Is Board of Director Compensation Excessive in Restaurant Firms?

Abstract

This study confirms that a firm's size in the previous year significantly increases board of director compensation in the current year, while the number of directors and the firm's capital expenditure significantly decrease it. On average, 31.2% of restaurant firms overcompensate their board of directors, while 33.8% pay less than the expected amount of compensation to their board of directors. However, contrary to public concern, this study argues that the amounts of over- and under-compensation are negligible in proportion to the directors' total compensation, and thus the issue of over- and under-compensation may not pose a serious problem in the restaurant industry. In particular, the amount of overcompensation has a positive effect on firm growth and capital investment, but does not substantially decrease firms' operational and financial performance. The amount of overcompensation can even have a positive influence on financial performance, although the effect is not statistically significant.

Keywords: *board of director compensation, overcompensation, under-compensation, resource dependence theory, agency theory, restaurant firms*

1. Introduction

In publicly traded companies, the boards of directors (hereafter referred to as BODs) are nominated by shareholders; in this manner, the interests of shareholders are represented indirectly by their BODs (Forbes & Milliken, 1999; Hillman & Dalziel, 2003). However, BODs

are not only responsible for advising senior managers and monitoring their business decisions (acting in the interests of shareholders), but also for approving their own compensation (pursuing their own benefits). Given these ambiguously irreconcilable roles of BODs, conflicts of interest are not effectively preventable between shareholders and management. That is to say, excess director compensation (through their own consent) may be less likely to motivate director's monitoring responsibility but instead, inhibit constructive criticism for management due to the phenomenon of "mutual back scratching" (Brick, Palmon, & Wald, 2006). Indeed, agency problems, such as the failure of monitoring management, frequently occur when BODs are overly paid (the compensation of Eron's directors was the seventh highest in the United States), even in financially struggling companies (e.g., Core, Holthausen, & Larcker, 1999; Brick et al., 2006).

To mitigate the disparate interests between shareholders and management (e.g., agency problem), the Securities and Exchange Commission (SEC) tightened the listing standards of publicly traded companies that enforced shareholder approval for almost all equity-based compensation in 2003 (Shorter & Labonte, 2007). Three years later, in 2006, the SEC adopted further major changes in public companies' registration and proxy statements; companies must disclose extensive details of their chief executive officers' (CEOs) compensation packages, in addition to the compensation packages of the chief financial officer (CFO) and the three most highly compensated executive officers (Shorter & Labonte, 2007). Since the regulations came into effect in 2007, the compensation packages of senior managers and directors of publicly traded companies have placed growing emphasis on performance-based incentives and stock awards.

Consequently, over the last decade, BOD compensation has drastically increased (Linck, Netter, & Yang, 2009; Fedaseyeu, Linck, & Wagner, 2018)—its growth rate was twice that of CEOs (Boivie, Bednar, & Barker, 2015). Ironically, this rapid growth in performance-based incentives and stock awards prompted greater concerns about agency problems in companies (Dah & Frye, 2017). Considering recent lawsuits, the problem of excessive BOD compensation seems to worsen. For example, the case of *Facebook* in 2013 has brought public attention to whether BOD members voting for their own compensation package is a reasonable practice (Dah & Frye, 2017). In the case of *Citrix*, the Delaware Court of Chancery ruled that a company must provide the specific rationale and process for determining compensation levels (Lee, 2016). These cases highlight concerns regarding the direct involvement of BODs in the decision-making process for their own salaries and the excessiveness of their compensation.

Despite the seriousness of BOD overcompensation, few studies have assessed BOD compensation (e.g., Dah & Frye, 2017), while extensive research has investigated the effect of CEO compensation on firm performance (e.g., Zahara & Pearce, 1989; Hampel & Fay, 1994; Bryan et al., 2000; Hillman & Daziel, 2003; Brick et al., 2006; Bovie et al., 2015). Some scholars have argued that this rise in BOD compensation can mainly be attributed to the restricted director labor market, strict listing requirements with high risk and responsibility (e.g., Sarbanes-Oxley and other regulatory changes), and directors' business knowledge (Meyer & Richey, 1991; Linck, Netter, & Yang, 2009; Knyazeva, Knyazeva, & Masulis, 2013; Fedaseyeu et al., 2018). The intensified concerns on the excessiveness of BOD compensation in the industry have not been adequately paid attention yet in academia. Accordingly, researchers should answer several questions regarding BOD compensation. These questions include the following: Is BOD compensation excessive? If yes, then by how much? What are its negative effects on the firm?

Although no study has yet directly examined the amount of BOD compensation in the restaurant industry, the continuous increase in CEO compensation has been observed in many large companies as evidenced by massive incentives and stock rewards. For example, the total compensation of McDonald's CEO Steve Easterbrook increased by 94% in 2016, from $7.9 million to $15.4 million, which included a $1.3 million salary (8.4% of his total compensation) and $14.1 million of incentives and stock awards (88% of his total compensation) (Maze, 2016). Similarly, Starbucks Corp. CEO Howard Schultz received $21.8 million of total compensation, including $20.3 million of incentives and stock rewards (92% of his total compensation): his total compensation in 2016 had increased by 625% from $3.0 million in 2006. Also, the CEO of Chipotle Mexican Grill Inc., Steve Ells, received $15.7 million of total compensation, including $14.1 million of incentives and stock rewards (89% of his total compensation) in 2016: his total compensation in 2016 had grown by 776% from $1.8 million in 2006.

Considering the previous findings on the strong positive relationship between CEO and BOD compensations (Brick et al., 2006; Lin & Lin, 2014), BOD compensation may also be substantially increased in the restaurant industry. In fact, according to the annual reports, the total BOD compensation of Starbucks Corp. and Chipotle Mexican Grill Inc. in 2016 had increased 591% and 312%, respectively, from 2006 although McDonald showed only 4% increase. Furthermore, restaurant companies are susceptible to overcompensating BODs because of the following unique governance structures. As proved by prior studies, the restaurant firms would prefer to increase inside directors (Song, Van Hoof, & Park, 2017) to achieve a higher degree of order customization (Reich, 1993) and CEOs of restaurant firms are more likely to serves as the chair of the board of directors in order to adapt their decisions faster (Guillet & Mattila, 2010; Guillet, Seo, Kucukusta, & Lee, 2013; Oak & Iyengar, 2009). The increased

inside directors and CEO duality may allow more centralized power in significant decision makings (i.e., external financing or capital investment) and the less disrupted decision making process can facilitate higher firm growth (Guillet & Mattila, 2010). However, the increased managerial power of CEOs may deteriorate the firm's operational profitability and/or market returns because the CEOs can abuse their power to pursue higher compensation than their performance (Guillet, Kucukusta, & Xiao, 2012). Under these CEO focused governance structures, CEO overcompensation may also lead to BOD overcompensation due to the tendency of cronyism between them (Brick et al., 2006). Therefore, this mutual back scratching practice will negatively affect the firms' operational and/or financial performance because the overcompensated BODs are less likely to protect the interests of shareholders.

