agency problems by promoting interest alignment between shareholders and managers.

From an agency theory perspective, Jensen and Meckling (1976) define firms as a set of interconnected contracts. Consequently, the owners of the firm are vulnerable to agency problems from the contracting entities. In order to mitigate agency problems, a rich set of literature contend that the presence of effective corporate governance mechanisms is a crucial means to control agency problems (e.g. Fama and Jensen (1983), Jensen (1993), Jensen and Murphy (1993), Core et. al. (1999) etc.). The control is exercised in the form of monitoring the agents' behavior or binding the interest of both the agent and principal. In addition, the board of directors is considered as a key element towards corporate governance (e.g. Jensen and Meckling (1976), Fama and Jensen (1983), Jensen (1993)).

Given that spinoff mitigates agency problems by strengthening the interest alignment between managers and shareholders, in conjunction with the argument from agency theory and corporate governance literature, it is plausible that spinoff mitigates agency problems by giving firms an opportunity to improve their governance mechanisms. In turn, such improvement promotes stronger interest alignment when firms change the structure of CEO compensation contracts in spinoff. Taken together, I hypothesize that corporate governance mechanisms for both parents and spun-off firms are associated with the improvement of interest alignment in spinoff. Also, firms with stronger governance can likely gain more benefit from the efficient contracting in spinoff, resulting in further improvement in interest alignment as compared to the weaker governance counterparts. Therefore, I expect that both the parent and spun-off firms with better corporate governance are associated with stronger improvement in interest alignment. Given that spinoff allows an opportunity for firms' to improve their governance structure, which subsequently allows closer bonding between CEO and shareholders, such effect will likely persists after spinoff. Therefore, I further hypothesize that change in corporate governance for parents and spun-off firms are associated with their post-spinoff interest alignment.

Using pay-performance elasticity to proxy for interest alignment, and a group of corporate governance variables to proxy for the various monitoring and bonding mechanisms, I compare the total pay-performance elasticity augmented by the corporate governance variables for the parent firms before and after spinoff; and the parent firm before and spun-off firm after spinoff. I am aware that similar studies have conducted in the past: Ahn and Walker (2007) document that diversified firms conducting spinoff have better governance as compared to the peers firms; Seward and Walsh (1996) have also examined the change in corporate governance for spinoff firms. Meanwhile, this study is different from the previous studies as it examines more facets of corporate governance for spinoff firms and relates them to the improvement in interest alignment.

4.2 Data and Methodology

4.2.1 Measures of Corporate Governance

In order to address the impact of corporate governance towards the interest alignment of spinoff firms, I examine four broad dimensions of corporate governance: board structure, committee independence, board and committee activities, and ownership structure. Variables included in each dimension are drawn from the prior literature.

4.2.1a Measures of Board Structure

As indicated by Fama and Jensen (1983), the board of directors is the "apex of the corporate governance". Imperatively, the board members' characteristics present in the board as a whole is a key in assessing the effectiveness of the firm's governance. The first variable I have included in this dimension is percentage of outside independent directors on board, computed by dividing the outside independent directors by the total number of directors on the board. Independent outside directors are directors who do not have outside business or family relationship with the firm, and have not been previously employed in the firm for the last 3 years. As indicated by prior studies (e.g. Rosenstein and Wyatt (1990), Karamanou and Vafeas (2005), Cornett, Marcus and Tehranian (2008), Chhaochharia and Grinstein (2009) Nguyen and Nielsen (2010) etc.), independent outside directors can serve as effective monitors to the company as they are not influenced by firm's management and thus they can exert more pressure to management with more independent views as compared to inside directors[22]. It

[22] I also acknowledge that a number of studies find contrary evidence on the presence of independent directors and firms' governance (e.g. Agrawal and Knoeber (1991), Bhagat and Black (2001) etc.). However, study from Duchin et. al. (2010) contends that the effectiveness of outside independent directors on the board is dependent on their ability to acquire firm specific information. Knowing that spinoff creates value by means of reducing information asymmetry

follows that higher percentage of outside independent directors in board represents more effective firm governance and vice versa.

The next variable included in this group is the percentage of interlocked director, computed as the number of interlocked directors divided by the number of directors on the board. Two directors are considered as interlocked when one director is serving as a board member of the other director's company. The close relationship between interlocked directors can impair boards' independence by mutually influencing of each other's choices to their personal advantage, therefore hampering the boards' monitoring role. Thus, a higher percentage of interlocked directors indicates poor corporate governance and vice versa. This view is shared by a number of corporate governance studies (e.g. Hallock (1997), Core et al. (1999), Lacker et. al. (2005), Bizjak et. al.(2009) etc.), along with regulators and professional bodies (e.g. Securities and Exchange Commission (SEC), the National Association of Corporate Directors (NACD) etc.).

Another variable in this group is the percentage of gray directors, computed by dividing the number of gray directors to the total number of directors on board.

(e.g. Krishnaswami and Subramaniam (1999), Huson and MacKinnon (2003)), an increase in outside independent directors after spinoff can promote post spinoff firms' governance.

Gray directors are defined as outside directors who serve as other capacity (e.g. legal advisor, consultant etc) and receive additional fees while serving as an incumbent director in the firm at the same time, consistent with Core et al. (1999) and Nguyen and Nielsen (2010). Gray directors weaken boards' effectiveness as their choices will be influenced by the additional capacity assumed in the firm, consequently hinder their monitoring role. Therefore, a higher percentage of gray directors on board represent ineffective governance and vice versa.

As a measure of boards' diversity, I have included the percentage of female director in this group, calculated as the number of female directors divided by total number of directors on board. Drawn from the findings of social psychology, Morck (2008) argue that heterogeneous boards can avoid the directors' tendency to submit to authority, such as the firms' CEO, resulting in broader perspectives and less groupthink. In a sense, a more diverse board, proxy by the percentage of female directors, promotes better monitoring. Empirical findings from Carter et al. (2003) and Adams and Ferreira (2009) supported such proposition.

4.2.1b Measures of Committee independence

For this dimension, I examine the independence of the three monitoring committees as defined by Klein (1998). Consistent with prior literature (e.g. Klein (1998), Anderson et al. (2004), Uzun et al. (2004) etc), the variables included are percentage of independent directors in audit, compensation and nominating committees respectively. Extending the argument of independent board members, having independent external members serving in these three committees can promote effective monitoring as their views and choices will not be easily influenced by management. Thus, a higher percentage of independent external members in each of these committees represent better governance. Evidence from prior studies such as Klein (2002), Anderson et al. (2004) and Vefeas (2003) etc. support this argument.

4.2.1c Measures of Board Activities

The performance and effectiveness of board is related to the work carry out by the board members. Following prior studies from Vafeas (1999), Beasley et. al (2000), Karamanou and Vafeas (2005) etc., this aspect of board characteristics

is proxy by the number of board meetings. Thus, I have included number of board meetings in this group. Active boards meet more often and thus increase the amount of time members' spent on monitoring efforts, consequently improving firms' governance (Conger et. al (1998), Anderson et al. (2004), Karamanou and Vafeas (2005) etc.). Put differently, more board meetings are associated with better governance and vice versa.

4.2.1d Measures of Ownership Structure

Agency theory suggests that bonding mechanisms can mitigate agency problems by aligning CEO and shareholders' interests (Jensen and Meckling (1976), Jensen (1993)). Further, Jensen (1993) suggests that the presence of institutional investors can serve as active monitors given their financial interests in the firm. In light of these propositions, I have included institutional ownership to measure the effectiveness of bonding mechanisms in spinoff firms. The ownership ratio is computed by shares owned by institutional investors divided by total shares outstanding. If bonding mitigates agency problems, higher percentage institutional share ownership would suggest stronger

governance and vice versa. This line of reasoning is also supported by prior studies (e.g. Core et. al. (1999), Hartzell and Starks (2003), Yun (2009) etc.).

4.2.2 Methodology

To analyze the association between corporate governance and interest alignment for spinoffs, I modify Equation (1) with the inclusion of a variable to measure the governance of spinoff firms. Specifically, I employ the following model for this analysis:

$$\begin{aligned} ln(CEO\ pay_t/CEO\ pay_{t-1}) = {} & \alpha + \beta_1\Delta(shareholder\ wealth_t) + \\ & \beta_2\Delta(shareholder\ wealth_{t-1}) + \\ & \beta_3*SpD*\Delta(shareholder\ wealth_t) + \\ & \beta_4*SpD*\Delta(shareholder\ wealth_{t-1}) + \beta_5 DCG + \\ & \beta_6 SpD + \beta_7*SpD*\Delta(shareholder \\ & wealth_t)*DCG + \beta_8*SpD*\Delta(shareholder \\ & wealth_{t-1})*DCG + \beta_9 Spinsize + Industry \\ & Dummies + Year\ Dummies \qquad (4) \end{aligned}$$

The CEO pay is measured by total CEO compensation as defined in the previous chapter (i.e. salary, bonus, stock options, restricted stocks and other compensation). Following the methodology from the previous chapter, I use stock return and ROE to proxy for market-based and accounting-based measure of shareholders' wealth. *SpD* and *Spinsize* denote the spinoff dummy and the Spinoff size variable respectively. Year and industry dummies are also included as control variables. The new variable included in Equation (4) is *DCG*, which represents a composite score based on a dichotomous partitioning of spinoff firms according to their corporate governance characteristics. Specifically, for each individual corporate governance variable, I dichotomize the spinoff firms based on the median of the corporate governance variable from Year -1 to Year 3[23], with 1 representing stronger governance and 0 representing weaker governance with respect to the corporate governance variable in question. Using a dichotomized approach makes it possible to combine different corporate governance proxies within a specific dimension of corporate governance. It also allows combing the four corporate governance dimensions together as a whole, thus providing a more holistic view of governance structure present in spinoff firms. Next, the

[23] For the post spinoff sample, the dichotomy for the parent and spun-off firms are separated in order to ensure consistency.

dichotomized corporate governance variables within each of the four governance dimensions are added to yield the DCG score for each group. Accordingly, group 1 represents board structure and it includes percentage of outside independent directors, percentage of interlocked directors, percentage of gray directors and percentage of female directors; group 2 represents committee independence and it comprises the percentage of outside independent directors in nominating, compensation and audit committee respectively; group 3 denotes board activities and it consists of the number of board meetings; group 4 represents ownership structure and comprises percentage of shares owned by institutional investors.

In essence, DCG is a composite score to proxy for the strength of governance mechanisms present in spinoff firms; higher DCG denotes firms with stronger governance mechanisms and vice versa. The key variables of interest in Equation (4) are the DCG score variable and the two-way and the three-way interaction terms (i.e. $SpD*\Delta(\text{shareholder wealth}_t)$, $SpD*\Delta(\text{shareholder wealth}_{t-1})$, $SpD*\Delta(\text{shareholder wealth}_t)*DCG$, $SpD*\Delta(\text{shareholder wealth}_{t-1})*DCG$). *DCG* score denotes the effect of corporate governance on the change in compensation. The two-way interaction terms represent the incremental change in pay-performance elasticity for the weaker governance group after spinoff;

whereas the three-way interaction terms represent incremental change in pay-performance elasticity of the stronger governance group over the weaker governance group after spinoff.

If corporate governance is related to the improvement in interest alignment as hypothesized, the coefficient β_5 is expected to be positive and significant. In addition, if the interest alignment for the stronger governance group is more pronounced as hypothesized, the coefficients β_7, β_8 or both are expected to be positive and significant.

To further test the conjecture that the post spinoff interest alignment is associated with the change in corporate governance before and after spinoff, I estimate the following model:

$$ln(CEO\ pay_t/CEO\ pay_{t-1}) = \alpha + \beta_1\Delta(shareholder\ wealth_t) + \beta_2\Delta(shareholder\ wealth_{t-1}) + \beta_3*\Delta(shareholder\ wealth_t)*\Delta DCG + \beta_4*\Delta(shareholder\ wealth_{t-1})*\Delta DCG + \beta_5\Delta DCG + \beta_6 Spinsize \quad (5)$$

Essentially, equation (5) is merely a variant of equation (4) but without the *SpD* indicator variable as the analysis simply uses post-spinoff compensation and performance data for the parent and spun-off firms. Meanwhile, the new variable in equation (4) is Δ*DCG*, which captures the change in the composite corporate governance score before and after spinoff. To construct Δ*DCG*, I obtain the average of every corporate governance variables in Year -2 and Year -1 for the pre-spinoff parents, and the average of the same variables in Year +1 to Year +3 for the post-spinoff firms[24]. This yields the average level of pre and post spinoff governance for spinoff firms. Next, I obtain the change in corporate governance by taking the difference from the average pre and post spinoff governance for every corporate governance variable. The resultant variables are then dichotomized based on their median values, with 1 represents governance improvement and 0 otherwise. Finally, these dichotomized governance variables within each of the four corporate governance dimensions are then added to form the Δ*DCG* score for the governance dimension.

