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## Board structure and CEO compensation: Evidence from U.S. lodging industry

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## ABSTRACT

Using a sample of U.S. lodging firms, this paper examines the relationship between board of director characteristics and chief executive officer (CEO) compensation. Previous research shows that larger boards are detrimental to the effectiveness of the board of directors and deteriorate the control imposed on CEO actions and pay. Board independence is also suggested as an important quality to emphasize the control on the CEO. We propose that U.S. lodging firms' board of directors provide a nice setting to investigate the effects of size and independence on CEO compensation level. Our findings suggest that CEO compensation is not related to board size, and positively related to proportion of the outside board members. These findings are contrary to the findings of previous studies. Our findings may provide significant insights to lodging firms' board of directors to structure efficient compensation packages.

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## 1. Introduction

In this study, we examine the board characteristics of U.S. lodging firms and the role of board of directors on chief executive officer (CEO) compensation within the agency theory framework. Core et al. (1999) concluded that board of director decisions are greatly influenced by CEOs. Therefore, boards that are under the influence of their CEO are likely to fail in setting effective compensation contracts, which are designed to protect owners' interests in the company while at the same time meeting CEO's expectations for his/her service to the company. The primary goal of an effective board of directors should be to safeguard the owners' interests against those of the managers and align these conflicting interests to achieve mutual benefits (Ghosh and Sirmans, 2005). Therefore, boards should act as a monitoring and controlling body on behalf of the shareholders (Core et al., 1999). To carry out these duties, board independence is critically important. Outside board members who have no previous or current affiliation with the firm ensure board independence. Nonetheless, it should be noted that board of directors consists of both outside and inside members, and the presence of inside board members jeopardizes the independence of the board. As Ghosh and Sirmans (2005) put it, if the board structure alleviates CEO monitoring, compensation contracts are optimal and reflect only the economic determinants of performance. They further continue their argument that if the director election process is influenced by the CEO, independence of the board is

compromised and CEO monitoring is rendered ineffective. An empowered CEO gives himself/herself the opportunity to maximize his/her own wealth through higher compensation over market equilibrium. To ensure board independence, the Securities and Exchange Commission (SEC) and stock exchanges have mandated publicly traded companies to comply with the rules and guidelines that were set forth by the governing agencies. This consequently assured the presence of an important number of independent members in U.S. corporate boards. We examine this so-called board independence at an industry level for reasons described in the subsequent sections, taking our sample from the U.S. lodging industry.

## 1.1. Why the lodging industry?

A significant number of studies have investigated the pay-performance relationship of executives in the hospitality industry (Kim and Gu, 2005; Gu and Choi, 2004; Madanoglu and Karadag, 2008). Some researchers, on the other hand, examined the relationship between pay practices and firm performance of all levels of employees in the lodging industry (Namasivayam et al., 2007). Another stream of research has investigated pay differences between hospitality jobs and non-hospitality jobs (Sturman, 2001). Furthermore, a more recent study compared the pay gap between male and female CEOs in the tourism industry and compared the findings to those of the manufacturing industry (Skalpe, 2007). Nevertheless, none of these studies shed light on the board of directors' characteristics in the hospitality industry, and their potential relationship with executive pay. Keiser (2002) compared the boards of lodging, restaurant, and airline industries and revealed interlocking relationships. Yet, his study did not aim at providing any insight

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as to how those board characteristics are related to executive compensation.

Cahan et al. (2005) and Ghosh and Sirmans's (2005) studies showed that the boards of directors of governmental agencies or specific types of business forms, such as Real Estate Investment Trusts (REITs), impose varying degree of board controls on CEO pay. Indeed, boards in different industries may present varying characteristics. For example, Keiser (2002) explored the board of director characteristics of hotel, restaurant, and airline industries, and revealed interlocking relationships. His study pointed out that hotels have the least number of total board members (8.8 per firm) and the highest percentage of inside board members (29.55%) among the three industries. These findings further support the purpose of this study. Boyd (1994) states that smaller boards influence greater control on firms. Therefore, given the small board size of hotel firms, we would expect a high level of board control and a lower compensation on the lodging firms' CEOs. On the other hand, agency theory suggests that boards that have a higher proportion of outside members have more control on firms. Therefore, boards of lodging firms that include a higher number of insiders are supposed to exert less control on CEO compensation, resulting in higher compensation for the CEOs. We investigate this issue in the lodging firms' board structure and contribute to the executive compensation literature by providing evidence of how board structure in the U.S. lodging industry impacts CEO compensation.