To the best of our knowledge, no hospitality study has yet focused on the excessiveness or appropriateness of overall BOD compensation and its impact on firm performance. The literature on the restaurant industry has not yet outpaced the mainstream and has also focused on the link between CEO compensation and firm performance (e.g., Dalbor, Oak, & Rowe, 2010; Guillet, Kucukusta, & Xiao, 2012; Ozdemir & Upneja, 2012; Seo & Sharma, 2013). This study aims to fill these research gaps and provide answers to the above questions. More specifically, first, this study intends to identify whether BOD compensation is excessive, insufficient, or appropriate. Second, if BODs are over- or underpaid, the study aims to identify the determinants for over- or under-compensation and how much more or less compensation than appropriate BODs actually receive. Third, the study intends to identify whether overcompensation or under-compensation practices in restaurant firms are beneficial (or detrimental) in terms of extrinsic (i.e., fixed assets and capital investments) and intrinsic (i.e., operational profitability and stock returns) growth. Both aspects are worthy to examine because asset growth is frequently observed

to be negatively related to operating profits and/or stock returns (Anderson & Garcia-Feijoo, 2006; Cooper, Gulen, & Schill, 2008). The study findings provide a benchmark for the effects of BOD compensation on business practices in the restaurant industry.

2. Literature review

2.1. Board of directors' compensation

A BOD is "the group of elected individuals charged with representing shareholders" (Dah & Frye, 2017, p. 567). It is responsible for advising and monitoring senior management as the shareholder representative (Fama & Jensen, 1983; Weisbach, 1988). First, a BOD is a legal authority for decision-making in a firm (Adams & Ferreira, 2007). Its advisory role requires the expertise of the individual board members when discussing the firm's strategic direction, which can be explained using resource dependence theory, while its monitoring role is derived from agency theory, which assumes the separation of ownership between agents and principals. As agents, managers should act in the best interests of shareholders, but may pursue their own interests (i.e., agency problems). To ensure that managers operate a firm in the interests of shareholders, BODs monitor managers on behalf of shareholders (Bainbridge, 1993; Miller, 1993). From this perspective, the compensation of the BOD, an important motivator, derives from the BOD's effective and successful advice and monitoring of the company (Fama, 1980; Jensen & Meckling, 1976).

A BOD usually compensates management with a retainer, stocks (grants and options), meeting fees, and committee fees (Boivie et al., 2015; Dah & Frye, 2017). However, neither practitioners nor researchers have a clear idea of what level of compensation is appropriate for

BODs (Boivie et al., 2015; Dah & Frye, 2017). Despite the critical role of BODs, directors' compensation has received less attention than executives' compensation. Moreover, that boards set their own payments makes director compensation unfair (Boivie et al., 2015; Dah & Frye, 2017). Consequently, there is a lack of research on appropriate amounts for director compensation, factors that influence their compensation, and the influence of over- or under-compensation on firm performance (Boivie et al., 2015; Dah & Frye, 2017).

Ideally, boards should determine their own payments based on their contributions to management and monitoring performances, but this is not the case in reality (Lorsch & Maclver, 1990; Hempel & Fay, 1994). According to research, directors tend to be over- rather than under-compensated (Hempel & Fay, 1994; Boivie et al., 2015; Dah & Frye, 2017). Recent reports and studies have also discovered directors' overcompensation practices, which have become a new concern for firms (Brick et al., 2006; Dah & Frye, 2017). BODs' overcompensation has been continuous since the enforcement of new and stringent regulations (e.g., the Sarbanes-Oxley Act of 2002) (Linck, Netter, & Yang, 2009). However, the determinants that lead to overcompensation and the question of whether better-compensated directors contribute to better firm growth and performance have been less studied (Boivie et al., 2015; Dah & Frye, 2017).

2.2. Relevant theories

2.2.1. Resource dependence theory

Proponents of overcompensation argue that higher board payments are necessary to compensate for the increased risks and responsibilities associated with board services (Linck et

al., 2009; Meyer & Richey, 1991; Sahlman, 1990). Scholars following resource dependence theory have noted that firms expect BODs to play extra roles (i.e., providing resources) in addition to monitoring or control (Pfeffer & Salancik, 1987; Zahara & Pearce, 1989; Hillman & Dalziel, 2003). Hillman and Dalziel (2003, p. 386) asserted that boards should provide benefits (i.e., resources) to firms, such as advice, counsel, legitimacy, communications channels, and access to or support from other organizations. These activities are related to the role of providing resources, such as "strategy" or "service" (Zahara & Pearce, 1989). This means that directors should actively participate in managers' decision-making processes and help acquire critical resources from outside the firm (Johnson, Daily, & Ellstrand, 1996; Zahara & Pearce, 1989; Song et al., 2017). From this perspective, higher board payments are needed to encourage directors' provision of resources. Moreover, overcompensation may attract more competent directors and eventually have positive effects on firm performance (Singh, House, & Tucker, 1986).

2.2.2. Agency theory

In contrast to resource dependence theory, agency theory views overcompensation negatively because it can exacerbate agency problems (Day & Frye, 2017) and weaken directors' monitoring role (Brick et al., 2006). As mentioned, one of the main roles of directors is monitoring managers (Zahara & Pearce, 1989; Johanson et al., 1996). This role is mainly related to controlling the senior management team (Hillman & Dalziel, 2003; Dah & Frye, 2017), including hiring, firing, and evaluating executives (Pitcher, Chreim, & Kisfalvi, 2000), setting their compensation (Conyon & Peck, 1998), and monitoring their decision implementation

(Rindova, 1999). Theoretically, board compensation should be aligned with shareholders' interests so that firms can avoid agency problems and effectively control their executives (Fama, 1980; Jensen & Meckling, 1976). However, in reality, BODs do not always act in the interests of shareholders (Hemple & Fay, 1994).

Agency theory acknowledges the differences in interests between BODs and shareholders and explains this phenomenon in relation to board dependence or corporate governance (Hillman & Dalziel, 2003). Directors are less inclined to monitor senior management when BODs heavily rely on CEOs or are dominated by inside members (Jensen, 1993; Brick et al., 2006). In such environments, managers and directors may put their own interests before shareholders' (i.e., cronyism), and "mutual back-scratching" between the CEO and directors may take place (Brick et al., 2006, p. 404). According to previous studies, this kind of weak monitoring is strongly associated with BOD overcompensation (Brick et al., 2006; Day & Frye, 2017). Empirically, scholars have proved that excessive director compensation negatively influences firm performance (Core et al., 1999; Brick et al., 2006; Day & Frye, 2017; Malmendier & Tate, 2009).

2.3 BOD overcompensation and firm growth

In a firm's internal labor market, the nature of the pay-back obligation motivates overcompensated directors to contribute to the firm's growth and increase their investment (Brick et al., 2006; Dah & Frye, 2017; Hahn & Lasfer, 2011). In other words, highly compensated BOD members feel strongly obligated and motivated to demonstrate their capabilities and make greater contributions to the firm. In general, this increases alongside higher

capital investment projects. From a corporate governance perspective, agency theory argues that if BOD overcompensation occurs because of weak corporate governance, then corporate managers' entrenchment will improve; this is usually reflected in higher capital investment and firm growth (Brick et al., 2006; Dah & Frye, 2017).

Information asymmetry between not only managers and owners, but between managers and BODs, explains how managers have more insider information related to firm growth, capital investment, and cash inflows than BODs. Therefore, BODs, especially outside directors or non-executive directors, need to undertake costly efforts and activities to monitor managerial practices. To motivate BODs to engage in information acquisition and scrutiny, higher incentive schemes, such as higher BOD compensation, are required (Linn & Park, 2005; Smith & Watts, 1992), suggesting that the relationship between BOD overcompensation and firm growth is positive.