Essentially, the Δ*DCG* score proxy for the extent of corporate governance change before and after the spinoff event. A higher score represents a stronger

[24] The average for the post spinoff parents and spun-off firms are computed separately.

governance improvement from the spinoff event and vice versa. If spinoff firms' post spinoff interest alignment is associated with the change in corporate governance as hypothesized, the coefficients β_3, β_4 or both are expected to be positive and significant for the post spinoff parents and spun-off firms.

4.2.3 Data

Based on the spinoff sample, along with the CEO compensation and firms' performance used in previous chapter, I further obtain the corporate governance data for spinoff firms to carry out this analysis. Following prior studies (e.g. Gordon and Pound (1993), Hartzell and Starks (2003), Yun (2009) etc.), I gather the institutional ownership data from the *Thomson Reuters Institutional (13F) Holdings* (formerly known as *CDA/Spectrum* database). All other corporate governance variables are first obtained from the *RiskMetrics* Directors database (formerly known as *Investor Responsibility Research Center (IRRC)* Takeover Defense database). However, this database does not contain all the governance variables in this study (For example, data on board meetings are not available). Also, *RiskMetrics* only covers S&P1500 companies starting from 1996. To complete my governance dataset, I manually collect the remaining data by

analyzing the proxy statements included in the *Direct Edger* database. Since *Direct Edger* only includes proxy statements commencing from 1992, this effectively limits my governance sample and the full dataset from 1992 to 1997. The sample size for spun-off firms is considerably smaller than parent firms due to the availability of proxy statements.

[Insert Table 9 About Here]

Descriptive statistics for the 9 corporate governance variables making up the 4 governance dimension in this study is displayed in Table 9. Panel A pertains to the parent firms whereas Panel B relates to spun-off firms. Consistent with the reporting period in Table 2, the period reported for both parent firms and spun-off firms' spans from Year +1 to Year +3.

Referring to all five variables related to board structure (group 1), four variables has improved after spinoff for the parent firms as shown in Panel A of Table 9. On average, the parent firms initially have a mean (median) of 58% (62%) of independent directors and it has increased to 63% (67%) in Year 3 after spinoff. Such observation is consistent with Seward and Walsh (1996), which document that the boards of post spin-off companies comprise of a minority of inside directors. In addition, the average from Year -1 is similar to the results

reported in Ahn and Walker (2007)[25]. The remaining variables in this group, on average, also indicated an improvement in corporate governance from Year -2 to Year 3: percentage of interlocked director has dropped from the mean 4% to 3%, percentage of gray director has decreased from 6.2% to 6.1%, percentage of female director has increased from 7.6% to 9.3%. Similar observation is also noted as for the spun-off firms as indicated in Panel B. On average, the spun-off firms have a mean and median of 68% of independent directors in Year +3 after spinoff. This again is consistent with the findings from Seward and Walsh (1996). Although board diversity, measured by the percentage of female directors, are similar to the pre spinoff parent on average, the other two variables, on average, has improved after spinoff in Year +3: percentage of interlocked directors is reduced to 1.6% and percentage of gray director has also decreased to 1.5%. As a whole, the evidence from summary statistics broadly suggests board structure for both the parent and the spun-off firms have improved after spinoff.

In terms of committee independence (group 2), the independence of the two out of three committees for the parent firms have improved as shown in Panel A of Table 9. During the period of Year -2 to Year +3, the mean percentage of

[25] Slight deviation is likely due to difference in sample period.

independent directors in audit and compensation committees have increased by 4% (82% to 86%) and 10% (80% to 90%) respectively. Similarly, the independence of all three committees for the spun-off firms (Panel B) has also experience improvement after spinoff. On average, the percentage of independent directors in audit, compensation and nominating committees has increased by 12% (82% to 94%), 11% (80% to 91%) and 11% (75% to 86%) correspondingly. Together, the committees for both the parent and spun-off firms are more independent after spinoff. My findings are consistent with Seward and Walsh (1996), which suggests that the majority members in compensation committees for post spinoff firms are comprise of outside directors.

As for board activities (group 3) for the parent firms, the mean (median) frequency of board, meetings dropped by 0.5(2) times for the same period. Shifting the focus to the spun-off firms in Panel B, the board meetings are reduced by a mean (median) of 1(2) times. In sum, it appears that the boards and committees for both parent and spun-off firms meet less frequently after spinoff.

From the ownership structure perspective, the institutional investors, on average, owns more as indicated in Panel A of Table 12: the mean (median) ownership increase by 7.5% (10.2%) from Year -2 to Year +3 after spinoff. Akin

to the parent firms, institutional ownership for spun-off firms also increases after spinoff, again similar to the parent firms. Financial institutions increase their ownership by a mean (median) of 3.2% (4.4%) from Year -2 to Year 3. As a whole, summary statistics suggests spinoff improves institutional ownership for both the parent and spun-off firms.

4.3 Results

The following reports the regression results from estimating equations (4) and (5) with respect to the 4 different sets of corporate governance variable groups discussed earlier: board structure (group 1), committee independence (group 2), board activities (group 3) and ownership structure (group 4). To further examine the impact of these governance mechanisms as a whole, I also report the results for the overall corporate governance (known as group total). Essentially, I combine the corporate governance composite score for all four groups together as the total corporate governance group[26] to estimate models (4)

[26] In the absence of explicit theory on the interaction of corporate governance mechanisms, I simply add the score of all four governance groups to arrive at the group total. Meanwhile, this assumes all the governance variables included are complementary to one another under equal weighing.

and (5). The regression results with parents before and after spinoff will be reported first, followed by the results with pre-spinoff parents and spun-off firms. To estimate equation (4) for the parent firms before and after spinoff, I combine the Year -1 pre-spinoff parent sample and Years +1 to Year +3 post-spinoff parent firms. Likewise, to estimate the same panel regression model for spun-off firms, I simply change the post-spinoff sample to include spun-off firms from Years +1 to Year +3. The dependent variable used for all models is the first difference of log in total CEO compensation as the objective is to examine the association between spinoff firms' total pay-performance elasticity and their governance structures[27]. Following the analysis in the previous chapter, both stock returns and ROE are employed as proxies of shareholders' wealth.

[27] In unreported tests, I have repeated the same analysis using equity compensation as a proxy for CEO compensation. The results are similar to the ones reported here.

4.3.1 – Corporate Governance and Pay-Performance Elasticity – Parent Firms

[Insert Table 10 About Here]

Panel A of Table 10 reports the regression result of equation (4) for parent firms using stock returns as market-based measure of shareholders' wealth. If corporate governance matters towards the interest-alignment of spinoff firms as hypothesized, I expect the coefficient of the corporate governance score variable (i.e. *DCG*) to be positive and significant. From Panel A, *DCG* for committee independence (Group 2) and ownership structure (Group 4) are positive and significant at 5% or 1% levels[28]. In other words, committee independence and institutional ownership are related to the improvement in interest alignment for the parent firms. Although the *DCG* coefficients for the remaining corporate governance dimensions are not significant at conventional levels, their signs are positive. Further, the coefficient for group total is also positive and significant at 1% level. Taken together, the overall corporate governance of spinoff firms contributes towards the interest alignment explanation of spinoff parent firms, supporting my first hypothesis. This finding is consistent with extent agency

[28] All t-statistics reported in this Chapter are computed based on White (1984) standard errors robust to within firms' cluster correlation (i.e. Rogers (1993) standard errors).

theory and governance literature that presence of effective governance mechanisms mitigates agency problems in firms (Jensen and Meckling (1976), Jensen (1993), Shleifer and Vishny (1997) etc.). It is also consistent with the Seward and Walsh (1996), which argues that spinoffs facilitate the implementation of effective governance and control mechanisms. Further, it is broadly consistent with the agency cost explanation of spinoff value creation (e.g. Hite and Owers (1983), Aron (1991) etc.).

Turning to the interaction terms in Panel A of Table 10, the coefficients for the two-way interaction terms (i.e. *SpDxconRtn* and *SpDxlagRtn*) indicate the change in pay-performance elasticity for the weaker governance group whereas the coefficients whereas the coefficients for the three-way interaction terms (i.e. *SpDxconRtnxDCG* and *SpDxlagRtnxDCG*) indicates the change for stronger governance spinoff. My second hypothesis that stronger governance firms will experience more pronounced interest alignment is supported if one or both of the three-way interaction terms is/are positive and significant. The coefficient for *SpDxlagRtn* is positive and significant at conventional levels for all four corporate governance dimensions. In addition, it is also positive and significant at 5% level for the overall corporate governance. In other words, spinoff improves the interest alignment for the weaker governance parent firms.

For the three-way interaction terms, all coefficients among the four regression specifications display mixed signs with one coefficient being negative significant ($p<0.1$). Nevertheless, the three-way interaction terms in Group Total are not significant at conventional levels. Therefore, the evidence does not support my second hypothesis that improvement in interest alignment is more pronounced for strong governance firms.

[Insert Table 11 About Here]

Results using ROE as an accounting measure of shareholders' wealth are shown in Table 11. Similar to the results with stock return regressions in Table 10, the coefficient for *DCG* are positive and significant at conventional levels ($p < 0.05$ and $p<0.1$) for committee independence (Group 2) and ownership structure (Group 4). In addition, it is also positive at significant at 1% level for the overall governance (group total). The results mirrors with the findings in Table 9 and it provide further support to my hypothesis that corporate governance is associated with the interest alignment improvement of parent firms. Such findings also complement existing agency theory and governance literature which argues that agency problems can be alleviated by the presence of effective corporate

governance mechanisms (e.g. Jensen and Meckling (1976), Shleifer and Vishny (1997) etc.).

Focusing on the two-way interaction terms, the improvement in pay-performance for the weaker governance firms is mixed for the first three groups of corporate governance as the contemporaneous and lagged coefficient display mixed signs while significant at conventional levels. Meanwhile, ownership structure is positively associated with the contemporaneous pay-performance sensitivity improvement for weak governance spinoff parents. Nevertheless, the results suggest that overall governance does not affect pay-performance sensitivity of the weaker firms.

Examining the three-way interaction for evidence to support my second hypothesis that interest alignment for stronger governance parents improves more than weaker governance counterparts, the coefficient for both contemporaneous and lagged interaction terms are not significant at conventional levels with mixed signs for all 4 corporate governance dimensions. In fact, the same pattern is also shown in the last regression specification with overall corporate governance. Collectively, I do not find evidence to support my hypothesis that parent firms with strong corporate governance experience more pronounced improvement in

interest alignment based on accounting-based measure of shareholders' wealth. Nevertheless, this finding is consistent with the result from Table 10.

Altogether, there is strong and robust evidence indicating that corporate governance in parents firms is associated with the improvement in interest alignment, consistent with my first hypothesis. Such results complement to the prior agency and spinoff literature (e.g. Jensen and Meckling (1976), Schipper and Smith (1983), Seward and Walsh (1996) etc.). Meanwhile, I do not find evidence to support my second hypothesis that stronger governance spinoff parents experience more pronounced interest alignment as compared to the weaker governance counterparts.

4.3.2 – Change in Corporate Governance and Post Spinoff Pay-Performance Elasticity: Parent Firms

Empirical evidence from previous section established that governance structure present in spinoff parents is associated with the interest alignment. As an extension of the analysis, I examine whether the change in governance mechanisms for the parent firm before and after spinoff is associated with

pay-performance sensitivity of the post-spinoff parent by estimating equation (5). Using stock return and ROE as a measure of shareholders' wealth, the results of this analysis is illustrated in Tables 12 and 13 respectively.

[Insert Table 12 About Here]

The hypothesis that post-spinoff interest alignment in parent firms is associated with change in corporate governance from spinoff is supported if either one or both of the interaction terms are positive and significant. Using stock return as a measure of shareholders' wealth, Table 12 indicates that the coefficient for *conRtnxΔDCG* is positive and significant for group 4 ($p<0.01$) while the coefficient of *lagRtnxΔDCG* is positive and significant for group 2 and group 4 ($p<0.01$ and $p<0.1$). In addition, the lagged interaction term is also positive and significant ($p<0.05$) for group total. In other words, the change in committee independence, ownership structure and the overall governance mechanisms have positive influence on the pay-performance elasticity of parent firms after spinoff. Therefore, the evidence supported my hypothesis and this is consistent with the argument from Seward and Walsh (1996). The results also complements with prior governance literature on committee independence, institutional ownership and boards' effectiveness (e.g. Newman and Mozes (1999), Klein (2002),

Anderson et al. (2004), Hartzell and Starks (2003), Yun (2009) etc.). In addition, it supplements the literature from a broader perspective that effective governance mechanisms mitigates firms' agency problems (e.g. Jensen and Meckling (1976), Fama and Jensen (1983) etc.)

[Insert Table 13 About Here]

Table 13 provides the results using ROE as a measure of shareholders' wealth. The coefficient *lagROExDCG* is positive and significant for group 2 and group total ($p<0.05$ and $p<0.1$). The results indicate that change in committee independence and the change in overall governance after spinoff is positively associated the post-spinoff pay-performance elasticity of the parent firm. Both results are consistent with the previous results using return as a market-based measure of shareholders' wealth. Such finding again supports my hypothesis that post spinoff pay-performance sensitivity of parent firms are associated with the change in governance from spinoff.