## 2. Review of related literature

### 2.1. Pay-performance relationship

The principal-agent theory implies that executives are agents of the shareholders and try to maximize shareholder wealth through improved returns (Ghosh and Sirmans, 2005; Welbourne and Cyr, 1999). When agents set forth a different agenda from the other stakeholders of the firm, the so-called agency problem occurs (Attaway, 2000; Welbourne and Cyr, 1999). In order to prevent the conflicting interests of agents and principals, researchers have suggested aligning agents' interests with owners' interests. However, investigations of the link between CEO compensation and firm performance have resulted in mixed findings. Attaway (2000) found a weak relationship between CEO pay and return on equity (ROE). Likewise, Baker et al. (1988) used sales growth as an indicator of CEO pay and found a weak relationship. Madura et al. (1996) revealed that no statistically significant relationship exists between executive compensation and ROE. Furthermore, Kim and Gu (2005) did not find a significant relationship between return on investment and CEO cash compensation in the U.S. restaurant industry. On the other hand, some researchers reported a positive association between pay and performance. Among those, Veliyath and Bishop (1995) reported that companies that reward their CEOs with higher compensation yield higher ROE. Additionally, Gu and Choi (2004) found a positive relationship between CEO cash compensation and return on assets (ROA). The recent approach for the pay-performance studies has been to investigate the role of the board of directors on setting the CEO pay (Boyd, 1994). In accordance with the pay-performance literature, board structure-CEO pay research is also investigated within the agency theory framework.

### 2.2. Board of directors as a control mechanism

Board of directors is the controlling body that monitors the CEO decisions and protects shareholders' rights. Therefore, the board is the representative of the shareholders (Fama and Jensen, 1983) and is the primary internal control mechanism that is responsible

for setting management compensation and monitoring management (Mizruchi, 1983; Walsh and Seward, 1990; Finkelstein and Hambrick, 1988; Tosi et al., 1997). The literature about the board characteristics and CEO pay has received substantial interest and has resulted in mixed findings.

The number of board members is seen to be an important factor to increase the effectiveness of a board to do its controlling task (Lipton and Lorsch, 1992; Jensen, 1993). When the board membership is large, it is difficult to establish a consensus among the board members to create opposition against the CEO, and work productivity declines (Cahan et al., 2005). Similarly, it is also argued that in a large board, coordination is difficult, and free riding (a board member's reliance on other members of the board to make board decisions) becomes a problem (Steiner, 1972). When it comes to firm value, Yermack (1996) found that firms with smaller boards have higher firm values. Supportively, as evidence from the Finnish market, Eisenberg et al. (1998) found that the larger the board, the lower the firm profitability.

Outside directors who have no relationship with the firm are considered more independent and, therefore, are expected to assert more control on CEO performance and pay than inside board members. Boards with a higher percentage of outside board members are deemed to be more effective for two reasons (Conyon and Peck, 1998). First, outside board members have the incentive to signal their managerial competence to other potential employers (Fama and Jensen, 1983; Weisbach, 1988). Second, outside members already have expertise in monitoring top management teams in other companies (Fama and Jensen, 1983). The relationship between top executive compensation and outside member representation has yielded mixed results. Boyd (1994) and Lambert et al. (1991) present a positive relation between CEO compensation and the percentage of the board composed of outside directors. Contrarily, Finkelstein and Hambrick (1989) report that compensation is not related to the proportion of outside directors on the board of directors.

Boards that include members who sit on other companies' boards are also relatively less efficient in monitoring top management activities compared to the boards that are composed of members with fewer other directorship duties. This is in part due to the time devoted to each single board that the members serve on. Opposed to this view, Fama and Jensen (1983) argue that multiple directorship can in fact be valuable because it adds to the director's experience and knowledge base. Furthermore, Shivdasani (1993) and Talmor and Wallace (2000) found a positive relationship between the number of directorships and CEO compensation, whereas Core et al. (1999) found a negative relationship.

The age of the board members is also considered to be a significant factor that contributes to the effectiveness of the board. Core et al. (1999) suggest that outside directors may become less effective as they grow older. Therefore, boards with a larger proportion of old-aged outside board members are less effective in controlling CEO actions and compensations.

CEO-duality effect has been another important variable investigated by previous research (Jensen, 1993; Kesner et al., 1986). CEO duality occurs when CEO also serves as the chair of the board. Jensen (1993) states that to improve monitoring effectiveness, the CEO should not be the chair of the board. The reason behind this argument is that if the CEO serves as the chair of the board, he/she will set the agenda, configure committees, decide on operating procedures, and communicate with other board members. Previous empirical findings are inconclusive for this expectation though. Kesner et al. (1986) found no evidence of a CEO-duality effect, while Beatty and Zajac (1994) found that CEO-duality can be suboptimal for board effectiveness.