Resource dependence theory also supports the overcompensation of outside directors for firm growth, due to their added value roles. A firm with higher growth and investment activities is more likely to be exposed to areas such as public criticism; these are areas in which the BOD (especially outside directors) can fulfill additional roles. Directors may provide extra resources, such as counseling and offering social connections to external resources to appease public criticism, which can be encouraged by motivating them with higher incentives. However, due to the nature of these kinds of services, there is a limited labor market size for such skilled directors in the restaurant industry, which leads to inflation in the compensation level that companies with stronger growth can afford, thus offering more opportunities to pay for this service and leading to the proposition that BOD overcompensation has a positive impact on firm growth. Therefore, based on the overall arguments described above, we propose the following hypotheses.

H1: The relationship between BOD overcompensation and firm growth is positive.

H2: The relationship between BOD overcompensation and capital investment is positive.

2.4 BOD overcompensation and firm performance

As discussed in Section 2.2.2, agency theory explains that a firm has more free cash flow and cash management tasks under a weak corporate governance structure. A firm with this type of environment offers corporate managers more incentives and more opportunities to exploit their positions, which are indeed expected behaviors for corporate managers (Linn & Park, 2005; Smith & Watts, 1992). This results in higher expenditure in managers' areas of interest, and eventually lower operating profitability and firm value. Few studies have argued that BOD overcompensation aggravates agency issues, such as the BOD conspiring with the CEO, eventually leading to less CEO pay-for-performance sensitivity (Dah & Frye, 2017). Brick et al. (2006) argue that director overcompensation is correlated with a corporate culture that prohibits criticism of CEO decisions. This argument implies that BOD overcompensation could be an indicator of board-management entrenchment, and negatively affect firm performance. Brick et al. (2016) proved that excessive BOD compensation is related to a firm's under-performance measured by excess returns, Q, supporting the theory that excessive BOD compensation is at the expense of shareholders' wealth. Wang's (2018) result also demonstrates that excessive BOD compensation is associated with lower performance, measured as return on assets (ROA). In this regard, operating profitability and stock returns are completely different aspects of firm performance from firm growth and capital investment because high asset growth firms have

experienced abnormally lower operational profitability and market returns (Anderson & Garcia-Feijoo, 2006; Cooper et al., 2008; Lipson, Mortal, & Schill, 2011). Therefore, based on the discussions and results of previous studies, we propose the following hypotheses.

H3: The relationship between BOD overcompensation and ROA is negative.

H4: The relationship between BOD overcompensation and Q is negative.

3. Methodology

3.1. Samples and data

This study combined financial data and BOD compensation in U.S. restaurant companies obtained from the COMPUSTAT database. The sample included firms with the Standard Industry Code of 5812 from 1992 to 2017. After excluding observations with missing data, the sample included 797 unbalanced panel observations (54 firms) for analysis.

3.2. Variables and models

This study first assessed the share percentage owned by the BOD, the number of directors and firm size, financial leverage, capital expenditure, operating profitability, and Tobin's Q as determinants of BOD compensation to calculate the expected total BOD compensation. The share percentage owned by the BOD represented the BODs' ownership status (Bugeja et al., 2016); the number of directors and firm size captured the firms' complexity (Bugeja et al.,

2016); financial leverage and capital expenditure were proxies for the need for monitoring (Brick et al., 2006; Dah & Frye, 2017); and operating profitability and Tobin's Q reflected the firms' operational and financial performances, respectively (Linn & Park, 2005).

In this model, the dependent variable was total BOD compensation (in millions of dollars) in the current year [log(Total BOD compensation)$_t$]. The independent variables were the total number of shares owned by the BOD over the total numbers of outstanding shares, including exercisable options$_{t-1}$, the natural log of the number of directors [log (number of directors)$_{t-1}$], the natural log of total assets [log(total assets)$_{t-1}$], total liabilities over total assets [(total liabilities / total assets)$_{t-1}$], capital expenditure over total assets [(capital expenditure / total assets)$_{t-1}$], operating profit over total assets (ROA$_{t-1}$), and Tobin's Q [Q$_{t-1}$ = (total assets$_{t-1}$ - cash and short-term investments$_{t-1}$ - deferred taxes$_{t-1}$ + stock price * number of common stocks outstanding$_{t-1}$) / (total assets$_{t-1}$ - cash and short-term investments$_{t-1}$)]. The year dummy ($\sum$ year) was used as a control variable.

- Log(Total BOD compensation)$_t$ = β_0 + β_1*percentage of shares owned by BOD$_{t-1}$ + β_2*log(number of directors)$_{t-1}$ + β_3*log(total assets)$_{t-1}$ + β_4* (total liabilities / total assets)$_{t-1}$ + β_5* (capital expenditure / total assets)$_{t-1}$ + β_6*ROA$_{t-1}$ + β_7*Q$_{t-1}$ + $\sum$ year (Model 1)

This study then used two criteria to classify over- and under-compensated firms and calculate the amount of over- or under-compensation as a proportion of total BOD compensation: (1) the residual from Model 1 (total BOD compensation$_t$ - predicted total BOD compensation$_t$), and (2) the change in the ratio of total BOD compensation [(total BOD compensation$_t$ / sales$_t$) - (total BOD compensation$_{t-1}$ / sales$_{t-1}$)]. In other words, the amount of

overcompensation (under-compensation) was the residual from Model 1 if the gap between actual total BOD compensation and expected total BOD compensation was positive (negative) and, simultaneously, the ratio of total BOD compensation over sales in the current year (t) was larger (smaller) than in the previous year (t-1). The classification criteria of over- or under-compensation in this study were stricter and more rigorous than in previous models in the literature, including Dah and Frye (2017). Based on the classification of over- and under-compensation, this study examined whether there were statistically significant differences in the variables of two subgroups by conducting two sample t-tests.

3.3. Statistical analysis

In the second model, this study examined the relationship of overcompensation to firm growth, firm investment practices, and firm performance. The changes in the natural log of property, plant, and equipment [$\Delta\log(PPENT)_t = \log(PPENT)_t - \log(PPENT)_{t-1}$] were used as the firm growth measurement and the change in the natural log of capital expenditure [$\Delta\log(CAPX)_t = \log(CAPX)_t - \log(CAPX)_{t-1}$] was used to measure firms' capital expenditure practices. Here, the capital investment practices of firms were regarded as proxies for BODs' risk-taking. To measure performance, changes in operating profits ($\Delta ROA_t = ROA_t - ROA_{t-1}$) and in Tobin's Q ($\Delta Q_t = Q_t - Q_{t-1}$) were used as operating and financial performance, respectively. In this model, negative ROA (4 out of 797 observations) and Tobin's Q (1 out of 797 observations) values were treated as missing values when the variables were logged. The independent variable was the amount of overcompensation (amount of BOD overcompensation$_{t-1}$), with the same variables as Model 1. The following control variables were used: percentage of shares owned by the BOD,

BOD size, firm size, financial leverage, capital expenditure, operating profitability, and Tobin's Q in the previous year (t-1) with year dummies (∑ year). All of the models used fixed effects regression based on the Hausman test with robust standard error to eliminate potential multicollinearity issues.