Taken together, results in both Tables 12 and 13 suggests that change in committee independence and change in overall governance structure is associated with pay-performance elasticity of the parent firms after spinoff. The result is robust using both a market-based and accounting-based measure of shareholders'

wealth. This lends support to my hypothesis that change in governance mechanisms influences the post-spinoff firms' interest alignment. Again, my finding is also consistent with Seward and Walsh (1996) and the proposition from the agency theory literature (e.g. Jensen and Meckling (1976), Fama and Jensen (1983) etc.) It also support the contention from prior studies that committee independence improves firms' governance (Klein (2002), Anderson et al. (2004) and Vefeas (2003) etc.).

4.3.3 – Corporate Governance and Pay-Performance Elasticity – Spun-off Firms

To ascertain the influence of corporate governance on the pay-performance elasticity of spun-off firms, I repeat the same analysis from the previous section for spun-off firms. The results using stock return and ROE as a measure of shareholders' wealth are reported in Tables 14 and 15 correspondingly. Given the relative small corporate governance sample for spun-off firms[29], the interpretation of following results is cautioned.

[29] As noted in Panel B of Table 16, almost all governance variables for spun-off firms are less than 50 for all three post-spinoff years.

[Insert Table 14 About Here]

Panel A of Table 14 provides the regression results with spun-off firms using stock return to proxy for shareholders' wealth. The estimated coefficients of *DCG* are positive and significant at conventional levels ($p<0.05$ and $p<0.01$) for three out of four individual corporate governance dimensions. In addition, the coefficient is also positive and significant at 1% level for last regression with overall governance. Therefore, the results indicate that broad structure, committee independence, ownership structure, and the overall governance are associated with the improvement of interest alignment of spun-off firms. This finding is consistent with the parent results and it supports my hypothesis that corporate governance matters towards the interest re-alignment of the parent and spun-off firms. Moreover, it also supports the results from Seward and Walsh (1996), which suggest that spinoff facilitates the improvement of corporate governance systems. Further, it is also consistent with the proposition that agency problems can be mitigated by through corporate governance mechanisms (e.g. Jensen and Meckling (1976), Shleifer and Vishny (1997) etc). In addition, it complements with the agency explanation of spinoff value creation (e.g. Schipper and Smith (1983), Ahn and Walker (2007) etc.).

Among the two-way interaction terms for the four individual governance dimensions, the lagged two-way interaction-terms are positive and significant ($p<0.1$) in two out of four specifications. Meanwhile, the two-way interaction terms for the overall governance exhibit mixed signs with the lagged term being significant at 10% level. The result suggests that weaker governance spun-off firms experience interest alignment improvement after spinoff. Shifting the focus to the three-way interaction terms, none of the coefficients for the individual corporate governance are significant at conventional levels with mixed signs. Also, both interaction terms for the overall governance are also not significant at conventional level with mixed signs. While the results from the spun-off firms are consistent with the results from the parents' regressions, the results do not support my second hypothesis that interest alignment improves more for stronger governance spun-off firms. In spite of this, the absence of results may also due to the small sample size observed for spun-off firms.

[Insert Table 15 About Here]

Using ROE as a measure of shareholders' wealth, the coefficient of *DCG* is positive and significant at conventional levels for all four individual corporate governance dimensions ($p<0.05$ and $p<0.01$). In addition, it is also positive and

significant at 1% level for overall governance. This finding lends support towards my first hypothesis that corporate governance is related to the improvement in interest alignment for spun-off firms. It is also consistent with results from previous analysis using stock return as shareholders' wealth measure, and with the results from the parents' regressions. Moreover, the results are again consistent with findings from Seward and Walsh (1996), and from the agency theory and governance literature (e.g. Jensen and Meckling (1976), Shleifer and Vishny (1997) etc.).

For the two-way interaction terms, the signs and significance of the coefficients among the five regression specifications does not point to a particular trend. Likewise, other than the second specification (committee independence), which shows significant coefficients with mixed signs, none of the three-way interaction terms in the remaining specifications are positive and significant at conventional levels. These findings are akin to the previous analysis with stock returns, which in turn do not lend support towards my second hypothesis that stronger governance firms promote more improvement in interest alignment.

As a whole, strong evidence suggest that the presence of governance mechanisms in spun-off firms is related to their interest re-alignment from spinoff.

This finding is robust using both market and accounting-based measure of shareholders' wealth. Meanwhile, I do not find evidence to support the conjecture that stronger governance spun-off firms will experience more improvement in interest alignment. Meanwhile, the absence of results may due to the small sample size of spun-off firms.

4.3.4 – Change in Corporate Governance and Post Spinoff Pay-Performance Elasticity: Spun-off Firms

Results from previous section suggest that governance of spinoff firms foster the interest alignment of spun-off firms for both the market and accounting-based measure of shareholders' wealth. In this section, I report the regression results from estimating the change in corporate governance and the post spinoff pay-performance elasticity for spun-off firms (i.e. equation (5)). My hypothesis is supported if one or both interaction terms are positive and significant.

[Insert Table 16 About Here]

Table 16 reports the results using stock return as a proxy for shareholders' wealth. Both interaction terms (i.e. *conRtnxΔDGC*, *lagRtnxΔDGC*) for all four

governance dimensions and the overall governance are not significant at conventional levels and with mixed signs. For the ROE regressions (Table 17), the coefficient for *lagROEx∆DGC* is negative and significant for committee independence (Group 2) and the overall governance ($p<0.01$ and $p<0.1$). Taken together, my hypothesis that change in corporate governance fosters post spinoff interest alignment is not supported for spun-off firms. Although the results for spun-off firms are not consistent as the parents' counterparts, the absence of result is potentially driven by the small sample size for spun-off firms.

[Insert Table 17 About Here]

4.4 Additional Tests

To ensure results conform to different specifications, I have conducted a few additional tests. Rather than dichotomize the governance variables throughout Year -1 to Year +3 for both parent and spun-off firms, I repeat estimating equation (4) based on dichotomizing the governance variables at Year -1 and it yield similar results. Next, I repeat the analysis using equity compensation as a dependent variable and the results is again similar. In addition, I repeat the same tests by

replacing the composite score using ranked variables rather than dichotomized variables and the results are qualitatively similar. In other words, my results are robust from alternative proxies in measuring the spinoff firms' governance.

One may argue that corporate governance quality may improve over time and the reported results are therefore driven by the corporate governance improvement over time rather than the spinoff event. To explore this issue, I plotted a graph with the corporate governance variables for all firms in calendar years throughout my sample period based on the mean of corporate governance. If corporate governance improves over time, I expect the graph based on calendar years following their respective trends. From the graph (un-tabulated), two variables (percentage of independent directors and percentage of institutional investors) show an improvement trend. Meanwhile, the rest of the governance variables do not show clear improvement trends.

Given that my sample period is based on 1990s, major regulatory reform, or corporate incidents that trigger firms to actively improve corporate governance are not present. Thus, firms generally would not pay much attention to seek governance improvement. Also, my corporate governance measure is based on dichotomized corporate governance variables. It is unlikely that firms change

their dichotomy over the event window. Thus, the trend in corporate governance, if any, is unlikely to bear significant impact towards the results reported.

Moreover, my study focuses on the cross-sectional variation of the change in corporate governance on pay-performance sensitivity of spinoff firms. Thus, the time-series trend of corporate governance does not play a major role in this association as the pay-performance sensitivity is measured based on change rather than levels. In sum, although I recognize there is a possibility that corporate governance improvement over time may bear confounding effect on my findings; the above rationale suggests that it is reasonable to assume that the results reported in this study are not largely influenced by governance improvement trend over time.

4.5 Summary and Conclusion

The study in this chapter examines the impact of corporate governance on both parent and spun-off firms towards their interest alignment from spinoff. Specifically, the impact of four aspects of corporate governance, including board structure, committee independence, board and committee meetings and ownership structure, along with the overall corporate governance, are examined in this study. Empirical results indicate that for parent firms, committee independence, ownership structure and the overall internal governance of spinoff parent firms are associated with the improvement in their pay-performance elasticity. The result is robust using both ROE and stock return as accounting and market based measure of shareholders' wealth. In addition, the change in committee independence and overall governance for the parent firms is positively associated with their post-spinoff lagged pay-performance elasticity. The result is also robust to both market and accounting based measure of shareholders' wealth. Taken together, the evidence from parent firms supports my hypotheses that (1) governance in spinoff firms fosters the parent firms' interest alignment after spinoff; (2) change in governance mechanisms from spinoff strengthen the interest alignment of parent firms' after spinoff. Alternatively stated, governance does matter towards enhancing the interest re-alignment of the parent firms. These

findings consistent with prior studies on agency explanation of spinoff value creation (e.g. Schipper et. al. (1983), Burch and Nanda (2003), Aron (1991), Ahn and Walker (2007) etc.)

Empirical findings for the spun-off firms indicate that three separate aspects of corporate governance (i.e. board structure, committee independence and ownership structure) and the overall internal governance as a whole are associated with the improvement in pay-performance elasticity. The result is consistent under both accounting and market based measure of shareholders' wealth. However, I do not find evidence that change in corporate governance influence the change in post spinoff pay-performance elasticity for spun-off firms. Despite the overall results for spun-off firms are comparatively weaker than the parent counterparts, evidence from spun-off firms still support my hypotheses that governance in spinoff firms fosters the spun-off firms' interest alignment after spinoff. Again, the results complement to the literature on agency explanation of spinoff value creation (e.g. Hite and Owers (1983), Aron (1991) etc.). A potential explanation of the relatively weaker results for the spun-off firms may due to its small sample size.

However, empirical evidence from both parent and spun-off firms do not support the conjecture that improvement of interest alignment for strong governance firms is more pronounced as compared to weak governance firms. In other words, spinoff improves the interest alignment for both weak and strong governance firms in a similar manner. Nevertheless, such result complements with the finding from Ahn and Walker (2007) that firms undertake spinoff are characterized by more effective governance as compared to the peer firms.

CHAPTER 5 – SUMMARY AND CONCLUSION

5.1 Conclusions

The purpose of this study is to document evidence supporting the hypothesis that spinoff improves the interest alignment of both the parent and the spun-off firms. I illustrate this by first analyzing the change in pay-performance sensitivity for the parent before and after spinoff, as well as the pre-spinoff parent and the spun-off firms. Using both market and accounting based measure of shareholder value, the results indicate that spinoff promotes a closer interest alignment for both the parents and spun-off firms after spinoff. However, I do not find evidence to support the conjecture that interest alignment for focus-increasing spinoffs is stronger than non focus-increasing spinoffs. Having said that, this finding is still consistent with prior study by Daley et al (1997), in which the authors find no evidence to support the incentive alignment explanation towards focus-increasing spinoffs value creation.

Next, I analyze the impact of corporate governance towards the interest alignment improvement from the spinoff transaction. Four areas of corporate governance mechanisms are examined in this study: board structure, committee independence, board activities and ownership structure. The findings suggest

that these governance mechanisms in both parent and spun-off firms play a significant role towards their corresponding improvement in interest alignment, proxy by both accounting based and market based pay-performance elasticity. Moreover, the change in committee independence and overall governance is associated with the interest alignment of the post-spinoff parent firms. Although I do not find any association between change in governance and the interest alignment for the spun-off firms, this is potentially driven by their small sample size.

Empirical evidence from both the parent and spun-off firms do not support the hypothesis that interest re-alignment for stronger governance spinoff firms is more pronounced as compared to the weaker governance counterparts. In other words, spinoff promotes similar interest alignment benefits to both weak and strong governance firms. From another perspective, it also suggests that strength of corporate governance of spinoff firms is not associated with the CEO compensation. Such observation is interesting as it is a departure from the conventional argument that stronger governance promotes better monitoring of the CEO compensation. Nonetheless, this result still support the contention from Ahn and Walker (2007), which indicate that firms with more effective governance choose to spinoff.

In sum, all the findings from this study broadly complement with extant literature which suggests that spinoffs create value by means of agency costs reduction (e.g. Gertner et al, (2002), Burch and Nanda (2003), Ahn and Walker (2007) etc.).

5.2 Limitations and Opportunities for Future Research

I acknowledge there are a number of limitations present in this study. To name a few major limitations, the small sample size for the corporate governance variables of spun-off firms may potentially affect the reliability of the results. Like any long horizon event studies, the results of this study are subject to survivorship bias. Also, in the absence of elaborated theories on the interactions of corporate governance mechanisms, I assume that all corporate governance mechanisms examined in my study are equally complementary to each other. In addition, I acknowledge that the corporate governance mechanisms included in this study are not exhaustive as I only considered the representative ones from the literature.

Despite the above limitations, the results from this study give rise to a number of unanswered questions. For instance, are the different aspects of agency costs reduction work in a complementary manner towards spinoff value

creation? Does the factors affecting agency cost reduction explanation and those affecting information asymmetry reduction explanation interact with each other towards the spinoff value creation? Further research work is needed to follow-up on these questions.

