CEO COMPENSATION STRUCTURE AND MARKET VALUE OF CORPORATE SPIN-OFFS: EXAMINING THE MODERATING EFFECT OF CEO DUALITY

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ABSTRACT

Corporate spin-offs aim to help both divesting (parent) and spun-off (child) companies to boost their shareholder value. In this study, grounded in the agency theory, we examine the effect of CEO compensation mix on the change in market valuation of spun-off subsidiaries based on 138 spin-off cases between 2000 and 2014. Our empirical evidence shows that there is a positive and significant relationship between CEO compensation mix and market performance of the child firm. We also look at the moderating effect of CEO duality on our main relationship, which leads to another positive and significant association.

Keywords: Corporate spin-offs; corporate governance; CEO compensation mix; CEO duality.

INTRODUCTION

Corporate spin-offs have especially become more "popular" in the U.S. since the beginnings of 2000. According to Gertner, Powers, and Scharfstein (2002), in this corporate restructuring technique, "the parent company establishes one of its divisions as a new publicly traded company and distributes the shares of this company to the parent's existing shareholders" (p. 2481). The main purpose of a spin-off transaction is to increase the firm value (Iturriaga and Cruz, 2008). In this context, the divesting firm is called the parent firm and the spun-off subsidiary is called the child firm. There have been some studies exploring this value creation process from the child firm's perspective (Ahn and Walker, 2007; Bennett and Feldman, 2017; Feldman, 2016a; Feldman, 2016b; Feldman, 2016c; Ozbek, 2020; Ozbek, 2021; Ozbek and Boyd, 2020; Semadeni and Cannella, 2011; Veld and Veld-Merkoulova, 2004; Veld and Veld-Merkoulova, 2009; Wruck and Wruck, 2002); however, no study has examined the effect of CEO compensation structure on the market value of the child firm.

From a general perspective, establishing a proper compensation structure "rests on the argument that the effectiveness of a reward system depends on the extent to which pay practices are consistent with the unique internal and external conditions facing a firm" (Barkema and Gomez-Mejia, 1998: 139). An effective compensation plan is also "central to building a durable advantage" (Boyd and Salamin, 2001: 777) for the firm. CEO compensation mix is defined as "the proportion of long-term incentives in a compensation contract" (David, Kochhar, and Levitas, 1998: 201). According to the arguments of agency theory, "a new CEO's pay package should be designed to incentivize risk taking through the use of performance-based pay" (Graffin et al., 2019: 793). Basically, performance-based/ long-term pay "aligns the executives' interests with shareholders by encouraging riskier decisions" (Graffin et al., 2019: 791). Although there are many studies that have examined the effect of CEO compensation on the firm performance, no study has looked at how this critical governance mechanism may impact the value creation in the context of corporate spin-offs. Thus, in this study we look at the relationship between CEO compensation mix and the market valuation of the child firm.

We propose that CEO compensation mix ("dominant" long-term pay) should have a significant and positive effect on the market performance of the child firm. According to Henderson and Fredrickson (1996), if a firm's activities involve uncertainty, company owners tend to grand long-term pay scheme to the executives. As Boyd (1994) also argues, if the CEO has minimal ownership of the company, his/her goals will be very different than those of shareholders. In other words, "the absence of ownership creates an incentive to consume more on the job" (Boyd, 1994: 336) than whatever is stated in his/her job contract. In this study, there are two research questions that we try to answer. Our first question is whether the CEO compensation mix is related to the market value of corporate spin-offs. Our second question is whether CEO duality moderates this main relationship. Thus, via examining the association between both CEO-level constructs and market performance of the child firm, we aim to fill an important gap in the spin-off literature.

Our empirical results indicate that CEO compensation mix is positively and significantly related to the market value of the child firm and CEO duality also positively and significantly moderates this relationship. All our findings are well-aligned with our theoretical arguments. Thus, our research makes a couple unique contributions to the literature. First and foremost, we have found that when the ratio of CEO long-term pay to the total compensation increases, the market valuation of the child firm will increase. Second, we have found that when the CEO and chairperson are the same person, the effect of CEO long-term pay mix on the market value of the child firm will be higher. Third, we have shown that both CEO characteristics, as critical governance mechanisms, significantly matter in the context of corporate spin-offs.

Our paper is organized as follows. First, we present our hypotheses. Second, we explain our methodology including the sample, analysis, and measurement. Third, we discuss our results.