- Dependent variables: $\Delta\log(PPENT)_t$, $\Delta\log(CAPX)_t$, ΔROA_t, ΔQ_t
- Independent variable: β_1*log(amount of BOD overcompensation)$_{t-1}$
- Control variables: β_2*percentage of shares owned by BOD_{t-1} + β_3*log (number of directors)$_{t-1}$ + β_4*log (total assets)$_{t-1}$ + β_5* (total liabilities / total assets)$_{t-1}$ + β_6*Q_{t-1} + (capital expenditure / total assets)$_{t-1}$ + β_7*ROA_{t-1} + ∑ year (Model 2)

In the final model, this study used the change in total compensation as an independent variable and added an interaction term of the change in total compensation and a dummy variable of over-or under-compensated firms [Log(Over- and Under-compensation)$_{t-1}$ * dummy variable of over-or under-compensated firms] to confirm the moderating effect of overcompensation. We can compare the effects of overcompensation and under-compensation by including a dummy variable and an interaction term. We can also use them to confirm whether the changes in firm performance are specifically caused by the amount of BOD overcompensation. However, this model can provide only supplementary findings that have not been hypothesized but may add value to the study. The control variables were the same as in Model 2.

- Dependent variables: $\Delta\log(PPENT)_t$, $\Delta\log(CAPX)_t$, ΔROA_t, ΔQ_t

- Independent variables: β_1*Log(Over- and Under-compensation)$_{t-1}$ + β_2*Log(Over- and Under-compensation)$_{t-1}$ * dummy$_{t-1}$ (1 for overcompensated firms and 0 for under-compensated firms) + β_3*Dummy$_{t-1}$ (1 for overcompensated firms and 0 for under-compensated firms)
- Control variables: β_4*percentage of shares owned by BOD$_{t-1}$ + β_5*log (number of directors)$_{t-1}$ + β_6*log (total assets)$_{t-1}$ + β_7* (total liabilities / total assets)$_{t-1}$ + β_8*Q$_{t-1}$ + β_9* (capital expenditure / total assets)$_{t-1}$ + β_{10}*ROA$_{t-1}$ + $\sum$ year (Model 3)

4. Results

4.1 Descriptive financial information

The mean value of total BOD compensation was about $7.78 million with a mean number of directors of 5.87. The board members owned only 2.77% of the total outstanding common shares, with an 8.13% standard deviation, and 63.4% maximum ownership. The figures showed that BOD ownership, including the CEO, was quite small, which could escalate conflicts of interest between management and shareholders (agency problems). The average total assets were $2.011 million and the mean financial leverage was 58.76%. The firms had similar amounts of capital expenditure and operating profits: the capital expenditure was about 12.70% of total assets and operating profit was about 12.72%. Interestingly, the standard deviations of most variables were very large; in particular, total BOD compensation, percentage of shares owned by

BOD, total assets, and Tobin's Q were larger than their mean values. Thus, this study logged these variables in statistical analysis models to improve the distribution normality.

(Insert Table 1 here)

The correlation coefficient between two variables showed that the amount of total BOD compensation was positively related to ownership of BODs (percentage of shares owned by boards), board size (number of directors), firm size (total assets), financial leverage (total liabilities / total assets), operating profitability (operating profits / total assets), and Tobin's Q [(total assets - cash and short-term investments - deferred taxes + stock price * number of common stocks outstanding) / (total assets - cash and short-term investments)] but negatively related to capital expenditure (capital expenditure / total assets). The positive relation with financial leverage and the negative relation with capital expenditure were not consistent with expectations. Interestingly, the ownership of BODs (percentage of shares owned by boards) had a negative relation only with capital expenditure. Board size (number of directors) had positive relations with firm size (total assets), financial leverage (total liabilities / total assets), and operating profitability (operating profits / total assets) but negative relations with capital expenditure (capital expenditure / total assets) and Tobin's Q. Unexpectedly, Tobin's Q was positively related to the total amount of BOD compensation, financial leverage, capital expenditure and operating profitability, but negatively related to board size.

(Insert Table 2 here)

4.2 Amounts of BOD over- and under-compensation

To calculate the amounts of BOD over- and under-compensation, this study ran ordinary least squares (OLS), fixed effects, and generalized method of moments (GMM) regression models in order, based on heteroskedasticity (Breusch-Pagan / Cook-Weisberg test), omitted variables (Ramsey RESET test), model specifications (Modified Wald test), and serial correlation (Wooldridge test for autocorrelation in panel data) test results, with seven determinants of BOD compensation in Model 1. The determinants were as follows: ownership of BODs (percentage of shares owned by boards), board size (the natural log of the number of directors), firm size (the natural log of total assets), financial leverage (total liabilities / total assets), capital expenditure (capital expenditure / total assets), operating profitability (operating profits / total assets), and Tobin's Q [(total assets - cash and short-term investments - deferred taxes + stock price * number of common stocks outstanding) / (total assets - cash and short-term investments)]. In addition, year dummies were used as control variables.

The test results demonstrated the existence of heteroskedasticity in the model via serial correlations between independent variables and residuals. Therefore, this study chose GMM as a valid model to obtain unbiased and consistent estimations (Baum, 2006; Greene, 2012). The post-estimation test results of the second-order autocorrelation (Arellano & Bond, 1991) and Sargan's (1958) findings verified the GMM model's validity. In the GMM model, the Windmeijer-corrected robust standard errors were used to obtain a consistent covariance matrix and accurate inferences (Windmeijer, 2005). The results of the GMM model were compared with those of the OLS and fixed effects models. Among the determinants, board size (the natural log of the number of directors) and capital expenditure (capital expenditure / total assets) had significant negative effects on the amount of BOD compensation (the natural log of the amount

of total BOD compensation), but firm size (total assets) had a significant positive effect, based on the GMM model results. As shown in Table 3, the percentage of total BOD compensation decreased by 0.51% as the number of directors increased by 1%, and decreased by 1.5% as the ratio of capital expenditure over total assets increased by 1%. However, the percentage of total BOD compensation decreased by 0.25% as total assets increased by 1%.

(Insert Table 3 here)

Overall, on average, the proportion of overcompensated firms was slightly smaller than the proportion of under-compensated firms from 1996 to 2016, with 31.2% of firms overcompensated (8 of 26 observations in a year) and 33.8% under-compensated (9 of 26 observations in a year). As shown in Figure 1, the variances by year of over- and under-compensated firms were large. The largest proportion of overcompensated firms was 77% (10 of 22 observations) in 2007, and the smallest was 7% (2 of 29 observations) in 1998. Meanwhile, the largest proportion of under-compensated firms was 57% (16 of 28 observations) in 1999, and the smallest was 9% (2 of 23 observations) in 2012.

(Insert Figure 1 here)

The proportions of overcompensated, under-compensated, and neither over- nor under-compensated firms were similar. However, surprisingly, the average amounts of over- and under-compensation per board member were small compared with the total compensation per board member. On average, the total compensation per board member was $1.73 million, but the amount of overcompensation per board member was $0.25 million (14.7% of the total compensation per board member) in overcompensated firms and $0.13 million (7.7%) in under-compensated firms. Moreover, the proportions of over- and under-compensation per board

member to total compensation per board member were even smaller in the most recent 10 years: the amount of overcompensation per board member was $0.30 million (11.0% of the total compensation per board member) in overcompensated firms and $0.14 million (5.3%) in under-compensated firms from 2007 to 2016. The findings imply that, in general, although restaurant firms tend to over- or under-compensate their BODs, the amounts of over- or under-compensation are not large. The gaps were even smaller in the most recent decade, as shown in Figure 2.