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TABLE 1 – SPINOFF SAMPLE PROFILE

Panel A – Selection Criteria for Spinoff Sample

Selection Criteria	Number of Observations
Initial spinoff transactions taken from the SDC database and subsequently confirmed by *Lexis-Nexis*	160
Less: Spinoff firms that are tracking stock	4
Less: Spinoffs motivated by takeover defenses, mergers, bankruptcies and regulatory issues	30
Less: Spinoffs with parents which are merged within 1 year after spinoff	15
Less: Spinoffs firms that are in regulated industries	17
Less: Spinoffs firms that are ADRs	2
Less: Sample without CEO compensation data	17
Less: Spinoffs firms which was previously an equity carve-out	4
Final Sample	***71***

Panel B – Distribution of Spinoff Sample by Year

Fiscal Year	Full Sample	Focus-Increasing Sample	Non focus-increasing Sample
1990	4	3	1
1991	2	1	1
1992	8	6	2
1993	7	6	1
1994	8	7	1
1995	11	7	4
1996	18	9	9
1997	13	7	6
Total	***71***	***46***	***25***

TABLE 2 – DESCRIPTIVE STATISTICS ON PERFORMANCE AND COMPENSATION OF SPINOFF FIRMS

Descriptive statistics of the CEO compensation components, performance variable and spinoff size for the spinoff sample from two years before spinoff to three years after spinoff. Year 0 denotes the year of spinoff event. The procedures in arriving the full sample is described in Table 1. Panel A shows the parent firm statistics and Panel B shows the spun-off firm statistics. The 4 components of CEO compensation: salary and bonus, option grants, restricted stocks, and other compensation are obtained from Execucomp database or company proxy statement in case the data is not available from Execucomp. CEO compensation is denoted in thousands of dollars. Stock return refers to the annual stock return for the firm's fiscal year and is computed by compounding the monthly returns obtained from CRSP database. Return on equity (ROE) is defined as income before extraordinary items available for common shareholders divided by total common shareholders' equity and is obtained from Compustat. Both stock returns and ROE are denoted in percentages. Spinoff size is defined as market value of the spun-off unit divided by the combined market value of the post-spinoff parent and spun-off firm. Variation in sample size is due to data availability.

PANEL A – PARENT FIRMS

	Year -2	*Year -1*	*Year 0*	*Year +1*	*Year +2*	*Year +3*
Salary and Bonus						
Mean	1180.10	1211.91	1219.30	1199.49	1264.95	1271.80
Median	1097.89	1069.08	1000.00	972.84	1148.51	1148.57
Minimum	141.66	104.80	36.36	74.00	74.00	119.88
Maximum	4109.90	4399.90	4030	4282.50	3725.00	4000
Std Dev	812.04	912.56	980.49	864.76	878.38	875.10
N	63	66	70	70	67	62
Stock Options						
Mean	591.21	1622.29	1441.80	2351.03	1935.02	2766.62
Median	19.90	312.73	177.51	578.03	541.40	743.79
Minimum	0	0	0	0	0	0
Maximum	3666.38	16068.52	38000.00	40000.00	16172.41	54189.00
Std Dev	925.23	3404.28	4666.90	6397.40	3143.47	7796.21
N	61	66	69	69	67	61
Restricted Stock						
Mean	117.65	201.65	219.52	281.50	358.29	429.15
Median	0	0	0	0	0	0
Minimum	0	0	0	0	0	0
Maximum	1750	9394.34	3849.5	10476.6	5520.04	11800
Std Dev	322.67	1174.88	728.62	1369.17	1055.43	1655.75
N	63	66	70	70	67	62
Other Compensation						
Mean	85.76	141.40	182.15	153.50	146.43	170.56
Median	21.39	30.68	40.40	39.56	57.42	42.76
Minimum	0	0	0	0	0	0
Maximum	826.33	1762.82	2188.43	2004.94	1925.19	1847.07
Std Dev	155.81	282.02	389.50	301.99	274.92	327.81
N	64	66	70	70	67	62

TABLE 2 – PANEL A (CONTINED)

	Year -2	*Year -1*	*Year 0*	*Year +1*	*Year +2*	*Year +3*
Stock Return						
Mean	0.221	0.208	0.261	0.262	0.123	0.123
Median	0.146	0.179	0.173	0.134	0.117	0.074
Minimum	-0.467	-0.719	-0.402	-0.715	-0.704	-0.787
Maximum	1.591	1.903	2.050	3.104	1.505	1.895
Std Dev	0.385	0.413	0.460	0.586	0.388	0.449
N	67	70	71	71	71	65
ROE						
Mean	0.146	0.028	0.134	0.151	0.152	0.127
Median	0.137	0.080	0.120	0.135	0.159	0.148
Minimum	-1.300	-2.320	-2.037	-0.453	-0.897	-1.059
Maximum	1.719	0.606	1.842	1.548	0.901	2.218
Std Dev	0.286	0.384	0.395	0.274	0.236	0.383
N	68	68	69	68	66	60

Spinoff Size	
Mean	0.309
Median	0.246
Minimum	0.032
Maximum	0.956
Std Dev	0.224
N	63

TABLE 2 (CONTINUED)

PANEL B – SPUN-OFF FIRMS

	Year +1	*Year +2*	*Year +3*
Salary & Bonus			
Mean	964.95	917.37	919.26
Median	695	729.48	726.36
Minimum	22.38	70	98.08
Maximum	6794.44	6062.50	3750
Std Dev	1138.59	961.28	655.80
N	49	46	46
Stock Options			
Mean	1130.41	909.13	1062.57
Median	344.48	323.75	526.62
Minimum	0	0	0
Maximum	11485.99	11109.6	9447.73
Std Dev	1988.31	1828.1	1768.64
N	44	42	45
Restricted Stock			
Mean	189.64	95.25	128.34
Median	0	0	0
Minimum	0	0	0
Maximum	2583.32	1123.43	2126.88
Std Dev	524.86	263.71	369.00
N	48	45	46
Other Compensation			
Mean	92.58	141.98	256.01
Median	34.63	51.74	49.91
Minimum	0	0	0
Maximum	769.55	1579.73	4144.72
Std Dev	151.87	285.53	686.41
N	49	46	46

TABLE 2 – PANEL B (CONTINUED)

	Year +1	*Year +2*	*Year +3*
Stock Return			
Mean	0.104	0.119	0.167
Median	0.086	0.079	0.005
Minimum	-0.625	-0.791	-0.679
Maximum	1.240	1.651	3.286
Std Dev	0.421	0.443	0.714
N	52	53	46
ROE			
Mean	0.019	0.105	0.185
Median	0.084	0.087	0.138
Minimum	-1.749	-0.877	-0.700
Maximum	1.828	2.512	1.854
Std Dev	0.486	0.492	0.388
N	55	49	43

TABLE 3 – YEARLY PAY-PERFORMANCE ELASTICITY REGRESSIONS: STOCK RETURN

This table report results on the yearly pay-performance elasticity regressions for the pre-spinoff parent and the parent and spun-off firm after spinoff using stock returns as a proxy for shareholders' wealth. The year of the spinoff event is denoted as Year 0. The event window for the parent firms span from Year -1 to Year +3 whereas the spun-off firms span from Year +1 to Year +3. Panel A and B shows the pay-performance elasticity regressions using total CEO compensation and CEO equity compensation to proxy for CEOs' wealth. Total CEO compensation is measured by the sum of salary and bonus, stock options, restricted stocks and other compensation. CEO equity compensation is the sum of stock options and restricted stocks. Stock return is the annual stock return for the firm's fiscal year and is computed by compounding the monthly returns obtained from *CRSP* database. *conRtn* is the variable for contemporaneous returns and *lagRtn* is the variable for lagged return. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

Panel A – Dependent Variable: Difference in Log of Total CEO Compensation

	Parent firms before and after spinoff					Spun-off firms after spinoff		
	Year -1	*Year 0*	*Year +1*	*Year +2*	*Year +3*	*Year +1*	*Year +2*	*Year +3*
Intercept (b1)	6.17***	4.50***	5.57***	6.43***	6.34***	5.82***	6.43***	6.60***
	(8.13)	(7.11)	(8.28)	(9.14)	(9.55)	(5.10)	(7.20)	(8.12)
conRtn (b2)	-1.28	0.39	0.52	2.37	1.08	2.55	2.88	-0.88
	(-0.81)	(0.36)	(0.57)	(1.29)	(0.77)	(0.84)	(1.45)	(-0.87)
lagRtn (b3)	-2.79*	0.73	1.19	1.84*	2.82	0.53	-3.27	2.73
	(-1.90)	(0.54)	(1.03)	(1.70)	(1.56)	(0.29)	(-1.35)	(1.42)
N	61	64	69	66	60	25	33	40
R2	0.060	0.006	0.018	0.055	0.048	0.032	0.096	0.086

Panel B – Dependent Variable: Difference in Log of Equity Compensation

	Parent firms before and after spinoff					Spun-off firms after spinoff		
	Year -1	*Year 0*	*Year +1*	*Year +2*	*Year +3*	*Year +1*	*Year +2*	*Year +3*
Intercept (b1)	6.19***	4.77***	5.59***	6.36***	6.35***	5.48***	6.12***	6.49***
	(8.38)	(7.20)	(8.15)	(9.30)	(9.54)	(5.35)	(7.11)	(8.41)
conRtn (b2)	-1.45	0.29	0.52	2.41	0.79	2.27	2.68	-0.92
	(-0.92)	(0.26)	(0.56)	(1.35)	(0.56)	(0.84)	(1.40)	(-0.94)
lagRtn (b3)	-3.02**	0.87	1.01	1.90*	2.66	0.84	-3.05	2.74
	(-2.08)	(0.71)	(0.85)	(1.79)	(1.47)	(0.48)	(-1.48)	(1.47)
N	63	68	69	67	60	28	35	42
R2	0.069	0.008	0.013	0.059	0.040	0.032	0.100	0.089

TABLE 4 – YEARLY PAY-PERFORMANCE ELASTICITY REGRESSIONS: ROE

This table report results on the yearly pay-performance elasticity regressions for the pre-spinoff parent and the parent and spun-off firm after spinoff with ROE as a measure of shreholders' wealth. The year of the spinoff event is denoted as Year 0. The event window for the parent firms span from Year -1 to Year +3 whereas the spun-off firms span from Year +1 to Year +3. Panel A and B shows the pay-performance elasticity regressions using total CEO compensation and CEO equity compensation to proxy for CEOs' wealth. Total CEO compensation is measured by the sum of salary and bonus, stock options, restricted stocks and other compensation. CEO equity compensation is the sum of stock options and restricted stocks. Return on equity (ROE) is defined as income before extraordinary items available for common shareholders divided by common shareholders' equity. Both data items are obtained from *Compustat* database. *conROE* is the variable for contemporaneous ROE and *lagROE* is the variable for lagged ROE. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

Panel A – Dependent Variable: Difference in Log of Total CEO Compensation

	Parent firms before and after spinoff					Spun-off firms after spinoff		
	Year -1	*Year 0*	*Year +1*	*Year +2*	*Year +3*	*Year +1*	*Year +2*	*Year +3*
Intercept (b1)	4.41***	4.60***	5.25***	6.20***	5.81***	6.72***	6.57***	5.88***
	(6.33)	(9.18)	(8.93)	(8.46)	(7.92)	(7.35)	(7.43)	(6.68)
conROE (b2)	-7.00**	0.39	4.60*	8.04**	2.06	-0.11	0.90	2.42
	(-2.03)	(0.33)	(1.65)	(2.26)	(1.10)	(-0.04)	(0.18)	(1.12)
lagROE (b3)	10.37**	0.23	-0.90	-3.08	4.95	0.54	2.10	2.41
	(1.97)	(0.19)	(-0.47)	(-0.95)	(1.44)	(0.32)	(0.57)	(1.06)
N	60	62	66	64	57	35	34	36
R2	0.069	0.002	0.060	0.087	0.130	0.004	0.069	0.095

Panel B – Dependent Variable: Difference in Log of Equity Compensation

	Parent firms before and after spinoff					Spun-off firms after spinoff		
	Year -1	*Year 0*	*Year +1*	*Year +2*	*Year +3*	*Year +1*	*Year +2*	*Year +3*
Intercept (b1)	4.88***	4.99***	5.29***	6.09***	5.72***	6.75***	6.04***	5.84***
	(7.22)	(9.55)	(8.77)	(8.55)	(7.73)	(8.22)	(7.35)	(7.14)
conROE (b2)	-0.82	0.34	4.24	7.83**	1.79	-0.13	4.12	2.18
	(-0.39)	(0.27)	(1.48)	(2.29)	(0.95)	(-0.06)	(1.12)	(1.06)
lagROE (b3)	2.14	0.54	-1.04	-2.54	5.31	0.39	-0.01	2.38
	(0.56)	(0.42)	(-0.52)	(-0.82)	(1.53)	(0.24)	(0.00)	(1.09)
N	63	65	66	65	57	39	36	38
R2	0.005	0.004	0.045	0.091	0.126	0.002	0.094	0.089