### 3. Research hypotheses

As discussed in the preceding section, previous studies found mixed results for the relation between board size and CEO compensation. One would expect that as the board size gets larger, the control on CEO compensation weakens for various reasons such as disagreements among members and personal ties of older members with the CEO. Larger boards require the agreement of more people on any decision to be made and realized. The mixed results of previous research studies dissuaded us from establishing a one-sided hypothesis to examine the relation between board size and CEO compensation. Therefore, we shape our first hypothesis as follows:

**Hypothesis 1.** CEO compensation is related to board size in the U.S. lodging industry.

Although we believe that board size is a strong indicator of board control of CEO compensation, there are other board qualities that are very likely to have an influence on CEO compensation. Outside member representation, age of outside board members, and busy directors are three important board qualities that have been extensively used in previous studies. We also include these three indicator variables in our study since we believe that they have a possible control effect on CEO compensation. We further develop three hypotheses and investigate these as *Hypotheses 2a, 2b and 2c*.

**Hypothesis 2a.** CEO compensation is negatively related to the proportion of outside board members in the U.S. lodging industry.

**Hypothesis 2b.** CEO compensation is positively related to the proportion of busy directors in the U.S. lodging industry.

**Hypothesis 2c.** CEO compensation is positively related to the proportion of old-aged directors in the U.S. lodging industry.

Our last hypothesis seeks to reveal whether there exists a CEO duality effect on setting CEO pay level. The underlying idea behind this hypothesis is simple and clear. If the CEO is the chair of the board, he/she has a strong say in his/her own compensation contract and a substantial influence on board members to convince them to increase his/her own wealth. Hence, with this third hypothesis, we test whether CEO duality is an issue in the U.S. lodging industry to determine CEO compensation levels.

**Hypothesis 3.** CEO compensation is positively related to CEO duality in the U.S. lodging industry.

### 4. Research method

#### 4.1. Sample selection

Data were collected from 2002 to 2008 through two different data sources. We searched the COMPUSTAT database for NAICS code 721110 “hotels (except casino hotels) and motels”. COMPUSTAT database returned 27 firms, of which twelve were inactive and fifteen were active. Out of these fifteen active companies, two were privatized and one filed bankruptcy between 2002 and 2008. For this reason, these three companies were also excluded from the sample pool. Additionally, three of the remaining twelve active companies were foreign companies, one of which did not provide executive compensation information for the period 2002–2008. Consequently, we had to exclude these four companies as well. We then ended up with eight publicly traded companies from COMPUSTAT. We bolstered our sample size with an additional four companies that were publicly traded during the period 2002–2008, but which were not included in COMPUSTAT. We obtained these companies from the NYSE industry listings, where they are listed

under the Travel and Leisure Consumer Services classification. To ensure the consistency between COMPUSTAT firms and NYSE firms, we verified that the main business of these four companies is hotels and lodging related services. Despite the fact that our sample size appears to be small, we are in fact collecting information on the entire population of publicly traded lodging firms for the period 2002–2008. There are no other firms from which we can collect data.

Most data were hand-collected from annual reports (10-K) and proxy reports (DEF-14) that were filed with the Securities Exchange Commission (SEC). The firm performance measure, ROA, was calculated using the accounting data from 10-K reports.

Compensation data were collected from annual proxy statements. Salary and bonus along with all other types of compensation components are available in the executive compensation section of the proxy statements.

Board structure data were also hand-collected from the annual proxy statements. Firms are mandated to disclose the list of their board members each year and also convey information about the new nominations for opening spots on the board. The number of board members is disclosed along with brief information about each member. In this small paragraph for each member, firms disclose information about current professional positions held, previous positions held, professional affiliations, age, and directorship in other company boards. We needed to collect our board data through these disclosures for each board member in each year for each company for the period 2002–2008. We are interested in the total number of board members, the number of insiders and outsiders, the age of each member, directorship in other firms, and CEO duality.

Our final data set included a total of 64 firm-year observations collected from 12 firms that provided board and financial information between the years 2002 and 2008.