(Insert Figure 2 here)

Based on the results of a GMM model (Model 1), the amount of over- or under-compensation in BOD total compensation was calculated by subtracting the expected total BOD compensation from the actual total BOD compensation (residual from Model 1) only if the change in total BOD compensation over sales was larger (smaller) in the current year (t) than the previous year (t-1). As shown in Table 4, the average total BOD compensation was $14.38 million when restaurant firms overcompensated and $4.64 million when they under-compensated. The amount of total compensation for BODs in overcompensated restaurant firms was significantly larger—by $9.20 million—than in under-compensated restaurant firms. The number of directors was also significantly larger in overcompensated restaurant firms (6.25) than in under-compensated ones (5.79). In contrast, under-compensated restaurant firms had significantly higher capital expenditure over total asset ratios than overcompensated ones (12.39% vs. 10.30%). However, the percentage of shares owned by BODs, firm size, financial leverage, operating profitability, and Tobin's Q were not statistically significantly different between the two groups.

(Insert Table 4 here)

4.3 The relationship between BOD overcompensation and firm performance

In the next set of analyses, the investment practices ($\Delta\log(PPENT)_t$ and $\Delta\log(CAPX)_t$) and firm performances (ΔROA_t and ΔQ_t) of overcompensating firms were examined using Model 2. All four models used a fixed effects regression model based on Hausman test results. In addition, the Wald test showed that all four models had heteroskedasticity. None had autocorrelation in panel data according to the results of the Woodridge test. Therefore, all four models used two-way (time- and firm-fixed) fixed effects regression models with robust standard errors to control heteroskedasticity issues. As shown in Table 5, the amount of overcompensation in the previous year [log(amount of BOD overcompensation)$_{t-1}$] had a positive effect on firm growth [log(PPENT)$_t$ - log (PPENT)$_{t-1}$] and capital investment [log(CAPX)$_t$ - log (CAPX)$_{t-1}$] in the current year. The coefficients were 0.2392 and 0.2642, respectively, and both were statistically significant at the 5% level. The results supported Hypotheses 1 and 2. Of the other variables, firm size and financial leverage had significant negative effects on firm growth and capital investment. However, surprisingly, the amount of overcompensation in the previous year [log(amount of BOD overcompensation)$_{t-1}$] had no significant effect on operational profitability [(ROA)$_t$ - (ROA)$_{t-1}$] or stock performance [(Tobin's Q)$_t$ - (Tobin's Q)$_{t-1}$] in the current year. Thus, the results failed to support hypotheses 3 and 4. Nevertheless, the coefficient of operational profitability [(ROA)$_t$ - (ROA)$_{t-1}$] showed a negative sign and the coefficient of stock performance [(Tobin's Q)$_t$ - (Tobin's Q)$_{t-1}$] presented a positive sign.

(Insert Table 5 here)

Lastly, an interaction term for the amount of overcompensation [log(overcompensation)$_{t-1}$] and the dummy for over- or under-compensated firms was included as in Model 3, to confirm

whether overcompensated firms behaved differently from under-compensated firms although we did not hypothesis its effect on the relationship between them. Of the four models, only the coefficient of one interaction term [log(Over- and Under-compensation)$_{t-1}$ * dummy$_{t-1}$] was significantly positive when the dependent variable was firm growth [log(PPENT)$_t$ - log (PPENT)$_{t-1}$], which indicated that overcompensated firms tended to grow faster than under-compensated firms. However, the change in the amount of capital expenditure between over- and under-compensated firms was not statistically significant, which confirmed that both groups increased their capital expenditure as the amount of BOD compensation increased. In terms of firm performance, the effects of overcompensation on operational profitability and stock performance were not significantly different from the effects of under-compensation. In other words, the firms' operational profitability and stock performance were not significantly affected by the amount of over- or under-compensation for their BODs. These findings did not match expectations.

(Insert Table 6 here)

5. Conclusion and discussion

5.1. Summary of findings

This study confirms that, among the determinants of BOD compensation, firm size in the previous year significantly increases BOD compensation in the current year after controlling for the previous year's BOD compensation, the proportion of shares owned by the BOD, the number of directors, capital expenditure, financial leverage, and firm performance, whereas the previous

year's number of directors and capital expenditure significantly decrease the current year's BOD compensation after controlling for other variables. The findings of this study are robust because GMM models adjust autocorrelation and heteroskedasticity issues in residuals from the panel data. Furthermore, this study applies a supplementary criterion for over- and under-compensation (the change in the ratio of total BOD compensation: (total BOD compensation$_t$ / sales$_t$) - (total BOD compensation$_{t-1}$ / sales$_{t-1}$)), in addition to the estimations from the GMM models. Therefore, both the measurements and assessments of over- and under-compensation in this study are much more rigorous than those used in previous studies, such as Dah and Frye (2017). The amounts of over- and under-compensation were then used for further analysis.

On average, 31.2% of restaurant firms (roughly 8 out of 26 observations per year) overcompensate their BODs, but 33.8% (roughly 9 out of 26) under-compensate them. Consequently, 35% of restaurant firms are classified as neither overcompensated nor under-compensated. Generally, it can be said that restaurant firms are equally distributed in their compensation levels, although the number of under-compensated firms is slightly higher than that of overcompensated firms. More importantly, this study finds that the amounts of over- and under-compensation are both quite small compared with the total compensation per board member of $1.73 million: $0.25 million of overcompensation (14.7% of the total compensation per board member) and $0.13 million of under-compensation (7.7%). Therefore, the findings indicate that, contrary to public concern (e.g., Boivie et al., 2012; Brick et al., 2006), the issue of overcompensation or agency problems may not be severe in the restaurant industry.

Nevertheless, overcompensated restaurant firms have several distinct organizational and financial characteristics (see Table 4). In particular, the amount of total BOD compensation in overcompensated firms is about three times larger than that in under-compensated firms. Also,

the number of directors is significantly larger in overcompensated firms than in under-compensated firms. Unexpectedly, the proportion of capital expenditure in total assets is significantly smaller in overcompensated firms than in under-compensated firms. However, the percentage of shares owned by board members, financial leverage, operational profitability, and stock performance do not differ significantly between the two groups. Although the findings confirm that the amounts of over- and under-compensation are relatively small, the total compensation of board members is much larger in overcompensated restaurant firms than others. Overall, overcompensated firms have much larger BODs and firm size than under-compensated firms, although the difference in operational and financial performance between over- and under-compensated firms them is not substantial.

The findings are supported through more detailed analysis. Consistent with Hypotheses 1 and 2, the amount of overcompensation has a positive effect on both firm growth and capital investment. BOD compensation significantly increases firm growth in overcompensated firms, in contrast to under-compensated firms. In other words, the evidence indicates that as restaurant firms increase their amount of overcompensation, they tend to grow faster. However, surprisingly, the amount of overcompensation does not substantially deteriorate firms' operational and financial performance. Instead, the amount of overcompensation demonstrates a positive relationship with the firm's financial performance, though it is statistically insignificant. These findings do not follow agency theory, but are adjacent to resource dependence theory. Therefore, this study concludes that the practice of over- and under-compensating BODs does not seem to be a serious problem in the restaurant industry, probably due to the insignificant proportion of over- and under-compensation.

5.2. Implications

Although existing studies have examined executive compensation in the hospitality industry (e.g., Guillet et al., 2012), BOD compensation has not yet been discussed in the hospitality literature. This study is the first to investigate BOD compensation in the restaurant industry.