TABLE 5 – PANEL PAY-PERFORMANCE ELASTICITY REGRESSIONS FOR PRE & POST-SPINOFF PARENT FIRMS

This table report results on the yearly pay-performance elasticity regression for the pre and post-spinoff parent. Panel A shows the panel regression results combines one pre-spinoff year (Year -1) sample and one post-spinoff year (Year +1) sample. Panel B shows the panel regression estimation combines the same pre-spinoff sample with three post-spinoff years (Year +1 to Year +3) sample. Parents firms' sample is taken for both pre- and post-spinoff period. Both the log difference in total CEO compensation and CEO equity compensation are used as proxy for the dependent variable as indicated in the table. *SpD* is an indicator variable which takes a value of 0 before spinoff and 1 otherwise. *Spinsize* denotes spinoff size and is computed by dividing the market value of the spun-off firm with the combined market value of the post-spinoff parent and spun-off firm. All other variables are previously defined in Tables 3 and 4. In both panels, t-statistics, which are based on White standard errors robust to within firms' cluster correlation, are reported in parenthesis. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

Panel A - Pay Performance Elasticity Regression Results

	Performance in Stock Returns		Performance in ROE		Performance in both Returns & ROE	
	Dependent Variable: The difference in log		*Dependent Variable: The difference in log*		*Dependent Variable: The difference in log*	
	Equity Compensation	*Total Compensation*	*Equity Compensation*	*Total Compensation*	*Equity Compensation*	*Total Compensation*
Intercept (b1)	6.71***	6.70***	4.71***	4.73***	6.07***	6.01***
	(7.14)	(6.9)	(5.23)	(5.09)	(5.07)	(4.84)
conRtn (b2)	-2.20	-2.03			-1.85	-1.64
	(-1.45)	(-1.29)			(-1.12)	(-0.96)
lagRtn (b3)	-3.07**	-2.83*			-2.93**	-2.72*
	(-2.18)	(-1.96)			(-2.04)	(-1.88)
SpD x conRtn (b4)	2.49	2.31			1.78	1.61
	(1.33)	(1.22)			(0.84)	(0.75)
SpD x lagRtn (b5)	4.13**	4.11**			3.97*	3.96*
	(2.1)	(2.08)			(1.9)	(1.92)
conROE (b6)			-5.82**	-6.36**	-4.83	-5.60
			(-2.51)	(-2.43)	(-1.52)	(-1.49)
lagROE (b7)			8.14**	9.08**	6.51	7.83
			(2.03)	(2.01)	(1.21)	(1.24)
SpD x conROE (b8)			11.34***	12.20***	10.50***	11.59***
			(3.51)	(3.53)	(2.66)	(2.64)
SpD x lagROE (b9)			-9.89**	-10.67**	-8.55	-9.73
			(-2.4)	(-2.34)	(-1.6)	(-1.58)
SpD (b10)	-0.67	-0.65	0.78	0.78	-0.73	-0.70
	(-0.69)	(-0.67)	(1.03)	(0.99)	(-0.59)	(-0.56)
Spinsize (b11)	-1.22	-1.29	-0.48	-0.59	-0.87	-1.06
	(-0.73)	(-0.78)	(-0.28)	(-0.34)	(-0.48)	(-0.59)
N	117	115	115	113	114	112
R2	0.063	0.061	0.068	0.078	0.110	0.117

TABLE 5 (CONTINUED)

Panel B – Panel Pay-Performance Elasticity Results with Long Run Post Spinoff Sample

	Performance in Stock Returns		Performance in ROE		Performance in both Returns & ROE	
	Dependent Variable: The difference in log		*Dependent Variable: The difference in log*		*Dependent Variable: The difference in log*	
	Equity Compensation	*Total Compensation*	*Equity Compensation*	*Total Compensation*	*Equity Compensation*	*Total Compensation*
Intercept (b1)	6.87***	6.83***	4.82***	4.80***	6.09***	5.97***
	(7.11)	(6.86)	(5.04)	(4.86)	(5.16)	(4.89)
conRtn (b2)	-2.27	-2.08			-1.85	-1.63
	(-1.54)	(-1.36)			(-1.16)	(-0.98)
lagRtn (b3)	-3.05**	-2.82**			-2.93**	-2.72*
	(-2.2)	(-1.98)			(-2.08)	(-1.92)
SpD x conRtn (b4)	2.69	2.57			1.92	1.73
	(1.49)	(1.4)			(1.02)	(0.85)
SpD x lagRtn (b5)	4.41***	4.25**			3.89**	3.72**
	(2.62)	(2.46)			(2.28)	(2.16)
conROE (b6)			-5.80**	-6.34**	-4.82	-5.61
			(-2.54)	(-2.46)	(-1.55)	(-1.54)
lagROE (b7)			8.09**	9.04**	6.51	7.85
			(2.05)	(2.04)	(1.24)	(1.27)
SpD x conROE (b8)			9.21***	9.90***	7.88**	8.80**
			(3.24)	(3.18)	(2.26)	(2.19)
SpD x lagROE (b9)			-8.09*	-9.03**	-6.38	-7.68
			(-1.95)	(-1.97)	(-1.21)	(-1.25)
SpD (b10)	-0.04	0.02	1.66**	1.71**	0.21	0.35
	(-0.04)	(0.02)	(2.51)	(2.46)	(0.19)	(0.31)
Spinsize (b11)	-1.69	-1.68	-0.81	-0.83	-0.93	-0.95
	(-0.9)	(-0.89)	(-0.38)	(-0.38)	(-0.45)	(-0.45)
N	230	227	226	223	224	221
R2	0.063	0.062	0.073	0.078	0.097	0.100

TABLE 6 – PANEL PAY-PERFORMANCE ELASTICITY REGRESSIONS FOR PRE-SPINOFF PARENT & SPUN-OFF FIRMS

This table report results on the yearly pay-performance elasticity regression for the pre-spinoff parent and the spun-off firm. Panel A shows the panel regression results combines one pre-spinoff year (Year -1) sample and one post-spinoff year (Year +1) sample. Panel B shows the panel regression estimation combines the same pre-spinoff sample with three post-spinoff years (Year +1 to Year +3) sample. Pre-spinoff sample are taken from parent firms whereas the post-spinoff are taken from spun-off firms. Both the log difference in total CEO compensation and CEO equity compensation are used as proxy for the dependent variable as indicated in the table. *SpD* is an indicator variable which takes a value of 0 before spinoff and 1 otherwise. *Spinsize* denotes spinoff size and is computed by dividing the market value of the spun-off firm with the combined market value of the post-spinoff parent and spun-off firm. All other variables are previously defined in Tables 3 and 4. In both panels, t-statistics are reported in parenthesis. T-statistics computed based on White's standard errors and based on White standard errors robust to within firms' cluster correlation are reported in Panel A and B repectively. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

Panel A - Pay Performance Elasticity Regression Results

	Performance in Stock Returns		Performance in ROE		Performance in both Returns & ROE	
	Dependent Variable: The difference in log		*Dependent Variable: The difference in log*		*Dependent Variable: The difference in log*	
	Equity Compensation	*Total Compensation*	*Equity Compensation*	*Total Compensation*	*Equity Compensation*	*Total Compensation*
Intercept (b1)	7.04***	6.82***	5.56***	5.29***	6.51***	6.29***
	(6.88)	(6.36)	(6.25)	(5.68)	(5.52)	(5.05)
conRtn (b2)	-2.34	-2.08			-2.01	-1.74
	(-1.56)	(-1.33)			(-1.26)	(-1.05)
lagRtn (b3)	-3.03**	-2.82*			-2.88**	-2.69*
	(-2.1)	(-1.93)			(-1.97)	(-1.85)
SpD x conRtn (b4)	3.76	3.60			8.24***	8.35**
	(1.1)	(0.92)			(2.64)	(2.37)
SpD x lagRtn (b5)	4.00	3.54			10.03***	9.46***
	(1.4)	(1.25)			(5.08)	(4.49)
conROE (b6)			-5.66***	-6.23**	-4.73	-5.54
			(-2.54)	(-2.44)	(-1.55)	(-1.53)
lagROE (b7)			7.77**	8.81**	6.37	7.73
			(2.01)	(2.00)	(1.24)	(1.26)
SpD x conROE (b8)			5.24*	5.81*	-2.51	-1.82
			(1.73)	(1.72)	(-0.76)	(-0.47)
SpD x lagROE (b9)			-7.40*	-8.27*	1.49	0.13
			(-1.83)	(-1.8)	(0.27)	(0.02)
SpD (b10)	-0.72	-0.27	2.48**	2.51**	-0.99	-0.48
	(-0.55)	(-0.19)	(2.32)	(2.23)	(-0.63)	(-0.29)
Spinsize (b11)	-2.24	-1.67	-3.17*	-2.37	-2.21	-1.91
	(-1.1)	(-0.8)	(-1.67)	(-1.25)	(-1.23)	(-1.02)
N	81	77	92	87	77	73
R2	0.080	0.071	0.088	0.081	0.251	0.249

TABLE 6 (CONTINUED)

Panel B – Panel Pay-Performance Elasticity Results with Long-run Post Spinoff Sample

	Performance in Stock Returns		Performance in ROE		Performance in both Returns & ROE	
	Dependent Variable: The difference in log		*Dependent Variable: The difference in log*		*Dependent Variable: The difference in log*	
	Equity Compensation	*Total Compensation*	*Equity Compensation*	*Total Compensation*	*Equity Compensation*	*Total Compensation*
Intercept (b1)	6.73***	6.72***	5.33***	5.31***	6.30***	6.27***
	(6.73)	(6.49)	(5.67)	(5.38)	(5.09)	(4.84)
conRtn (b2)	-2.21	-2.04			-1.93	-1.73
	(-1.44)	(-1.28)			(-1.16)	(-1.0)
lagRtn (b3)	-3.07**	-2.83**			-2.90**	-2.69*
	(-2.2)	(-1.98)			(-2.05)	(-1.88)
SpD x conRtn (b4)	1.97	1.81			2.05	2.04
	(1.17)	(1.03)			(0.94)	(0.9)
SpD x lagRtn (b5)	3.23*	3.11			4.06**	4.40**
	(1.73)	(1.57)			(2.03)	(2.07)
conROE (b6)			-5.71***	-6.23**	-4.78	-5.54
			(-2.52)	(-2.42)	(-1.52)	(-1.49)
lagROE (b7)			7.87**	8.81**	6.44	7.74
			(2.01)	(1.98)	(1.21)	(1.23)
SpD x conROE (b8)			7.33***	7.34***	5.21	4.34
			(2.86)	(2.59)	(1.33)	(1.01)
SpD x lagROE (b9)			-7.00*	-7.56	-4.51	-4.62
			(-1.73)	(-1.66)	(-0.81)	(-0.71)
SpD (b10)	-0.15	0.14	1.73*	1.98**	0.07	0.46
	(-0.16)	(0.14)	(1.87)	(2.01)	(0.06)	(0.35)
Spinsize (b11)	-1.26	-1.34	-2.44	-2.40	-1.58	-1.85
	(-0.68)	(-0.72)	(-1.1)	(-1.06)	(-0.75)	(-0.85)
N	153	145	160	151	136	128
R2	0.044	0.047	0.075	0.081	0.098	0.114

TABLE 7 – FOCUS-INCEASING PANEL PAY-PERFORMANCE ELASTICITY REGRESSIONS

This table report results on the focus-increasing panel pay-performance elasticity regression for the pre- and post-spinoff parent. Panel A shows the panel regression results combines one pre-spinoff year (Year -1) sample and one post-spinoff year (Year +1) sample. Panel B shows the panel regression estimation combines the same pre-spinoff sample with three post-spinoff years (Year +1 to Year +3) sample. Parents firms' sample is employed for both pre- and post-spinoff period. A spinoff is considered focus-increasing when the spinoff parent SIC code is different from the pre spun-off unit at a two-digit level. The independent variable, *Focus*, is an indicator variable which takes a value of one for focus-increasing and zero otherwise. Other dependent, independent variables are previously defined in Table 3, 4 and 5. T-statistics, which are based on White standard errors robust to within firms' cluster correlation, are reported in parenthesis for both panels. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