#### 4.2. Variables and model

*CEO compensation.* CEO compensation is composed of two elements: salary and bonus. In this study, we use the total cash compensation as the proxy of CEO compensation. Salary plus bonus has been used in many previous studies mostly due to its immediate availability from proxy statements and ease of calculation. More comprehensive proxies for compensation such as deferred benefits, stock options, and stock awards have been avoided primarily because of the complexity of deriving these figures. Previous research has proved that total cash compensation (salary plus bonus) is a good proxy of more comprehensive deferred compensation (Lewellen and Huntsman, 1970). For sensitivity analysis, we include stock options and stock awards in our total compensation variable, and derive close results to those when we use only cash compensation. We use the logarithmic transformation of compensation to reduce the heteroskedasticity as suggested by Finkelstein and Hambrick (1989).

*Board control.* Board control variables are the main interest of this study. We hypothesize the board control through five board characteristics. The level of board influence asserted on managers' decisions highly depends on the board size, percentage of outside board members, directorships at other company boards, age of board members, and CEO duality. Our proxy for the board size is the total number of directors serving on the board of directors. As we have discussed previously, to account for the board independence, we use the percentage of outside board members to total board members. Consistent with Core et al. (1999), we define an outside director to be busy if he/she serves on three or more corporate boards. An old director is defined to be one who is 69 or older (Ghosh and Sirmans, 2005). Similar to the comparison used for busy directors, we use a percentage measure as the proxy for

old-aged directors, which is defined as the ratio of the number of old-aged outside directors to the total number of outside directors. For the last board variable, CEO duality, we use a dummy variable for which we code 1 in the case CEO is also the board chair and 0 otherwise.

**Firm performance and firm size.** To control for potential firm performance effect on compensation, we include ROA in our regressions. Given the small sample size, we avoid including more control variables in our models and do not include a market performance proxy (stock return) in our model. Yet, in untabulated results, we further include stock return in our tests; however, the coefficient for stock return was consistently insignificant. We also control for the effect of firm size on the compensation. Our proxy for the firm size is the natural logarithm of total sales.

We estimate the following model via ordinary least square regression (OLS). Reported standard errors are heteroskedasticity-consistent standard errors. No significant outlier was detected in the data. The scatter plot of residuals against our dependent variable shows a randomly scattered pattern. Furthermore, none of the standardized residuals exceeds the threshold point of 3.

$$\ln\text{CashComp} = \gamma_0 + \gamma_1\text{BrdSize} + \gamma_2\text{OutPerc} + \gamma_3\text{BusyPerc} + \gamma_4\text{OldPerc} + \gamma_5\text{CeoCh} + \gamma_6\text{Roa} + \gamma_7\ln\text{Sales} + \varepsilon \quad (1)$$

*lnCashComp*: natural logarithm of total cash compensation (salary plus bonus). *BrdSize*: number of board members serving on companies' board of directors. *OutPerc*: proportion of outside board members to total board members. *BusyPerc*: proportion of busy outside board members to total outside board members. For an outside member to be classified as busy, he/she should be serving on 3 or more other company boards. *OldPerc*: proportion of old outside board members to total outside board members. An outside member is classified as old if he/she is age 69 or over. *CeoCh*: CEO duality effect. It takes values of 1 and 0 depending on whether the CEO serves as the chair of the board. If the CEO is the chair of the board, then *CeoCh* is 1; otherwise it is 0. *Roa*: return on assets calculated as the net income divided by the total assets. *lnSales*: natural logarithm of total sales.

## 5. Results

### 5.1. Descriptive statistics

Table 1 reports the descriptive statistics for the sample firms over the years 2002–2008. Lodging company boards on average

included 8.81 members with a maximum of 13 and a minimum of 6 board members. Keiser (2002) also found a mean board size of 8.8 for the hotel industry; therefore, our finding is consistent with his findings. Moreover, a mean board membership of 8.81 for the lodging industry is also consistent with the findings of other studies. Ghosh and Sirmans' (2005) sample on average had 8.18 directors, and Chhaochharia and Grinstein's (2009) had on average 9.78 directors. Other studies yielded relatively high and low mean values for board size when they included larger sample sizes. Conyon and Peck (1998) used a sample that had an average board size of 6.6, while Core et al.'s (1999) sample had an average board size of 13. On average, outside board members composed 79% of the entire board. This statistic in turn should imply a high control on manager decisions given that outside board members impose greater control on corporate executives. The *OldPerc* variable is meant to catch the loose control due to the director's age. Old directors made up 14% of total outside board members. Likewise, busy directors are also likely to influence less control on CEOs actions since they also have responsibilities on other company boards they sit on. Thirty-three percent of outside board members turned out to be busy for the lodging companies used in this study. On average, in 38% of the cases, the CEO was also the chair of the board of directors. We report both the real dollar amount and log of cash compensation in Table 1. In our sample, CEOs earned, on average, a total cash (salary plus bonus) compensation of \$987,009 annually. Mean of log compensation, on the other hand, was 13.59. Lastly, we report descriptive statistics for the control measures. The average lodging firm in our sample had a 4.53% ROA. Moreover, the mean of log of sales (size proxy) was 20.27 with a maximum of 23.28 and a minimum of 18.03.