This work rationalizes the exploration of BOD compensation in the context of restaurants by evaluating the amount of BOD compensation in the restaurant industry. The compositions and expectations of the BODs of restaurant firms are different from those of large manufacturing companies. For example, the average number of directors in a BOD in the restaurant industry is fewer than six, including the CEO, CFO, chief operating officer, and chief accounting officer, whereas Dah and Frye (2017) find more than nine and Brick et al. (2016) find more than ten. In addition, the restaurant industry is considered more labor intensive than other industries, which requires a higher degree of order customization (Reich, 1993) and faster short-term decisions to sustain in the competitive environment (Guillet et al., 2013). Therefore, it is reasonable to expect that the role of BODs and CEOs in restaurant firms differs from those in other industries.

This study underscores the advisory role of BODs rather than simply monitoring the CEO. In this sense, this study investigates the effects of total BOD compensation on restaurant firm performance without separating the amount of compensation for outside directors and inside directors to reflect the unique features of restaurant-industry BODs. This study argues that the agency problem in BOD compensation is not serious in the restaurant industry, and the positive effect of overcompensation on firm growth can be explained by resource dependence theory (Hillman & Dalziel, 2003; Song et al., 2017). These findings will also provide relevant insights

into how restaurant firms can build an efficient BOD structure and compensation strategies. Given the positive effect of BOD overcompensation on firm growth, the management of a restaurant firm that is suffering from low growth or that needs to grow rapidly will be encouraged to recruit experienced and skilled BOD members despite their high payment requirement. Skillful BOD members will make aggressive decisions for firm growth. Overcompensation will spur them to obtain benefits for the corporation from their individual resources.

To measure the appropriateness of BOD compensation, this study uses more rigorous criteria to measure over- and under-compensation than previous models (e.g., Dah & Frye, 2017; Brick et al., 2016). This research uses two criteria for measuring over- and under-compensation (the gap between expected compensation and actual compensation, and the gap between compensation growth and sales growth) and applies robust methodological models. This study adopts the GMM model to estimate the amount of BOD compensation because regression diagnostics indicate that the data have heterogeneity and serial correlation in residuals. Previous studies also criticize the issue of endogeneity in models due to unobservable characteristics of firms, CEO and BODs (Hermalin & Weisbach, 2001; Chhaochharia & Grinstein, 2009). However, upon further analysis, the regression models examining the relationship between the amount of overcompensation and firm performance do not present such serial correlation issues. Thus, the fixed effects regression models with Windmeijer-corrected robust standard errors are appropriate to achieve the study's objectives.

In summary, this study reflects the unique features of BODs in the restaurant industry, such as their small size with only a few external directors and their high degree of order customization. Accordingly, this study supports the resource dependency theory, which

emphasizes the advisory role of BODs more than their monitoring role. This study determines that overcompensation has a positive effect on firm growth. Methodologically, it applies rigorous criteria for BOD overcompensation and under-compensation and considers endogeneity issues in the models. The current approach can be extended to other industries given such methodological contributions.

6. Limitations and future research

Although this study examines the effects of BOD compensation on restaurant firms' operational and financial performance to identify the excessiveness of their compensation, the appropriateness of their compensation could also be evaluated in the context of intangible management features, such as crisis management, social responsibility, and profit management. However, such idiosyncratic aspects of management are less likely to change over time and thus may not be appropriate for panel data analysis, despite their influence on compensation. These limitations can be overcome by developing other statistical models that can include time-invariant variables, such as mixed-regression models. In this regard, the links between management compensation and the various aspects of senior management, including BODs' relationships with shareholders and society, are an important topic for future research. In addition, investigations of the comparative effects of different types of compensation on business performance could shed more light on understanding management compensation practices. These subjects are beyond the objectives of this study, and are thus left for future research.

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Table 1. Statistical information for all firms

	Mean	Std. Dev.	Min	Max
Total BOD compensation	7.7822	10.6233	0.3088	135.7671
Growth of total BOD compensation	0.2313	0.8230	-0.9745	10.4940
Sales growth	0.1058	0.2200	-0.8978	2.3844
Percentage of shares owned by BOD	2.7724	8.1331	0	63.4000
Number of directors	5.8745	1.4465	2	12
Total assets	2,011	4,897	6	37,939
Total liabilities / Total assets	0.5839	0.4617	0.0546	4.0717
Capital expenditure / Total assets	0.1270	0.0889	0.0001	1.2041
Operating profit / Total assets	0.1952	0.0920	-0.0632	1.1356
Tobin's Q	3.1471	4.3127	-13.9581	89.7495

Note: Total BOD compensation is in million dollars; percentage shares owned by BOD is the number of shares owned by BOD over total numbers of outstanding common share; Total assets is in million dollars; Tobin's Q is [(total assets - cash & short term investment - deferred taxes + stock price*number of common stock outstanding) / (total asset - cash & short term investment)]

Table 2. Correlation coefficient

	1	2	3	4	5	6	7
1. Total BOD compensation	1						
2. Percentage of shares owned by BOD	0.0870** (0.0140)	1					
3. Log (number of directors)	0.0975*** (0.0059)	-0.0037 (0.9164)	1				
4. Total assets	0.5740*** (0.0000)	-0.0256 (0.4712)	0.1727*** (0.0000)	1			
5. Total liabilities / Total assets	0.2378*** (0.0000)	0.0132 (0.7112)	0.1372*** (0.0001)	0.1756*** (0.0000)	1		
6. Capital expenditure / Total assets	-0.2448*** (0.0000)	-0.1042*** (0.0033)	-0.0876** (0.0135)	-0.4048*** (0.0000)	-0.3341*** (0.0000)	1	
7. Operating profits / Total assets	0.1639*** (0.0000)	-0.0238 (0.5027)	0.0837** (0.0183)	0.0064 (0.8569)	0.3332*** (0.0000)	0.3458*** (0.0000)	1
8. Tobin's Q	0.1698*** (0.0000)	-0.0451 (0.2383)	-0.1441*** (0.0002)	-0.0065 (0.8653)	0.1302*** (0.0007)	0.1507*** (0.0001)	0.3208*** (0.0000)

Note: Percentage of shares owned by BOD is the number of share owned by BOD over total numbers of outstanding common share; Tobin's Q is [(total assets - cash & short term investment - deferred taxes + stock price*number of common stock outstanding) / (total asset - cash & short term investment)]; bracket is p-value; *significant at 10%; **significant at 5%; ***significant at 1%.