HYPOTHESES DEVELOPMENT

CEO Compensation Mix

Executive compensation structure is critical to the firm success. As Barkema and Gomez-Mejia (1998) argue, "the design of a CEO compensation package supports the implementation of a given strategy" (p. 139). This package may primarily include salary, bonuses, stock options, and restricted stock. While determining the most effective pay mix for the top management, the board needs to critically consider how to best mitigate agency conflicts (Bryan, Hwang, and Lilien, 2005). Especially, long-term incentives are expected to both "encourage risk-averse managers to invest in risky projects and align their interests with those of shareholders" (Bryan et al., 2005: 1710).

In the literature, it has been argued that "CEO pay is instrumentally sensitive to firm operational and/or market performance" (Capezio, Shields, and O'Donnell, 2011: 488). According to the "traditional" arguments of agency theory, executive compensation structure tends to play a more effective role "when tasks are highly complex, surrounded by uncertainty, and difficult to monitor—characteristics that are often common to strategic change efforts" (Carpenter, 2000: 1180). This means that the board of directors may prefer to offer higher incentives to the CEO to make sure he/she does not act risk-averse if these conditions exist and require him/her to take immediate actions toward change (Carpenter, 2000). Especially, by increasing his/her long-term pay structure, the CEO will be more focusing on the interests of shareholders and critically paying attention to the long-term performance of the firm (Carpenter, 2000; Eisenhardt, 1989; Sanders & Carpenter, 1998). In the context of spin-offs, since the future of these recently independent entities are "unknown" in the industry, it will be very important for executives (in particular, the CEO) to be offered a long-term pay mix. By doing so, he/she can take risks to make these spun-off subsidiaries better compete their industry rivals by putting an emphasis on "meeting future financial criteria" (Carpenter, 2000: 1184). Thus:

Hypothesis 1*: Among corporate spin-offs, CEO compensation mix ("dominant" long-term pay) positively influences the change in their market performance.*

Moderating effect of CEO duality

In organizations, CEO duality exists if the CEO and chairperson are the same individual. While some scholars have argued that CEO duality is considered "an impediment to the board's monitoring of top executives" (Tuggle et al., 2010: 951) and thus negatively affects firm performance, other scholars see this governance mechanism as a vital tool that "is essential to unify and to remove ambiguity from firm leadership" (Ramdani and van Witteloostuijn, 2010: 610) and thus positively affects firm performance. Basically, how CEO duality affects firm performance may vary depending on the context.

According to the arguments of stewardship and resource dependence theories, CEO duality "promotes unity of leadership, facilitating organizational effectiveness" (Krause, Semadeni, and Cannella, 2014: 258). In the context of spin-offs, the CEO will have to make the decision-making process as effective and efficient as possible without worrying about any power conflicts at the top (between the CEO and chairperson) of his/her organization. If the duality structure exists, the CEO can make critical decisions without interruption for the sake of these recently independent entities, which lack parental support and resources. Therefore, we argue that CEO duality positively moderates our main relationship. Thus:

Hypothesis 2*: Among corporate spin-offs, CEO duality positively moderates the relationship between CEO compensation mix and the change in their market performance.*

METHODOLOGY

Sample

We used SDC Platinum database to identify all completed corporate U.S. spin-offs that took place between 2000 and 2014. To ensure consistency in our sample, we only included those spin-offs in which 100% of outstanding shares were distributed on a pro rata basis to shareholders of the parent firm. To further confirm the accuracy of our sample, we used some online resources such as *WSJ* as well. As a result, our initial sample size included 205 spin-offs. Since some spun-off subsidiaries were merged into or acquired by other bigger companies or went out of business, our sample size became 138, in which we also removed outliers.

The U.S. Securities and Exchange Commission (SEC) website was used to collect the data on corporate governance. The CompuStat database was used to collect the data related to the firm and industry. In our data analysis, we used a one-year lag so that we would hold consistency with the financial information across all cases. For instance, in the case of a spin-off event completed in March of 2010, we used the financial data for this case from the beginning of 2011 as the "initial" year. Thus, we avoided time-related inconsistencies.