### 5.2. Empirical findings

Table 2 reports the Pearson pairwise correlation among the variables. Unsurprisingly, size is highly correlated with compensation (0.6656). This confirms that larger firms have more resources to reward their executives. The correlation between old member percentage and CEO duality is significantly high. This high correlation can be explained by the fact that as outside board members grow older and have worked in a particular company board for several years, they develop personal relationships with the CEO and take a favorable position in regard to the appointment of the CEO as the board chair. Outside member percentage and CEO duality variables have a significant and negative correlation (–0.5066), which is not surprising given the board independence theory. There is also a positive and significant correlation between busy member

**Table 1**  
Descriptive statistics.

	Mean	Std. Dev.	Minimum	Maximum
<b>Panel A. Dependent variable</b>				
<i>Cashcomp</i>	\$987,009	\$754,679	\$216,000	\$3,802,365
<i>lnCashComp</i>	13.5815	0.6523	12.2830	15.1511
<b>Panel B. Explanatory variables</b>				
<i>Board variables</i>				
<i>Brdsize</i>	8.8125	1.4571	6.0000	13.0000
<i>OutPerc</i>	0.7882	0.1227	0.5000	1.0000
<i>BusyPerc</i>	0.3264	0.2985	0.0000	0.6134
<i>OldPerc</i>	0.1370	0.1607	0.0000	0.5714
<i>CeoCh</i>	0.3750	0.4880	0.0000	1.0000
<i>Control variables</i>				
<i>Roa</i>	0.0453	0.0971	–0.0721	0.3719
<i>lnSales</i>	20.2662	1.4263	18.0341	23.2875

*Cashcomp*: sum of annual salary and bonus. *lnCashComp*: natural logarithm of total cash compensation (salary plus bonus). *BrdSize*: number of board members serving on companies' board of directors. *OutPerc*: proportion of outside board members to total outside board members. *BusyPerc*: proportion of busy outside board members to total outside board members. For an outside member to be classified as busy, he/she should be serving in 3 or more other company boards. *OldPerc*: proportion of old outside board members to total outside board members. An outside member is classified as old if he/she is at the age of 69 or over. *CeoCh*: CEO duality effect. It takes values of 1 and 0 depending on whether the CEO serves as the chair of the board. If the CEO is the chair of the board, then *CeoCh* is 1; otherwise it is 0. *Roa*: return on assets calculated as the net income divided by the total assets. *lnSales*: natural logarithm of total sales.

**Table 2**  
Pearson pairwise correlations.

	<i>lnCashComp</i>	<i>BrdSize</i>	<i>OutPerc</i>	<i>BusyPerc</i>	<i>OldPerc</i>	<i>CeoCh</i>	<i>Roa</i>	<i>lnSales</i>
<i>lnCashComp</i>	1							
<i>BrdSize</i>	0.3382*	1						
	0.0063							
<i>OutPerc</i>	0.4004*	-0.0461	1					
	0.0010	0.7178						
<i>BusyPerc</i>	0.0674	0.1432	-0.4964*	1				
	0.5968	0.2591	0.0000					
<i>OldPerc</i>	-0.0714	0.3392*	-0.4833*	0.2969*	1			
	0.5750	0.0061	0.0001	0.0172				
<i>CeoCh</i>	0.1955	0.4800*	-0.5066*	0.5043*	0.5479*	1		
	0.1216	0.0001	0.0000	0.0000	0.0000			
<i>Roa</i>	0.2622	0.1119	0.1731	-0.0425	0.0988	-0.1307	1	
	0.0363	0.3785	0.1713	0.7390	0.4371	0.3032		
<i>lnSales</i>	0.6656*	0.4085*	0.2975*	0.2131	-0.1974	0.2046	0.1932	1
	0.0000	0.0008	0.0170	0.0909	0.1179	0.1049	0.1262	

See Table 1 for variable definitions.