Table 3. Determinants for total BOD compensation

	Dependent variable:		
	Log(Total BOD compensation)	Log(Total BOD compensation)$_t$	Log(Total BOD compensation)$_t$
Independent variables	OLS	Fixed-Effects	GMM
Log(Total BOD compensation)$_{t-1}$	-	-	0.3185*** (0.0678)
Log(Total BOD compensation)$_{t-2}$	-	-	-0.0341 (0.0544)
Log(Total BOD compensation)$_{t-3}$	-	-	0.0868 (0.0632)
Percentage of shares owned by BOD$_{t-1}$	-0.0019 (0.0025)	-0.0001 (0.0060)	0.0032 (0.0028)
Log (Number of directors)$_{t-1}$	0.3127*** (0.0859)	0.0872 (0.0938)	-0.5124*** (0.1434)
Log(Total assets)$_{t-1}$	0.4313*** (0.0167)	0.2406*** (0.0836)	0.2545*** (0.0813)
(Total liabilities / Total assets)$_{t-1}$	0.1553*** (0.0409)	0.3584* (0.1881)	0.3500 (0.2245)
(Capital expenditure / Total assets)$_{t-1}$	-0.3071 (0.3371)	-0.5645 (0.3452)	-1.5032*** (0.5688)
(Operating profits / Total assets)$_{t-1}$	1.1446*** (0.2637)	1.4655** (0.7056)	1.3863 (0.9930)
Tobin's Q$_{t-1}$	0.0084* (0.0047)	0.0077 (0.0064)	0.0034 (0.0066)
Number of observation	630	630	526
Adjusted R^2	77.00	66.09	-
Sargan test (Chi^2)	-	-	38.9110
Arellano-Bond AR(1)	-	-	0.0025
Arellano-Bond AR(2)	-	-	0.3478

Note: Percentage of shares owned by BOD is the number of share owned by BOD over total numbers of outstanding common share; Tobin's Q is [(total assets - cash & short term investment - deferred taxes + stock price*number of common stock outstanding) / (total asset - cash & short term investment)]; Year$_{t-n}$ is year dummy and used as a control variable but the results are not presented in the table; bracket is robust standard error; *significant at 10%; **significant at 5%; ***significant at 1%.

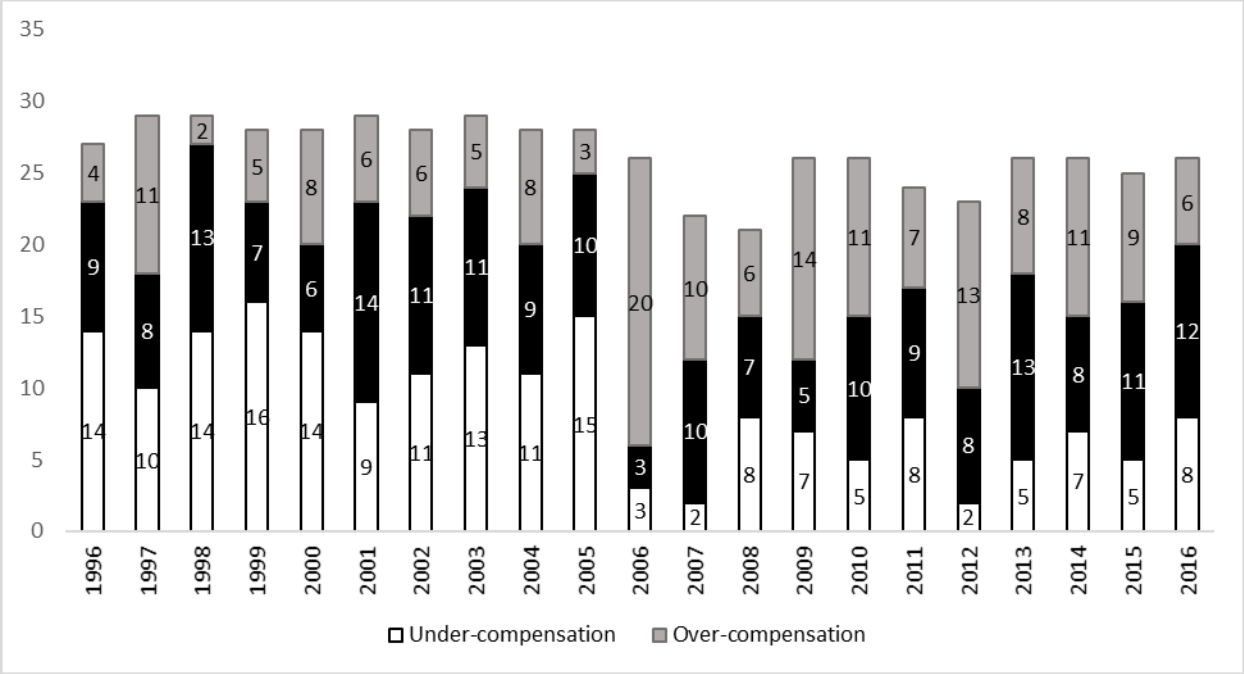

Figure 1. Number of over- and under-compensated firms (numbers of observation)
Note: Over (or Under)-compensated firms have the positive (or negative) gap between actual total BOD compensation and expected total BOD compensation.

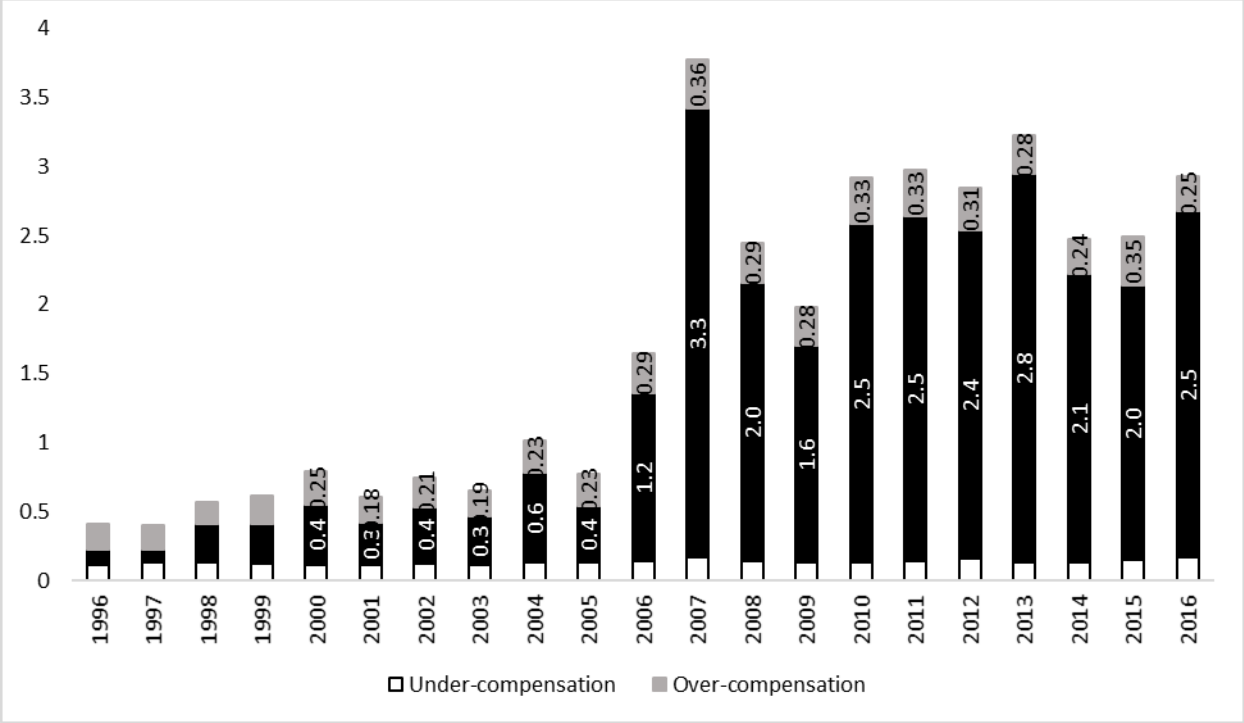

Figure 2. Total compensation per board member (in million dollars)
Note: Over- and Under-compensation per board member is the amount gap between actual total compensation per board member and expected total compensation per board member.