Analysis

CEO compensation mix was the independent variable and CEO duality was the moderating variable in this study. We also controlled for several other variables. We estimated the change in market valuation of spun-off subsidiaries two years after the corporate separation from their corporate parents. Figure 1 shows our conceptual model including all variables with their empirically tested results. Weighted least square (WLS) regression was used to test all our models. Our full regression and interaction models are expressed below:

The change in market valuation of the spun-off subsidiary (full model) = β_0 + β_1 CEO compensation mix + β_2 Firm size + β_3 Capital intensity + β_4 Sales growth + β_5 Year dummy + β_6 Industry dummy + β_7 CEO age + β_8 CEO origin + β_9 CEO duality + β_{10} CEO external directorships + β_{11} Dynamism + ϵ_1

The change in market valuation of the spun-off subsidiary (interaction model) = β'_0 + β'_1 CEO compensation mix + β'_2 CEO compensation mix x CEO duality + β'_3 Firm size + β'_4 Capital intensity + β'_5 Sales growth + β'_6 Year dummy + β'_7 Industry dummy + β'_8 CEO age + β'_9 CEO origin + β'_{10} CEO duality + β'_{11} CEO external directorships + β'_{12} Dynamism + ϵ'_1

Measurement

The dependent variable was measured as the log difference in Tobin's Q. Tobin's Q is a very widely used proxy for testing the firm's market performance and growth potential in the literature (Fu, Singhal, and Parkash, 2016; Ishaq, Islam, and Ghouse, 2021).

As the independent variable, *CEO compensation mix* was measured by the ratio of long-term compensation to total compensation (David, Kochhar, and Levitas, 1988).

We also included a variety of control variables that could potentially influence our outcome variable. Firm size shows the logarithm of total assets (Al-Khazali and Zoubi, 2005). Capital intensity shows the ratio of total capital expenditures to total sales (Silva-Gao, 2012). Sales growth shows the logged number of change in sales in two years following the spin-off event (Collins and Smith, 2006). Year dummy shows whether the spun-off event is executed during financial crisis period (coded 1 for 2001-02/ 2008-09 and 0 for other years). Industry dummy shows whether the spun-off subsidiary is either a manufacturing or service firm (coded 1 for manufacturing and 0 for service). CEO age shows how old the CEO is. CEO origin shows whether the CEO of the child firm has worked under the parent firm prior to the spin-off event (Wruck and Wruck, 2002). CEO duality shows whether the chairperson and CEO are the same person (coded 1 for duality and 0 for non-duality). Board size shows the total number of directors. CEO external directorships show the number of directorships the CEO holds at other firms (Geletkanycz et al., 2001). Dynamism shows the ratio of the standard error of the regression slope coefficient to the mean sales value for five years before the spin-off event (Lepak, Takeuchi, and Snell, 2003).

RESULTS

In Table 1, we present the results for descriptive statistics and correlations as well as levels of significance for all variables. The average of CEO compensation mix is 56.6 percent. This basically means that the ratio of long-term compensation to the total compensation is 56.6 percent on average. According to the correlation matrix, almost all correlation coefficients are lower than 0.4. In addition, since the mean VIF appears to be 1.21, we can conclude that there is no multicollinearity issue in this study (Barako and Brown, 2008; Carpenter, 2002).

In Table 2, we present our regression results. Model 1 only includes control variables. In Model 2, we add our predictor, which is CEO compensation mix. Model 3 shows the results for our interaction effect. According to these results, the coefficient for CEO compensation mix in predicting the change in market valuation of the spun-off subsidiary was positive and statistically significant (b = 0.260; $p < 0.1$), providing support for Hypothesis 1. Regarding our moderation, the interaction effect of CEO compensation mix and CEO duality on this change was also positive and statistically significant (b = 0.038; $p < 0.1$), providing support for Hypothesis 2. We show this moderating relationship in Figure 2. Thus, both our hypotheses are supported.