Panel A – Focus-Increasing Panel Pay Performance Elasticity Regressions Results

	Performance in Stock Returns		Performance in ROE		Performance in both Returns & ROE	
	Dependent Variable: The difference in log		*Dependent Variable: The difference in log*		*Dependent Variable: The difference in log*	
	Equity Compensation	*Total Compensation*	*Equity Compensation*	*Equity Compensation*	*Equity Compensation*	*Equity Compensation*
Intercept (b1)	7.20***	7.07***	5.47***	5.31***	6.49***	6.27***
	(6.8)	(6.79)	(5.32)	(5.15)	(4.85)	(4.63)
conRtn (b2)	-2.06	-1.91			-1.71	-1.53
	(-1.32)	(-1.18)			(-1.00)	(-0.86)
lagRtn (b3)	-2.88**	-2.66*			-2.75*	-2.58*
	(-2.02)	(-1.8)			(-1.87)	(-1.73)
SpD x conRtn (b4)	1.04	1.04			0.15	0.02
	(0.5)	(0.49)			(0.06)	(0.01)
SpD x lagRtn (b5)	6.11***	6.03***			6.66**	6.55**
	(2.76)	(2.65)			(2.46)	(2.52)
Focus x SpD x conRtn (b6)	1.94*	1.71			2.77	2.81
	(1.68)	(1.49)			(1.49)	(1.57)
Focus x SpD x lagRtn (b7)	-2.92	-2.84			-3.86	-3.71
	(-1.4)	(-1.39)			(-1.65)	(-1.61)
conROE (b8)			-5.58**	-6.05**	-4.64	-5.34
			(-2.41)	(-2.28)	(-1.46)	(-1.41)
lagROE (b9)			8.14**	8.87*	6.48	7.58
			(2.00)	(1.92)	(1.19)	(1.18)
SpD x conROE (b10)			9.08*	10.48**	9.61	11.24**
			(1.88)	(2.07)	(1.94)	(2.08)
SpD x lagROE (b11)			-9.69*	-10.38*	-8.47	-9.52
			(-1.92)	(-1.9)	(-1.38)	(-1.37)
Focus x SpD x conROE (b12)			3.06	2.15	0.16	-0.85
			(0.69)	(0.48)	(0.03)	(-0.18)
Focus x SpD x lagROE (b13)			-0.81	-0.52	1.30	1.66
			(-0.23)	(-0.15)	(0.34)	(0.45)
Focus (b14)	-0.93	-0.73	-1.20	-0.91	-0.89	-0.62
	(-0.91)	(-0.72)	(-1.11)	(-0.86)	(-0.77)	(-0.55)
SpD (b15)	-0.50	-0.48	0.83	0.80	-0.65	-0.66
	(-0.5)	(-0.47)	(1.04)	(0.99)	(-0.50)	(-0.5)
Spinsize (b16)	-1.00	-1.12	-0.34	-0.47	-0.52	-0.69
	(-0.61)	(-0.69)	(-0.21)	(-0.27)	(-0.28)	(-0.37)
N	117	115	115	113	114	112
R2	0.099	0.092	0.083	0.087	0.160	0.162

TABLE 7 (CONTINUED)

Panel B – Focus-Increasing Panel Pay-Performance Elasticity Results with Long-run Post Spinoff Sample

	Performance in Stock Returns		Performance in ROE		Performance in both Returns & ROE	
	Dependent Variable: The difference in log		*Dependent Variable: The difference in log*		*Dependent Variable: The difference in log*	
	Equity Compensation	*Total Compensation*	*Equity Compensation*	*Equity Compensation*	*Equity Compensation*	*Equity Compensation*
Intercept (b1)	7.56***	7.46***	5.87***	5.80***	6.95***	6.79***
	(7.64)	(7.47)	(6.01)	(5.84)	(5.67)	(5.4)
conRtn (b2)	-2.05	-1.86			-1.70	-1.50
	(-1.36)	(-1.19)			(-1.04)	(-0.89)
lagRtn (b3)	-2.78**	-2.52*			-2.61*	-2.39*
	(-1.99)	(-1.74)			(-1.85)	(-1.68)
SpD x conRtn (b4)	1.62	1.65			1.19	1.20
	(0.74)	(0.73)			(0.49)	(0.48)
SpD x lagRtn (b5)	3.97**	3.67*			3.89*	3.63*
	(1.98)	(1.8)			(1.87)	(1.74)
Focus x SpD x conRtn (b6)	1.32	1.06			0.94	0.65
	(0.96)	(0.75)			(0.60)	(0.39)
Focus x SpD x lagRtn (b7)	0.16	0.33			-0.65	-0.49
	(0.11)	(0.22)			(-0.44)	(-0.31)
conROE (b8)			-5.48**	-5.83**	-4.49	-4.97
			(-2.41)	(-2.21)	(-1.47)	(-1.35)
lagROE (b9)			8.06**	8.67*	6.39	7.22
			(2.03)	(1.9)	(1.23)	(1.15)
SpD x conROE (b10)			2.93	3.87	2.17	3.19
			(0.79)	(0.96)	(0.51)	(0.66)
SpD x lagROE (b11)			-5.96	-6.80	-4.50	-5.59
			(-1.27)	(-1.33)	(-0.81)	(-0.87)
Focus x SpD x conROE (b12)			7.72**	7.15**	6.93**	6.42*
			(2.32)	(2.11)	(2.09)	(1.87)
Focus x SpD x lagROE (b13)			-3.21	-2.87	-2.53	-2.18
			(-1.0)	(-0.91)	(-0.88)	(-0.76)
Focus (b14)	0.08	0.16	1.81***	1.84***	-1.41*	-1.33
	(0.09)	(0.17)	(2.67)	(2.57)	(-1.39)	(-1.3)
SpD (b15)	-1.31	-1.29*	-1.53	-1.44	0.47	0.58
	(-1.35)	(-1.31)	(-1.56)	(-1.47)	(0.42)	(0.50)
Spinsize (b16)	-1.38	-1.36	-0.89	-0.89	-0.97	-0.99
	(-0.71)	(-0.69)	(-0.43)	(-0.42)	(-0.47)	(-0.46)
N	230	227	226	223	224	221
R2	0.079	0.076	0.103	0.104	0.126	0.124

TABLE 8 – HECKMAN TWO-STAGE LEAST SQUARE ESTIMATION

This table report results on the Heckman two-stage least square regressions. The first stage estimation employs the PROBIT regression by pooling the spinoff and the matched sample. An indicator variable, with 1 denotes the spinoff sample and 0 denotes the matched sample is used as the dependent variable. For independent variables, *ROA* defined as income before extraordinary items available for common shareholders divided by total assets. *Size* is measured by total assets. *Leverage* is defined as total debt divided by total shareholders' equity. *Investment level* is computed by dividing capital expenditures by total sales. *Tobin's Q* is defined as the market value of total assets divided by the book value of total assets, where the market value is computed by book value of total assets plus market value of common equity minus book value of common equity and deferred taxes. Standard deviation of returns is the standard deviation of one year monthly stock returns. All variables for the first-stage regression are measured at Year -1 in order to represent the parent firm fundamentals before spinoff and the data are obtained from *Compustat* or *CRSP* database. The second stage panel regression estimation employs the parent sample for the pre- and post-spinoff period. The pre-spinoff period is Year -1 whereas the post-spinoff period is Year +1 to Year +3. The dependent variable for the second stage is total equity compensation and total CEO compensation as noted in the table. The *lambda* computed from the first stage regression is included in the second stage. Other independent variables are previously defined. Panel A display the results for the first stage PROBIT regression and Panel B display the results for the second stage panel pay-performance elasticity regression, t-statistics, which are based on White standard errors robust to within firms' cluster correlation, are reported in parenthesis. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

Panel A – First Stage PROBIT Regression Results

	Coefficient	*z-statistic*	*P > |z|*
Intercept	0.246	0.138	0.710
ROA	1.912	0.838	0.360
Leverage	0.818	0.973	0.324
Size	-0.089	1.454	0.228
Investment Level	-0.577	1.716	0.190
Tobin's Q	-0.032	0.205	0.651
ROA_{t-2}	-3.863	2.954	0.086*
ROA_{t-3}	1.266	0.496	0.481
Std Dev of ROA	1.078	0.093	0.761
Number of Segments	0.188	3.627	0.057*
Std Deviation of Returns	1.387	0.016	0.898
N			117
Wald Statistic			10.679

TABLE 8 (CONTINUED)

Panel B – Second Stage Panel Pay-Performance Elasticity Regressions

	Performance in Stock Returns *Dependent Variable: The difference in log*		Performance in ROE *Dependent Variable: The difference in log*		Performance Combined *Dependent Variable: The difference in log*	
	Equity Compensation	*Total Compensation*	*Equity Compensation*	*Total Compensation*	*Equity Compensation*	*Total Compensation*
Intercept (b1)	7.01***	6.98***	4.59**	4.55*	5.67**	5.51**
	(3.74)	(3.66)	(2.01)	(1.93)	(2.35)	(2.24)
conRtn (b2)	-2.30	-2.13			-2.14	-1.97
	(-1.45)	(-1.29)			(-1.29)	(-1.15)
lagRtn (b3)	-2.63*	-2.43			-2.67*	-2.53
	(-1.7)	(-1.52)			(-1.7)	(-1.59)
SpD x conRtn (b4)	3.12*	2.99			2.86	2.71
	(1.7)	(1.59)			(1.39)	(1.3)
SpD x lagRtn (b5)	3.93**	3.81**			3.67*	3.59*
	(2.1)	(1.97)			(1.93)	(1.87)
conROE (b6)			-5.17*	-5.47	-4.21	-4.85
			(-1.79)	(-1.47)	(-1.27)	(-1.16)
lagROE (b7)			6.48	7.03	4.86	5.95
			(1.33)	(1.11)	(0.89)	(0.86)
SpD x conROE (b8)			8.30**	8.74**	6.65*	7.40
			(2.38)	(2.04)	(1.72)	(1.57)
SpD x lagROE (b9)			-6.33	-6.81	-4.02	-5.02
			(-1.28)	(-1.08)	(-0.73)	(-0.73)
SpD (b10)	0.34	0.38	1.82***	1.82**	0.16	0.22
	(0.35)	(0.37)	(2.64)	(2.45)	(0.13)	(0.17)
Spinsize (b11)	-1.72	-1.71	-0.79	-0.80	-0.91	-0.91
	(-0.91)	(-0.9)	(-0.36)	(-0.36)	(-0.42)	(-0.41)
Lambda (b12)	-0.60	-0.58	0.26	0.38	0.70	0.84
	(-0.26)	(-0.25)	(0.09)	(0.13)	(0.25)	(0.3)
N	203	200	201	198	200	197
R2	0.075	0.074	0.081	0.085	0.105	0.109

TABLE 9 - DESCRIPTIVE STATISTICS ON GOVERNANCE VARIABLES OF SPINOFF FIRMS

Descriptive statistics of the governance variables of spinoff firms from two years before spinoff to three years after spinoff. Year 0 denotes the year of spinoff event. Panel A shows the parent firm statistics and Panel B shows the spun-off firm statistics. Percentage of independent directors (directors who do not have business and family ties with the firm and have not been employed in the firm for the last 3 years), percentage of interlocked directors (outside directors with their companies' boards served by an inside officer of the firm), percentage of gray directors (directors who received extra pay in addition to their board pay), percentage of female directors, percentage of busy directors (directors who concurrently serve in three or more boards) are expressed as a fraction of total board members. CEO chair duality is an indicator variable which takes a value of one if the CEO is also the chairman of the board and 0 otherwise. Percentage of independent directors in audit, compensation and nominating are expressed as a fraction of the total committee members. Board meetings, audit committee meetings, compensation committee meetings, nominating committee meetings are the number of annual meetings in the board and corresponding committees. CEO share ownership, directors share ownership and institutional investors ownership are all expressed as a fraction of total shares outstanding. Institutional investors' share ownership is obtained from *Thomson Reuters Institutional (13F) Holdings* (formerly known as *CDA/Spectrum* database). All other governance variables are obtained from the *RiskMetrics Directors* database (formerly known as *Investor Responsibility Research Center (IRRC) Takeover Defense* database) or directly from the proxy statements in the *Direct Edger* database. Variation in sample size is due to data availability.

PANEL A – PARENT FIRMS

Group 1 – Board Structure

	Year -2	*Year -1*	*Year 0*	*Year +1*	*Year +2*	*Year +3*
Percentage of Independent Directors						
Mean	0.575	0.609	0.612	0.619	0.631	0.630
Median	0.615	0.667	0.667	0.667	0.667	0.667
Minimum	0	0.143	0.143	0	0.111	0.111
Maximum	0.909	0.923	0.941	0.909	0.917	0.889
Std Dev	0.214	0.187	0.185	0.196	0.199	0.185
N	51	55	59	61	60	55
Percentage of Interlocked Directors						
Mean	0.042	0.030	0.026	0.026	0.028	0.026
Median	0	0	0	0	0	0
Minimum	0	0	0	0	0	0
Maximum	0.333	0.2	0.231	0.308	0.308	0.333
Std Dev	0.072	0.054	0.054	0.057	0.065	0.066
N	51	55	58	61	60	55
Percentage of Female Directors						
Mean	0.076	0.082	0.078	0.078	0.084	0.093
Median	0.083	0.083	0.083	0.083	0.083	0.091
Minimum	0	0	0	0	0	0
Maximum	0.300	0.231	0.250	0.273	0.300	0.273
Std Dev	0.076	0.068	0.071	0.068	0.071	0.072
N	51	55	59	61	60	55
Percentage of Gray Directors						
Mean	0.062	0.072	0.065	0.073	0.055	0.061
Median	0	0	0	0	0	0
Minimum	0	0	0	0	0	0
Maximum	0.429	0.429	0.538	0.714	0.545	0.538
Std Dev	0.091	0.104	0.102	0.137	0.097	0.103
N	51	55	59	61	60	55