\* Correlation is significant at the 0.05 level (2-tailed).

percentage and CEO duality (0.5043). This relationship is not surprising either, because as described before, busier board members are more likely to fail to fulfill their board duties and exert less control on CEO actions. There was a negative correlation between outside member percentage and busy member percentage variables (-0.4964). This was quite surprising and contrary to our expectation as well as to what the theory states. We would expect to see more busy directors in company boards with larger outside member representation, but the relationship was the inverse. Similarly, old member percentage was negatively correlated with outside member percentage (-0.4833). Similarly, we would expect that outsider-concentrated boards have more busy directors since they are likely to be large firms that target to have high-profile board members on their boards. Moreover, these high-profile board members are very likely to serve in other company boards. When it comes to the board size, which is one of our main variables for this study, it was positively correlated (0.48) with CEO duality. This correlation states that larger boards tend to have their CEO serve as the board chair. Further, board size is also correlated (0.3392)

with old member representation, meaning that as the board size increases, so does the percentage of older outside directors. Firm size (*lnSales*) is also positively correlated with the board size, which basically suggests that as a firm grows in size, the board of directors includes more members.

In Table 3, we document the findings of the regression of compensation on board characteristics. The overall model is significant ( $F = 10.44, p = 0.0000$ ) and has a moderate explanatory power (adj.  $R\text{-sq} = 51.20\%$ ).

The coefficient on *BrdSize* variable is insignificant ( $p = 0.95$ ). This result led us to reject Hypothesis 1. Insignificant *BrdSize* variable was contrary to results in previous research. Talmor and Wallace (2000), Core et al. (1999), Cahan et al. (2005), and Ghosh and Sirmans (2005) found a significant relationship between board size and CEO compensation. Their finding is consistent with Yermack's (1996) findings that larger boards are less effective in monitoring because of the lack of interaction among board members. In this regard, our insignificant finding is intriguing. The insignificant coefficient on our *BrdSize* variable may be partly due to the small

**Table 3**  
Regression of total cash compensation on board variables.

Variables	Coefficient	Std. error	t	p
Cons.	7.377526	0.9638414	7.65	0.000
<b>Board variables</b>				
<i>BrdSize</i>	-0.0032314	0.0516057	-0.06	0.950
<i>OutPerc</i>	2.265726	0.6936681	3.27	0.002
<i>BusyPerc</i>	0.049136	0.2546698	0.19	0.848
<i>OldPerc</i>	0.1520876	0.5133157	0.30	0.768
<i>CeoCh</i>	0.4119753	0.189084	2.18	0.034
<b>Control variables</b>				
<i>Roa</i>	0.9335081	0.6486014	1.44	0.156
<i>lnSales</i>	0.2078829	0.0579857	3.59	0.001
<b>Model summary</b>				
R-sq	56.63%			
Adj. R-sq	51.20%			
F-statistic	10.44			
F significance	0.000			
Observations	64			

In this table, we report the findings of Eq. (1). We estimate the impact of board composition variables on the CEO compensation controlling for the economic determinants of CEO compensation. We control for the effects of return on assets (*Roa*) and firm size (*lnSales*) on the CEO compensation:

$$\ln\text{CashComp} = \gamma_0 + \gamma_1 \text{BrdSize} + \gamma_2 \text{OutPerc} + \gamma_3 \text{BusyPerc} + \gamma_4 \text{OldPerc} + \gamma_5 \text{CeoCh} + \gamma_6 \text{Roa} + \gamma_7 \text{lnSales} + \varepsilon$$

*lnCashComp*: natural logarithm of annual salary plus bonus. *BrdSize*: number of board members serving on companies' board of directors. *OutPerc*: proportion of outside board members to total outside board members. *BusyPerc*: proportion of busy outside board members to total outside board members. For an outside member to be classified as busy, he/she should be serving in 3 or more other company boards. *OldPerc*: proportion of old outside board members to total outside board members. An outside member is classified as old if he/she is at the age of 69 or over. *CeoCh*: CEO duality effect. It takes values of 1 and 0 depending on whether the CEO serves as the chair of the board. If the CEO is the chair of the board then *CeoCh* is 1; otherwise it is 0. *Roa*: return on assets calculated as the net income divided by the total assets. *lnSales*: natural logarithm of total sales.