Table 4. Statistical information for overcompensated and under-compensated firms

	Over-compensated firms	Under-compensated firms	Difference t-value
Total BOD compensation	14.3771 (1.2070)	4.6426 (0.3323)	9.7345 8.2108***
Log(Total BOD compensation)	2.2656 (0.0672)	1.1729 (0.0583)	1.0927 12.3430***
Percentage of shares owned by BOD	3.1428 (0.4695)	2.6127 (0.6394)	0.5301 0.6536
Number of directors	6.2529 (0.0945)	5.7929 (0.0886)	0.4599 3.5495***
Log(Number of directors)	1.8143 (0.0146)	1.1733 (0.0160)	0.0818 3.7406***
Total assets	2,880 (449)	2,345 (448)	534 0.8391
Log(Total assets)	6.9959 (0.0997)	6.5258 (0.0915)	0.4701 3.4788***
Total liabilities / Total assets	0.5816 (0.0210)	0.5766 (0.0377)	0.0050 0.1113
Capital expenditure / Total assets	0.1030 (0.0043)	0.1239 (0.0050)	0.0209 -3.1272***
Operating profits / Total assets	0.1936 (0.0058)	0.2034 (0.0072)	0.0098 -1.0500
Tobin's Q	2.8067 (0.1701)	2.9142 (0.2139)	0.1075 -0.3848

Note: Over (or Under)-compensated firms have the positive (or negative) gap between actual total BOD compensation and expected total BOD compensation and higher (or lower) compensation growth than sales growth; Total BOD compensation is in million dollars; Percentage of shares owned by BOD is the number of share owned by BOD over total numbers of outstanding common share; Total assets is in million dollars; Tobin's Q is [(total assets - cash & short term investment - deferred taxes + stock price*number of common stock outstanding) / (total asset - cash & short term investment)]; bracket is standard deviation; *significant at 10%; **significant at 5%; ***significant at 1%.

Table 5. Investment practices and operational performance of over-compensated firms

Independent variables	Dependent variable			
	ΔLog $(PPENT)_t$	ΔLog (CAPX)	ΔROA_t	ΔTobin's Q_t
$Log(Overcompensation)_{t-1}$	0.2392**	0.2642**	-0.0098	0.6013
	(0.1057)	(0.1036)	(0.0116)	(0.3986)
Percentage of shares owned by BOD_{t-1}	0.0124***	-0.0044	-0.0003	0.0208
	(0.0034)	(0.0039)	(0.0006)	(0.0130)
Log (Number of directors)$_{t-1}$	-0.2277	-0.5098***	0.0207	-0.8855
	(0.1774)	(0.1813)	(0.0170)	(0.7971)
Log (Total assets)$_{t-1}$	-0.2369**	-0.2071*	0.0139*	-0.9029
	(0.1055)	(0.1169)	(0.0080)	(0.6371)
(Total liabilities / Total assets)$_{t-1}$	-0.3068***	-0.7753***	-0.0283	-0.3804
	(0.0990)	(0.2868)	(0.0293)	(0.9416)
(Capital expenditure / Total assets)$_{t-1}$	0.7763	-5.0552***	-0.1204	-7.0334
	(0.6600)	(1.3686)	(0.1080)	(5.0488)
(Operating profits / Total assets)$_{t-1}$	-0.0488	0.3887	-0.2854***	13.8408***
	(1.0837)	(1.1533)	(0.0953)	(4.1387)
Tobin's Q_{t-1}	0.0388	0.1101***	0.0095***	-0.8766***
	(0.0264)	(0.0322)	(0.0034)	(0.1903)
Observation	157	157	157	155
R^2	47.62	56.56	42.83	49.75

Note: Δ is difference from previous year; PPENT is property, plant, and equipment; CAPX is capital expenditure; ROA is operating profit over total assets; Over-compensated firms have the positive gap between actual total BOD compensation and expected total BOD compensation and higher (or lower) compensation growth than sales growth; Overcompensation is the amount gap between actual total BOD compensation and expected total BOD compensation; Percentage of shares owned by BOD is the number of share owned by BOD over total numbers of outstanding common share; Tobin's Q is [(total assets - cash & short term investment - deferred taxes + stock price*number of common stock outstanding) / (total asset - cash & short term investment)]; $Year_{t-n}$ is year dummy and used as a control variable but the results are not presented in the table; bracket is robust standard error; *significant at 10%; **significant at 5%; ***significant at 1%.

Table 6. Moderating role of over-compensation on firm performance

Independent variables	Dependent variable			
	ΔLog $(PPENT)_t$	ΔLog $(CAPX)_t$	ΔROA_t	ΔTobin's Q_t
Log(Over- and Under-compensation)$_{t-1}$	-0.0225	0.2386**	0.0161**	-0.0091
	(0.0418)	(0.1043)	(0.0079)	(0.3391)
Log(Over- and Under-compensation)$_{t-1}$* dummy(Over- or Under-compensation)$_{t-1}$	0.2936**	-0.0152	-0.0181	0.3582
	(0.1163)	(0.1161)	(0.0109)	(0.3463)
Dummy(Over- or Under-compensation)$_{t-1}$	-0.0614	-0.0957	-0.0007	-0.1530
	(0.0509)	(0.0899)	(0.0073)	(0.2115)
Percentage of shares owned by BOD_{t-1}	0.0031	-0.0043	-0.0005	0.0113
	(0.0040)	(0.0046)	(0.0004)	(0.0099)
Log (Number of directors)$_{t-1}$	-0.0370	-0.0913	-0.0175	-0.3127
	(0.0735)	(0.2101)	(0.0184)	(0.6375)
Log (Total assets)$_{t-1}$	-0.1167***	-0.1815**	0.0042	-0.2637
	(0.0436)	(0.0893)	(0.0078)	(0.3876)
(Total liabilities / Total assets)$_{t-1}$	-0.1354*	-0.4008	0.0156	-1.3536*
	(0.0738)	(0.2593)	(0.0231)	(0.7910)
(Capital expenditure / Total assets)$_{t-1}$	0.5683*	-4.5520***	-0.0989	-3.2589
	(0.3071)	(0.9049)	(0.0737)	(2.0167)
(Operating profits / Total assets)$_{t-1}$	0.2302	2.6597***	-0.2249***	11.4120***
	(0.4423)	(0.8479)	(0.0797)	(3.3436)
Tobin's Q_{t-1}	0.0208*	0.0498**	0.0056***	-0.7697***
	(0.0104)	(0.0191)	(0.0017)	(0.0938)
Observation	334	335	334	330
R^2	33.20	34.38	22.68	35.67

Note: Δ is difference from previous year; Industry includes all firms; PPENT is property, plant, and equipment; CAPX is capital expenditure; ROA is operating profit over total assets; Over (or Under)-compensated firms have the positive (or negative) gap between the actual total BOD compensation and the expected total BOD and higher (or lower) compensation growth than sales growth; Over- and Under-compensation is the amount gap between actual total BOD compensation and expected total BOD compensation; Tobin's Q is [(total assets - cash & short term investment - deferred taxes + stock price*number of common stock outstanding) / (total asset - cash & short term investment)]; $Year_{t-n}$ is year dummy and used as a control variable but the results are not presented in the table; bracket is robust standard error; *significant at 10%; **significant at 5%; ***significant at 1%.