Group 2 – Committee Independence

	Year -2	*Year -1*	*Year 0*	*Year +1*	*Year +2*	*Year +3*
Percentage of Independent Directors in Audit Committee						
Mean	0.818	0.824	0.855	0.842	0.875	0.860
Median	1	1	1	1	1	1
Minimum	0	0	0.333	0	0	0
Maximum	1	1	1	1	1	1
Std Dev	0.239	0.233	0.191	0.249	0.241	0.248
N	50	54	57	61	59	53
Percentage of Independent Directors in Compensation Committee						
Mean	0.803	0.825	0.848	0.848	0.867	0.898
Median	0.85	1	1	1	1	1
Minimum	0	0	0	0	0	0.333
Maximum	1	1	1	1	1	1
Std Dev	0.242	0.273	0.269	0.269	0.262	0.187
N	50	52	54	60	58	52
Percentage of Independent Directors in Nominating Committee						
Mean	0.745	0.743	0.751	0.797	0.770	0.743
Median	0.800	0.75	0.775	0.800	0.833	0.833
Minimum	0	0	0	0	0	0
Maximum	1	1	1	1	1	1
Std Dev	0.283	0.295	0.279	0.246	0.281	0.308
N	40	42	44	47	50	44

Group 3 – Board Activities

	Year -2	*Year -1*	*Year 0*	*Year +1*	*Year +2*	*Year +3*
Board Meetings						
Mean	7.647	7.375	8.288	7.017	7.019	7.212
Median	8	7	8	7	6	6
Minimum	1	1	3	3	4	4
Maximum	16	15	18	12	12	18
Std Dev	2.644	2.721	2.871	1.996	2.108	2.436
N	51	56	59	58	53	52

Group 4 – Ownership Structure

	Year -2	*Year -1*	*Year 0*	*Year +1*	*Year +2*	*Year +3*
Institutional Investors' Ownership						
Mean	0.513	0.535	0.547	0.573	0.587	0.588
Median	0.537	0.566	0.571	0.596	0.633	0.639
Minimum	0.104	0.100	0.076	0.075	0.084	0.057
Maximum	0.791	0.935	1.000	0.961	0.846	0.827
Std Dev	0.163	0.179	0.187	0.181	0.172	0.187
N	61	61	63	63	60	56

PANEL B – SPUN-OFF FIRMS

Group 1 – Board Structure

	Year +1	*Year +2*	*Year +3*
Percentage of Independent Directors			
Mean	0.662	0.657	0.684
Median	0.667	0.667	0.683
Minimum	0.2	0	0.2
Maximum	0.9	0.909	0.9
Std Dev	0.187	0.209	0.173
N	31	40	38
Percentage of Interlocked Directors			
Mean	0.008	0.012	0.016
Median	0	0	0
Minimum	0	0	0
Maximum	0.167	0.167	0.375
Std Dev	0.033	0.039	0.065
N	31	40	38
Percentage of Female Directors			
Mean	0.064	0.074	0.083
Median	0	0.067	0.1
Minimum	0	0	0
Maximum	0.25	0.333	0.3
Std Dev	0.079	0.086	0.087
N	29	35	32
Percentage of Gray Directors			
Mean	0.017	0.024	0.015
Median	0	0	0
Minimum	0	0	0
Maximum	0.158	0.267	0.286
Std Dev	0.046	0.063	0.064
N	30	40	36

Group 2 – Committee Independence

	Year +1	*Year +2*	*Year +3*
Percentage of Independent Directors in Audit Committee			
Mean	0.891	0.873	0.940
Median	1	1	1
Minimum	0.4	0	0
Maximum	1	1	2
Std Dev	0.187	0.243	0.356
N	29	35	34
Percentage of Independent Directors in Compensation Committee			
Mean	0.862	0.863	0.909
Median	1	1	1
Minimum	0.2	0	0.2
Maximum	1	1	1
Std Dev	0.233	0.260	0.200
N	29	35	34
Percentage of Independent Directors in Nominating Committee			
Mean	0.829	0.844	0.863
Median	1	1	1
Minimum	0.2	0.333	0.333
Maximum	1	1	1
Std Dev	0.299	0.243	0.204
N	15	21	22

Group 3 – Board Activities

	Year +1	*Year +2*	*Year +3*
Board Meetings			
Mean	6.556	6.719	6.656
Median	6	6	6
Minimum	3	3	3
Maximum	12	12	13
Std Dev	2.090	2.020	2.418
N	36	32	32

Group 4 – Ownership Structure

	Year +1	*Year +2*	*Year +3*
Institutional Investors' Ownership			
Mean	0.551	0.544	0.545
Median	0.562	0.571	0.581
Minimum	0.015	0.059	0.035
Maximum	0.969	0.896	1
Std Dev	0.185	0.169	0.197
N	61	56	51

TABLE 10 – CORPORATE GOVERNANCE & PAY-PERFORMNACE ELASTICITY REGRESSIONS FOR PARENTS FIRMS: STOCK RETURN

This table report the coefficients on the panel pay-performance elasticity regression interacted with a composite corporate governance score, *DCG*, for the pre-spinoff parent in Year -1 and the post-spinoff parent firms from Year +1 to Year +3. The dependent variable for all regressions is the first difference in the log of total CEO compensation. Shareholders wealth is measured by stock return. *DCG* is the sum of the dichotomized corporate governance variable in each of the 4 different dimensions of corporate governance: board structure (group 1), committee independence (group 2), board activities (group 3) and ownership structure (group 4). Group total is the sum of all *DCG* composite score in all 4 dimensions. A higher value *DCG* denotes stronger governance. Industry dummies are indicator variables denote the industry of sample firms in 4-digit SIC codes. Other variables are previously defined. The t-statistics, which are based on White standard errors robust to within firms' cluster correlation, are reported in parenthesis. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

	Dependent Variable: Difference in Log of Total Compensation				
	Group 1 Board Structure	*Group 2 Committee Independence*	*Group 3 Board Activities*	*Group 4 Ownership Structure*	*Group Total*
Intercept (b1)	7.65***	8.93***	8.43***	6.95***	6.11***
	(3.32)	(4.31)	(4.15)	(3.06)	(2.53)
conRtn (b2)	-0.97	-1.41	-2.15	-1.36	-1.41
	(-0.64)	(-1.03)	(-1.41)	(-0.86)	(-0.97)
lagRtn (b3)	-2.86*	-3.09**	-2.24*	-2.20	-1.88
	(-1.94)	(-2.49)	(-1.66)	(-1.53)	(-1.36)
SpD x conRtn (b4)	0.24	2.41	3.12	1.85	3.02
	(0.1)	(1.37)	(1.63)	(0.86)	(1.12)
SpD x lagRtn (b5)	3.99*	4.98***	3.92**	3.81**	4.89**
	(1.87)	(3.07)	(2.06)	(2.01)	(2.1)
DCG (b6)	0.46	3.17***	1.64	1.86**	0.96***
	(1.09)	(3.68)	(1.64)	(2.09)	(3.25)
SpD (b7)	-0.88	-1.38	-0.98	-0.47	-1.06
	(-0.86)	(-1.31)	(-0.86)	(-0.44)	(-0.91)
SpD x conRtn x DCG (b8)	0.76	-1.30	-2.04	-0.75	-0.30
	(0.95)	(-0.75)	(-1.1)	(-0.62)	(-0.47)
SpD x lagRtn x DCG (b9)	-0.06	-2.64*	-1.14	-1.34	-0.60
	(-0.07)	(-1.88)	(-0.57)	(-0.84)	(-1.01)
Spinsize (b10)	-0.54	-0.96	-1.35	-0.59	-0.17
	(-0.29)	(-0.68)	(-0.71)	(-0.35)	(-0.1)
Industry Dummies	Included	Included	Included	Included	Included
Year Dummies	Included	Included	Included	Included	Included
N	218	214	203	218	195
R2	0.174	0.231	0.159	0.170	0.209

TABLE 11 – CORPORATE GOVERNANCE & PAY-PERFORMNACE ELASTICITY REGRESSIONS FOR PARENTS FIRMS: ROE

This table report the coefficients on the panel pay-performance elasticity regression interacted with a composite corporate governance score, *DCG*, for the pre-spinoff parent in Year -1 and the post-spinoff parent firms from Year +1 to Year +3. The dependent variable for all regressions is the first difference in the log of total CEO compensation. Shareholders wealth is measured by ROE. *DCG* is the sum of the dichotomized corporate governance variable in each of the 4 different dimensions of corporate governance: board structure (group 1), committee independence (group 2), board activities (group 3) and ownership structure (group 4). Group total is the sum of all *DCG* composite score in all 4 dimensions. A higher value *DCG* denotes stronger governance. Industry dummies are indicator variables denote the industry of sample firms in 4-digit SIC codes. Other variables are previously defined. The t-statistics, which are based on White standard errors robust to within firms' cluster correlation, are reported in parenthesis. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

	Dependent Variable: Difference in Log of Total Compensation				
	Group 1 Board Structure	*Group 2 Committee Independence*	*Group 3 Board Activities*	*Group 4 Ownership Structure*	*Group Total*
Intercept (b1)	5.70**	7.60***	7.25***	5.93**	5.40**
	(2.45)	(3.52)	(3.15)	(2.52)	(2.26)
conROE (b2)	-8.73**	-7.56*	-4.72*	-5.61**	-5.26*
	(-2.93)	(-2.44)	(-1.82)	(-2.16)	(-1.72)
lagROE (b3)	13.78***	12.30*	7.86*	9.52**	8.21
	(2.55)	(2.26)	(1.78)	(2.11)	(1.52)
SpD x conROE (b4)	13.30***	11.53***	10.55***	7.69**	11.10*
	(2.68)	(2.96)	(3.63)	(2.24)	(1.97)
SpD x lagROE (b5)	-17.99***	-14.67***	-9.60**	-6.20	-11.76*
	(-2.47)	(-2.65)	(-2.15)	(-1.23)	(-1.88)
DCG (b6)	0.38	1.77**	1.32	1.44*	0.79***
	(0.83)	(2.2)	(1.59)	(1.67)	(2.61)
SpD (b7)	1.25	0.70	0.13	0.75	0.42
	(1.45)	(0.83)	(0.15)	(0.92)	(0.49)
SpD x conROE x DCG (b8)	-0.22	-0.38	1.68	3.19	-0.29
	(-0.13)	(-0.13)	(0.36)	(0.98)	(-0.26)
SpD x lagROE x DCG (b9)	1.50	3.38	1.11	-4.72	0.55
	(0.66)	(1.21)	(0.33)	(-1.41)	(0.54)
Spinsize (b10)	0.14	-0.26	-0.58	0.10	0.56
	(0.07)	(-0.15)	(-0.29)	(0.05)	(0.28)
Industry Dummies	Included	Included	Included	Included	Included
Year Dummies	Included	Included	Included	Included	Included
N	213	209	199	214	190
R2	0.215	0.262	0.215	0.219	0.253

TABLE 12 – CHANGE IN GOVARNANCE & POST SPINOFF PAY-PERFORMANCE ELASTICITY REGRESSIONS FOR PARENT FIRMS: STOCK RETURN

This table report the coefficients on the post-spinoff pay-performance elasticity regression interacted with the change in composite corporate governance score, Δ*DCG*, for the post-spinoff parent firms from Year +1 to Year +3. The dependent variable for all regressions is the first difference in the log of total CEO compensation. Shareholders wealth is measured by stock return. Δ*DCG* is the change in the average DCG score of parent firms for two years before spinoff and three years after spinoff in each of the 4 different dimensions of corporate governance: board structure (group 1), committee independence (group 2), board activities (group 3) and ownership structure (group 4). Group total denotes the sum of all ΔDCG composite score in all 4 dimensions. A higher value Δ*DCG* denotes governance improvement. Other variables are previously defined. The t-statistics, which are based on White standard errors robust to within firms' cluster correlation, are reported in parenthesis. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

	Dependent Variable: Difference in Log of Total Compensation				
	Group 1 Board Structure	*Group 2 Committee Independence*	*Group 3 Board Activities*	*Group 4 Ownership Structure*	*Group Total*
Intercept (b1)	6.56***	7.71***	6.87***	7.41***	7.91***
	(4.02)	(6.89)	(5.95)	(7.25)	(4.63)
conRtn (b2)	-0.02	-0.75	-0.67	-1.76*	-1.77
	(-0.01)	(-0.51)	(-0.55)	(-1.88)	(-1.11)
lagRtn (b3)	-0.15	-0.69	1.24	-0.53	-1.95
	(-0.13)	(-0.79)	(0.95)	(-0.57)	(-1.47)
Δ*DCG (b4)*	0.21	-0.74	0.23	-0.98	-0.27
	(0.26)	(-1.45)	(0.18)	(-0.94)	(-0.72)
conRtn x ΔDCG (b5)	0.07	1.03	1.58	4.14***	0.56
	(0.07)	(1.13)	(0.87)	(2.63)	(1.5)
lagRtn x ΔDCG (b6)	1.36	2.26***	-1.93	2.45*	1.13**
	(1.29)	(2.72)	(-1.11)	(1.69)	(2.38)
Spinsize (b7)	-1.17	-1.07	-0.78	-1.65	-1.15
	(-0.47)	(-0.53)	(-0.32)	(-0.72)	(-0.49)
N	151	151	155	163	144
R2	0.028	0.057	0.022	0.051	0.049