**Table 4**  
Regression of total compensation on board variables.

Variables	Coefficient	Std. error	t	p
Cons.	2.305224	1.058915	2.18	0.034
<b>Board variables</b>				
<i>BrdSize</i>	−0.114031	0.0566961	−2.01	0.049
<i>OutPerc</i>	2.649617	0.7620914	3.48	0.001
<i>BusyPerc</i>	0.5165798	0.2797905	1.85	0.070
<i>OldPerc</i>	0.5421882	0.5639492	0.96	0.340
<i>CeoCh</i>	0.2771937	0.2077353	1.33	0.187
<b>Control variables</b>				
<i>Roa</i>	1.725628	0.7125794	2.42	0.019
<i>lnSales</i>	0.5124773	0.0637054	8.04	0.000
<b>Model summary</b>				
R-sq	78.05%			
Adj. R-sq	75.30%			
F-statistic	28.44			
F significance	0.000			
Observations	64			

In this table, we report the findings when Eq. (1) is re-estimated with a different measure for dependent variable. In this analysis, we use the total compensation, measured as the sum of salary, bonus, fair value of stock options, and fair value of stock awards. We estimate the impact of board composition variables on CEO compensation controlling for return on assets (*Roa*) and firm size (*lnSales*):

$$\ln\text{TotalComp} = \gamma_0 + \gamma_1\text{BrdSize} + \gamma_2\text{OutPerc} + \gamma_3\text{BusyPerc} + \gamma_4\text{OldPerc} + \gamma_5\text{CeoCh} + \gamma_6\text{Roa} + \gamma_7\text{lnSales} + \varepsilon$$

*lnTotalComp*: natural logarithm in total compensation. Total compensation is proxied as the sum of salary, bonus, fair value of stock options, and fair value of stock awards. *BrdSize*: number of board members serving in companies' board of directors. *OutPerc*: proportion of outside board members to total outside board members. *BusyPerc*: proportion of busy outside board members to total outside board members. For an outside member to be classified as busy, he/she should be serving in 3 or more other company boards. *OldPerc*: proportion of old outside board members to total outside board members. An outside member is classified as old if he/she is at the age of 69 or over. *CeoCh*: CEO duality effect. It takes values of 1 and 0 depending on whether the CEO serves as the chair of the board. If the CEO is the chair of the board then *CeoCh* is 1; otherwise it is 0. *Roa*: return on assets calculated as the net income divided by the total assets. *lnSales*: natural logarithm of total sales.

sample size. In this study, we use only data from lodging firms between 2002 and 2008, which in turn produced only 64 firm-year observations.

The coefficient for outside member representation variable is significant ( $p=0.002$ ), but in the inverse direction to what we had expected. We had argued that outside member representation increases the level of control imposed upon CEOs and leads to tightened compensation packages. Therefore, the positive coefficient on the *OutPerc* is intriguing, contrary to our expectation, and needs further investigation. One possible explanation for the observed positive association between outside member representation and CEO's compensation is the CEO's power to influence the decision process regarding who will serve on the board of directors. If the CEO is also the chair of the board, then he/she has influence over the decision to solicit outside board members. Clearly he/she will attempt to get members over whom he/she can exercise control. A board composed of members in this manner will potentially favor higher compensation for CEOs because even the board members are interested in getting re-nominated to the board. Therefore, we expect a higher compensation for CEOs when he/she is also the board chair. To test this proposition, we run two regressions of total cash compensation on the outside member percentage variable controlling for firm performance (ROA) and firm size (*lnSales*) for two subgroups of our sample. The first subsample comprises cases (24 firm-year observations) where the CEO is also the chair of the board. The second group consists of all other cases (40 firm-year observations) where the CEO is not the chair of the board. Consistent with our expectation, the coefficient for outside percentage is significantly positive in the regression in which we used the first group; and it was insignificant in the regression for the second group suggesting that when the CEO is chair of the board, outside members favor CEO's compensation; whereas when the CEO is not the chair of the board, CEO's compensation is not related to outside member representation. This finding helps us explain the positive coefficient on the *OutPerc* variable in the main regression.

As the tenure and experience of a board member expands over the years, he/she is recruited by other firms to serve as a board

member. As indicated before, an increase in the number of boards will result in less attention to each board. Therefore, we expect less monitoring on the CEO's actions and consequently a positive coefficient on the busy percentage variable. However, results in Table 3 show that there is no significant relationship between busy member representation and compensation. Therefore, Hypothesis 2b is rejected. High representation of old-aged board members in a company board is also deemed to be detrimental to control put forth on CEOs for the reasons described earlier. Yet, our findings do not conclude this expectation. The coefficient on *OldPerc* is insignificant leading to the rejection of Hypothesis 2c.

The last board characteristic variable in our analysis is the *CeoCh*, CEO duality effect. The significantly positive coefficient on CEO duality variable (*CeoCh*) confirms our expectation that CEOs that are also chairs of the board, earn higher compensation. The coefficient is also economically strong. When the CEO serves as the board chair, his/her compensation is 41.20% higher. High economic significance of this coefficient shows that CEOs extract a substantial rent when they occupy the chair position in the board of directors.