VARIABLES	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Change in market value (ln)	0.048	0.558	1.000												
2. Firm size (ln)	6.878	1.926	-0.123	1.000											
3. Capital intensity	0.627	1.762	0.020	-0.072	1.000										
4. Sales growth (ln)	9.390	0.073	0.194 **	-0.029	-0.021	1.000									
5. Year dummy	0.092	0.290	-0.196 **	0.261 ***	-0.055	0.108	1.000								
6. Industry dummy	0.473	0.500	0.022	-0.078	0.106	-0.065	-0.151	1.000							
7. CEO age	53.11	7.891	0.014	0.143	-0.009	0.062	-0.052	0.186 **	1.000						
8. CEO origin	0.809	0.393	-0.159 *	0.155	-0.025	0.055	0.108	-0.010	-0.006	1.000					
9. CEO duality	0.390	0.488	0.026	0.020	-0.096	0.132	-0.050	-0.025	0.203 ***	0.049	1.000				
10. Board size	7.521	1.941	0.055	0.540 ***	-0.099	-0.025	0.260 **	-0.139 ***	0.161	0.056 *	-0.188 **	1.000			
11. CEO external directorships	1.141	1.604	0.093	0.153 **	-0.067	0.136 *	-0.042	0.146	0.301 ***	-0.006	0.255 ***	0.115	1.000		
12. Dynamism	0.031	0.032	-0.057	0.069	0.041	0.034	0.112 **	-0.063	-0.027	-0.047	0.060	-0.005	0.009	1.000	
13. CEO compensation mix	0.566	0.314	0.043	0.244 ***	0.045	-0.177 **	0.027	0.022	-0.015	-0.015	0.009	0.131 *	0.054	0.010	1.000

Table 1 Means, standard deviations, and intercorrelations among study's variables

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$

DV: Change in market valuation (ln)	MODEL 1	MODEL 2	MODEL 3
Control variables			
Firm size (ln)	-0.060* (0.030)	-0.076** (0.033)	-0.073** (0.033)
Capital intensity	-0.004 (0.011)	-0.009 (0.010)	-0.012 (0.010)
Sales growth (ln)	1.799** (0.783)	1.969** (0.801)	1.876** (0.784)
Year dummy	-0.410*** (0.099)	-0.431*** (0.104)	-0.454*** (0.097)
Industry dummy	-0.004 (0.091)	-0.006 (0.089)	-0.019 (0.087)
CEO age	-0.012** (0.005)	0.010* (0.005)	-0.008 (0.006)
CEO origin	-0.345** (0.161)	-0.283* (0.164)	-0.254 (0.169)
CEO duality	0.081 (0.099)	0.081 (0.099)	-0.043 (0.130)
Board size	0.076*** (0.027)	0.079*** (0.028)	0.090*** (0.031)
CEO external directorships	0.027 (0.025)	0.025 (0.025)	0.031 (0.025)
Dynamism	-2.362* (1.384)	-2.159 (1.376)	-2.285* (1.399)
Explanatory variable			
CEO compensation mix	---	0.260* (0.153)	0.092 (0.166)
Interaction variable			
CEO compensation mix x CEO duality	---	---	0.038* (0.021)
Sample size	138	138	138
R-squared	0.283	0.300	0.312

Table 2 Independent model of board ownership (robust standard errors in parentheses)

*****p < 0.01; **p < 0.05; *p < 0.1**

DISCUSSION

Does CEO compensation mix affect the market value of spun-off subsidiaries and does CEO duality moderate this relationship? In this empirical study, we examined the effect of CEO compensation mix (moderated by CEO duality) on the change in market value of spin-offs.

As argued by Boyd and Salamin (2001), "compensation plans that reward risk-seeking and long-term decision horizons" seem more suitable for those companies that prefer to "reduce risk aversion by managers and minimize monitoring cost" (P. 781). Besides, according to Bryan, Hwang, and Lilien (2000), short-term compensation (e.g., cash compensation) "is unlikely to provide desired incentives to CEOs" (p. 665) if the firm's strategic goal is high growth without getting stuck in conservative practices. For corporate spin-offs, perhaps a CEO's top priority would be to aim the highest possible growth along with applying innovative practices. This situation refers to the importance of long-term compensation plans. As our results indicate, CEO compensation mix based on the long-term incentives indeed has a positive and significant effect on the change in market value of spin-offs. Our findings here are well-aligned with those in the literature. For instance, McKnight et al. (2000) as well as McKnight and Tomkins (2004) have shown a positive and significant relationship between CEO long-term pay (share options) and shareholder return.

Regarding the moderating effect of CEO duality, we have also shown a positive and significant effect. CEO duality refers to "the practice of a single individual serving as both CEO and board chair" (Krause, Semadeni, and Cannella, 2014: 256). While agency theorists argue that CEO duality negatively influences firm performance due to lower oversight of the board and CEO's "only power" status, stewardship and resource dependence theorists argue that this phenomenon positively affects firm performance due to unified leadership and more effective operations (Krause et al., 2014). Our findings are parallel to those in the literature. For example, Aktas et al. (2018) have shown a positive and significant effect of CEO duality on the internal capital allocation efficiency. As another example, Fang et al. (2016) have found a positive effect of CEO duality on international sales.