TABLE 13 – CHANGE IN GOVARNANCE & POST SPINOFF PAY-PERFORMANCE ELASTICITY REGRESSIONS FOR PARENT FIRMS: ROE

This table report the coefficients on the post-spinoff pay-performance elasticity regression interacted with the change in composite corporate governance score, Δ*DCG*, for the post-spinoff parent firms from Year +1 to Year +3. The dependent variable for all regressions is the first difference in the log of total CEO compensation. Shareholders wealth is measured by ROE. Δ*DCG* is the change in the average DCG score of parent firms for two years before spinoff and three years after spinoff in each of the 4 different dimensions of corporate governance: board structure (group 1), committee independence (group 2), board activities (group 3) and ownership structure (group 4). Group total denotes the sum of all ΔDCG composite score in all 4 dimensions. A higher value Δ*DCG* denotes governance improvement. Other variables are previously defined. The t-statistics, which are based on White standard errors robust to within firms' cluster correlation, are reported in parenthesis. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

	Dependent Variable: Difference in Log of Total Compensation				
	Group 1 Board Structure	*Group 2 Committee Independence*	*Group 3 Board Activities*	*Group 4 Ownership Structure*	*Group Total*
Intercept (b1)	6.85***	7.34***	6.83***	6.88***	8.13***
	(3.88)	(6.33)	(6.55)	(5.45)	(4.71)
conROE (b2)	5.63	5.32*	0.34	-1.01	4.24
	(1.3)	(1.67)	(0.1)	(-0.32)	(1.06)
lagROE (b3)	-5.54	-5.47	1.59	1.29	-6.54
	(-1.14)	(-1.61)	(0.46)	(0.56)	(-1.42)
ΔDCG (b4)	-0.32	-0.88	-0.80	-0.76	-0.44*
	(-0.36)	(-1.47)	(-0.74)	(-0.69)	(-1.16)
conROE x ΔDCG (b5)	-2.62	-2.24	3.10	3.64	-0.63
	(-1.0)	(-1.17)	(0.91)	(0.99)	(-0.74)
lagROE x ΔDCG (b6)	5.15*	5.30**	0.16	2.10	2.10*
	(1.71)	(2.47)	(0.04)	(0.74)	(1.9)
Spinsize (b7)	-0.65	-0.53	-0.68	-1.44	-0.96
	(-0.24)	(-0.22)	(-0.25)	(-0.53)	(-0.36)
N	149	149	152	160	142
R2	0.081	0.104	0.066	0.088	0.093

TABLE 14 – CORPORATE GOVERNANCE & PAY-PERFORMNACE ELASTICITY REGRESSIONS FOR SPUN-OFF FIRMS: STOCK RETURN

This table report the coefficients on the panel pay-performance elasticity regression interacted with a composite corporate governance score, *DCG*, for the pre-spinoff parent in Year -1 and the spun-off firms from Years +1 to Year +3. The dependent variable for all regressions is the first difference in the log of total CEO compensation. Shareholders wealth is measured by stock return. *DCG* is defined in Table 10. A higher value *DCG* denotes stronger governance. Industry dummies are indicator variables denote the industry of sample firms in 4-digit SIC codes. Other variables are previously defined. The t-statistics, which are based on White standard errors robust to within firms' cluster correlation, are reported in parenthesis. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

	Dependent Variable: Difference in Log of Total Compensation				
	Group 1 Board Structure	*Group 2 Committee Independence*	*Group 3 Board Activities*	*Group 4 Ownership Structure*	*Group Total*
Intercept (b1)	2.47	3.55	4.24	5.99*	1.46
	(0.94)	(1.06)	(1.43)	(1.79)	(0.46)
conRtn (b2)	-1.90	-2.00	-3.36*	-2.30	-2.62
	(-1.04)	(-1.24)	(-1.74)	(-1.15)	(-1.42)
lagRtn (b3)	-3.21	-3.19**	-3.25*	-3.88**	-2.98
	(-2.08)	(-2.01)	(-1.8)	(-1.98)	(-1.53)
SpD x conRtn (b4)	1.62	1.02	2.45	2.01	-0.22
	(0.62)	(0.55)	(1.17)	(0.95)	(-0.08)
SpD x lagRtn (b5)	5.49**	2.35	4.30*	5.03	5.64*
	(2.11)	(0.76)	(1.72)	(1.65)	(1.73)
DCG (b6)	1.35***	1.38***	1.24	1.72*	1.26***
	(2.90)	(3.81)	(1.35)	(1.91)	(4.81)
SpD (b7)	1.17	0.66	1.29	-0.41	1.51
	(0.49)	(0.20)	(0.47)	(-0.12)	(0.5)
SpD x conRtn x DCG (b8)	0.16	0.94	0.78	1.22	1.24
	(0.11)	(0.89)	(0.63)	(0.61)	(1.15)
SpD x lagRtn x DCG (b9)	-1.42	0.15	-3.21	-1.14	-1.05
	(-1.28)	(0.12)	(-1.38)	(-0.37)	(-1.09)
Spinsize (b10)	-0.75	-1.51	-2.58	-1.62	-0.47
	(-0.34)	(-0.68)	(-1.5)	(-0.83)	(-0.28)
Industry Dummies	Included	Included	Included	Included	Included
Year Dummies	Included	Included	Included	Included	Included
N	119	111	108	145	97
R2	0.206	0.253	0.195	0.128	0.325

TABLE 15 – CORPORATE GOVERNANCE & PAY-PERFORMNACE ELASTICITY REGRESSIONS FOR SPUN-OFF FIRMS: ROE

This table report the coefficients on the panel pay-performance elasticity regression interacted with a composite corporate governance score, *DCG*, for the pre-spinoff parent in Year -1 and the spun-off firms from Years +1 to Year +3. The dependent variable for all regressions is the first difference in the log of total CEO compensation. Shareholders wealth is measured by ROE. *DCG* is defined in Table 11. A higher value *DCG* denotes stronger governance. Industry dummies are indicator variables denote the industry of sample firms in 4-digit SIC codes. Other variables are previously defined. The t-statistics, which are based on White standard errors robust to within firms' cluster correlation, are reported in parenthesis. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

	Dependent Variable: Difference in Log of Total Compensation				
	Group 1 Board Structure	*Group 2 Committee Independence*	*Group 3 Board Activities*	*Group 4 Ownership Structure*	*Group Total*
Intercept (b1)	1.50	3.85	4.33	5.58	0.82
	(0.53)	(1.06)	(1.25)	(1.44)	(0.22)
conROE (b2)	-10.70***	-11.67***	-6.22**	-4.81	-7.00
	(-3.05)	(-3.26)	(-2.32)	(-1.61)	(-1.61)
lagROE (b3)	14.88**	17.32***	9.14**	8.26*	9.47
	(2.62)	(3.06)	(2.06)	(1.76)	(1.35)
SpD x conROE (b4)	17.22**	-16.04*	7.53**	3.34	4.37
	(2.84)	(-1.72)	(2.41)	(0.92)	(0.4)
SpD x lagROE (b5)	-16.51**	7.75	-8.14*	-4.15	-8.26
	(-2.79)	(0.9)	(-1.72)	(-0.83)	(-0.68)
DCG (b6)	1.41***	1.18***	1.94**	2.56***	1.44***
	(2.56)	(3.03)	(2.11)	(2.53)	(4.58)
SpD (b7)	3.02	1.80	1.16	-0.19	1.71
	(1.14)	(0.51)	(0.35)	(-0.05)	(0.48)
SpD x conROE x DCG (b8)	-5.19	14.07***	-2.49	3.73	1.63
	(-1.22)	(3.82)	(-0.87)	(1.02)	(0.32)
SpD x lagROE x DCG (b9)	2.96	-12.32***	0.14	-4.37***	-0.40
	(1.1)	(-4.12)	(0.06)	(-2.49)	(-0.08)
Spinsize (b10)	-2.73	-4.56*	-3.22	-1.16	-0.86
	(-1.12)	(-1.67)	(-1.45)	(-0.49)	(-0.35)
Industry Dummies	Included	Included	Included	Included	Included
Year Dummies	Included	Included	Included	Included	Included
N	120	112	113	149	96
R2	0.243	0.342	0.188	0.194	0.361

TABLE 16 – CHANGE IN GOVARNANCE & POST SPINOFF PAY-PERFORMANCE ELASTICITY REGRESSIONS FOR SPUN-OFF FIRMS: STOCK RETURN

This table report the coefficients on the post-spinoff pay-performance elasticity regression interacted with the change in composite corporate governance score, Δ*DCG*, for the spun-off firms from Year +1 to Year +3. The dependent variable for all regressions is the first difference in the log of total CEO compensation. Shareholders wealth is measured by stock return. Δ*DCG* is the change in the average DCG score of parent firms for two years before spinoff and spun-off firms for three years after spinoff in each of the 4 different dimensions of corporate governance: board structure (group 1), committee independence (group 2), board and committee activities (group 3) and ownership structure (group 4). Group total denotes the sum of all ΔDCG composite score in all 4 dimensions. A higher value Δ*DCG* denotes governance improvement. Other variables are previously defined. Panel A reports the regression results with t-statistics are reported in parenthesis. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

	Dependent Variable: Difference in Log of Total Compensation				
	Group 1 Board Structure	*Group 2 Committee Independence*	*Group 3 Board Activities*	*Group 4 Ownership Structure*	*Group Total*
Intercept (b1)	5.05***	7.49***	7.66***	6.04***	6.03***
	(3.08)	(6.13)	(6.33)	(6.12)	(3.11)
conRtn (b2)	-0.95	1.54	-1.45	-0.20	-0.70
	(-0.52)	(0.73)	(-1.27)	(-0.29)	(-0.23)
lagRtn (b3)	1.86	0.01	0.19	-0.63	-1.13
	(0.85)	(0.00)	(0.1)	(-0.39)	(-0.29)
Δ*DCG (b4)*	1.05	-0.82	-2.07*	1.53	0.31
	(1.39)	(-0.88)	(-1.95)	(1.3)	(0.55)
conRtn x ΔDCG (b5)	0.57	-1.04	1.61	-0.66	0.05
	(0.41)	(-0.93)	(1.09)	(-0.39)	(0.07)
lagRtn x ΔDCG (b6)	-0.93	0.40	-2.04	3.05	0.30
	(-0.9)	(0.22)	(-0.67)	(1.03)	(0.29)
Spinsize (b7)	0.27	-1.84	-0.89	-2.07	-2.41
	(0.07)	(-0.54)	(-0.31)	(-0.65)	(-0.63)
N	76	70	77	90	67
R2	0.035	0.040	0.067	0.053	0.020

TABLE 17 – CHANGE IN GOVARNANCE & POST SPINOFF PAY-PERFORMANCE ELASTICITY REGRESSIONS FOR SPUN-OFF FIRMS: ROE

This table report the coefficients on the post-spinoff pay-performance elasticity regression interacted with the change in composite corporate governance score, Δ*DCG*, for the spun-off firms from Year +1 to Year +3. The dependent variable for all regressions is the first difference in the log of total CEO compensation. Shareholders wealth is measured by ROE. Δ*DCG* is the change in the average DCG score of parent firms for two years before spinoff and spun-off firms for three years after spinoff in each of the 4 different dimensions of corporate governance: board structure (group 1), committee independence (group 2), board and committee activities (group 3) and ownership structure (group 4). Group total denotes the sum of all ΔDCG composite score in all 4 dimensions. A higher value Δ*DCG* denotes governance improvement. Other variables are previously defined. Panel A reports the regression results with t-statistics are reported in parenthesis. ***, ** and * denote significance at the 1%, 5%, and 10% level respectively. Variation in sample size is due to data availability.

	Dependent Variable: Difference in Log of Total Compensation				
	Group 1 Board Structure	*Group 2 Committee Independence*	*Group 3 Board Activities*	*Group 4 Ownership Structure*	*Group Total*
Intercept (b1)	5.86***	7.91***	8.77***	6.75***	5.46***
	(3.41)	(6.09)	(6.19)	(5.5)	(3.04)
conROE (b2)	0.68	-1.19	0.39	1.02	0.16
	(0.16)	(-0.67)	(0.38)	(0.37)	(0.03)
lagROE (b3)	5.32	3.60***	0.90	1.79	5.82**
	(1.66)	(2.65)	(1.02)	(0.94)	(2.09)
ΔDCG (b4)	1.49*	-0.39	-0.95	2.27	0.91
	(1.7)	(-0.37)	(-0.63)	(1.61)	(1.58)
conROE x ΔDCG (b5)	-0.26	4.18*	1.80	-0.48	-0.08
	(-0.1)	(1.89)	(0.53)	(-0.17)	(-0.04)
lagROE x ΔDCG (b6)	-2.44	-2.56***	0.94	-1.21	-1.13*
	(-1.5)	(-2.77)	(0.32)	(-0.53)	(-1.81)
Spinsize (b7)	-3.14	-4.73	-6.02	-4.61	-7.09
	(-0.71)	(-1.23)	(-1.52)	(-1.22)	(-1.56)
N	80	74	79	95	68
R2	0.181	0.117	0.097	0.109	0.186