Among the control variables, size is significant but ROA is not. A 1% increase in the firm size leads to 20.8% increase in CEO's cash compensation in our sample.

## 6. Further specifications

Thus far, our analysis used the total cash pay as the proxy for CEO compensation. In a further specification, we use the sum of cash and equity-based compensation as the proxy for CEO compensation. Our measure for equity-based compensation is the sum of fair value of stock options and stock awards awarded to CEOs. We collect option and stock data from the annual proxy reports (DEF-14) of our sample companies for the years 2002–2008. We expect that our predictions hold after this specification in the dependent variable. We re-estimate Eq. (1) with the new dependent variable. Consistent with the first test, we use a logarithmic transformation of the new dependent variable to correct heteroskedasticity inherent in the data. *OutPerc* and *lnSales* remain significant with

similar signs. However, CEO duality is no longer significant. Firm performance (ROA) is significant in the total compensation regression. This indeed explains that when the compensation includes equity-based compensation, managers put much effort to increase the performance of the company (see Table 4).

As an extension to our main analysis, we also run two sets of regression where we include the firm specific effect and year effect dummies in the analysis. One could argue that there might be firm specific, time invariant effects that indeed lead to changes in the compensation. Ignoring these firm specific effects might lead one to overemphasize the effect of other variables included in the regression. With the firm fixed effects included in our model, the variation within firms is not sufficient to identify the effects of board characteristics on the compensation. Given that we have a heterogeneous group of companies and that we are concerned with the small sample size, we do not include firm specific effects in our main analysis. One could also be concerned about the year effect. Without controlling for the year effect, our model ignores any macro-level changes over the years that may well affect the compensation over the years. To control for that, we include a year dummy as well and re-run the original model. We find a significant year effect. When we include year dummies, outside percentage and firm size are still important determinants of the compensation, whereas the CEO duality becomes insignificant.

## 7. Discussion and conclusion

We examined the effect of board control on the CEO compensation level for the US lodging firms spanning a period between 2002 and 2008. Our results showed that board size is not a determinant of CEO compensation level for lodging firms. This finding is contrary to the findings of Core et al. (1999), Talmor and Wallace (2000), Cahan et al. (2005), and Ghosh and Sirmans (2005). Our insignificant finding indicates that there may be different determinants of CEO compensation across industries. Even though we use a similar approach as in previous research, we ended up with an insignificant relationship between board size and CEO compensation.

One would also expect to observe tightened compensation levels for the firms that employ a board of directors with higher outside member representation. However, our findings suggest an opposite picture for the U.S. lodging industry. It seems that CEOs enjoy more compensation when their companies' boards of directors encompass more outside board members. As discussed earlier, for the companies where the CEO holds the chair position in the board of directors, the CEO may use that power to select outside members into the board that he/she believes will favor his/her compensation. In addition to outside membership, we also examined the possible effects of busy directors and old directors on CEO compensation level. None of these variables explains the variation in CEO's compensation. Based on our findings, 38% of the CEOs in our sample also held the board chair position, and being the chair of the board significantly increases the cash compensation they earn. Even though we expected a stronger effect on total compensation, we did not observe this effect.

In summary, we found both opposing and confirming results to the previous studies, further strengthening the need to continue conducting studies of the lodging industry. We provided evidence to the board composition – CEO compensation literature from the U.S lodging industry. Although the industry is large in business volume, data are limited to the companies that are publicly traded. Our findings are, therefore, limited in this sense. To overcome this problem, a larger time-period can be used to get larger time-series data. To increase the knowledge in this area, future researchers might consider examining the effect of other phenomenon on the CEO compensation. For instance, inclusion of ownership

structure (institutional, individual etc.) into this analysis is important. Previous research (Core et al., 1999) has shown that ownership structure is an important determinant of CEO compensation. Firms that have varying degree of institutional vs. individual investors might reward CEOs differently. Board independence, which is the focus of this study, is an important governance quality to control CEO actions and monitor the well-functioning of the organization. Other governance qualities like ownership structure and governance index (G-index) could also be examined so as to see whether the governance control does really matter in setting CEO compensation contracting. Moreover, further research can examine whether CEO turnover may affect this relationship. In addition to this empirical analysis with archival data, a survey analysis of board of directors of selected companies can provide first hand insight from the industry. Obviously, our findings are limited to U.S. lodging industry. For further analysis, international data might be very helpful to shed light on the board structure-executive compensation phenomenon at a global level.

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