Contributions

Our study makes some important contributions. First, we extend the literature on corporate spin-offs by examining the effect of CEO compensation mix on their market value. This shows that long-term pay structure of CEOs will work better while improving the child firm's market performance. Second, we build upon the agency literature (Eisenhardt, 1998; Eisenhardt, 1989). This means that the relationships between principals and agents matter in the context of corporate spin-offs. And third, we have reiterated the importance of CEO duality as a both critical governance construct and moderator.

Limitations, Future Research, and Managerial Implications

We recognize that our study is snot without limitations. First, this study has only explored CEO compensation mix. Future research can look at different aspects of incentive systems. Second, future research can examine some other dependent variables such as profitability and productivity measures. Third, a comparative study can be done between U.S. spin-offs and other spin-offs overseas.

According to our findings, if the amount of CEO's long-term incentives is higher than that of short-term, there will be an increase in the market value of spin-offs. We also contend that if the CEO and chairperson of the board are the same individual, the effect of CEO compensation mix on the market value of spin-offs will be much higher. We hope that this study generates more interest in corporate spin-offs.

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APPENDICES

Figure 1 Theoretical model including empirically tested results
(**S**: significant; **NS**: non-significant)

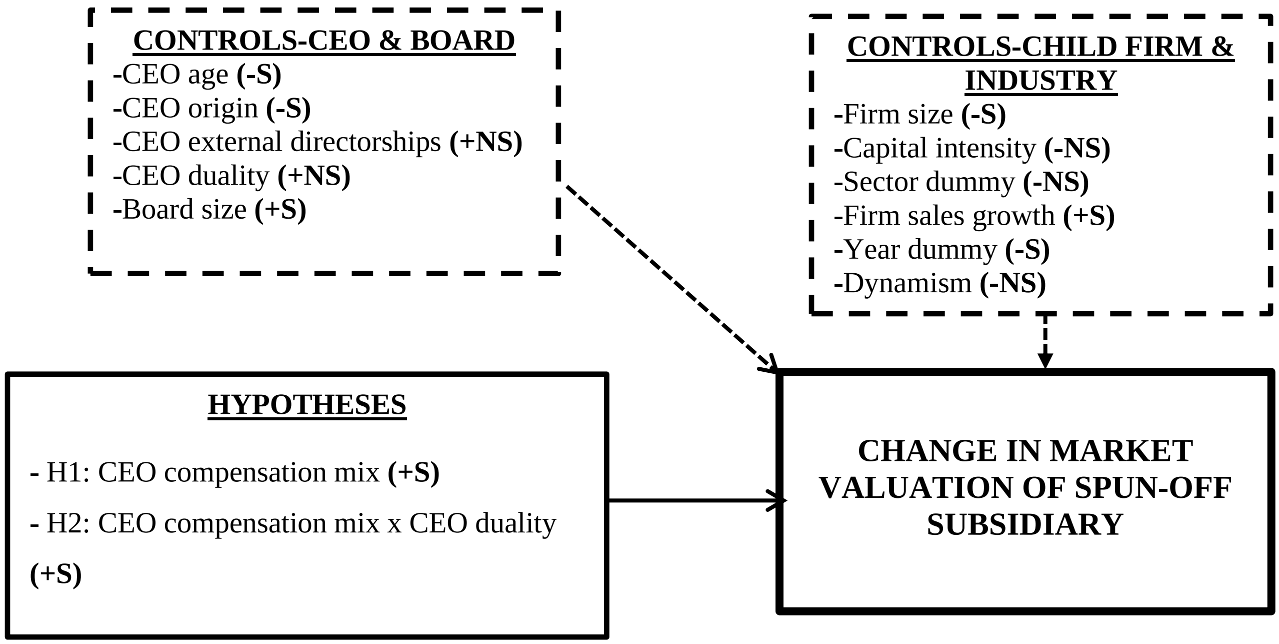

Figure 2 The effect of CEO compensation structure moderated by CEO duality on the change in market valuation of U.S. spun-off subsidiaries