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# Origin of CEO and Compensation Strategy: Differences between Insiders and Outsiders

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## **Abstract**

Increasingly, U.S. firms are hiring their new CEOs from outside the firms. This study investigates the differences in compensation between outsider CEOs and insider CEOs from three dimensions: pay level, pay and performance link, and pay mix. Our analyses show: (1) outsider CEOs are paid more than insider CEOs, (2) pay and performance link is very weak for outsider CEOs, and (3) compensation package for outsider CEOs emphasizes the use of stock options. While several factors (e.g., firm size, firm performance, CEO tenure, ownership structure) influence insider CEOs' pay, firm size is the only determinant of outsider CEOs' pay. Our results suggest we will be able to understand CEO compensation more accurately if we analyze CEOs from different origins (insiders, outsiders, founders) separately.

## **Keywords**

firms, outside, compensation, pay, performance, insider, CEO, stock, tenure, ownership

## **Comments**

### **Suggested Citation**

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# Origin of CEO and Compensation Strategy: Differences between Insiders and Outsiders

Yoshio Yanadori  
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Working Paper 02 - 03



# **Origin of CEO and Compensation Strategy: Differences between Insiders and Outsiders**

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This paper has not undergone formal review or approval of the faculty of the ILR School. It is intended to make results of Center research available to others interested in preliminary form to encourage discussion and suggestions.

**Abstract**

Increasingly, U.S. firms are hiring their new CEOs from outside the firms. This study investigates the differences in compensation between outsider CEOs and insider CEOs from three dimensions: pay level, pay and performance link, and pay mix. Our analyses show: (1) outsider CEOs are paid more than insider CEOs, (2) pay and performance link is very weak for outsider CEOs, and (3) compensation package for outsider CEOs emphasizes the use of stock options. While several factors (e.g., firm size, firm performance, CEO tenure, ownership structure) influence insider CEOs' pay, firm size is the only determinant of outsider CEOs' pay. Our results suggest we will be able to understand CEO compensation more accurately if we analyze CEOs from different origins (insiders, outsiders, founders) separately.

## **Origin of CEO and Compensation Strategy: Differences between Insiders and Outsiders**

Compensation for Chief Executive Officers (CEOs) has long been at the center of public attention. Major business publications (e.g., Business Week, Forbes) and research institutions (e.g., Conference Board) compile special reports of CEO compensation every year. The AFL-CIO created a web site critical of CEO compensation practices. It offers interactive comparisons of the difference between the compensation of specific companies' CEOs and their employees. Business publications claim that the link between company performance and CEO compensation does not justify CEO pay. For example, Business Week (1997a) states that CEO pay is "out of control," following that "many companies make exorbitant payouts for so-so performances, dilute real shareholder return, and glorify CEOs at the expense of other employees." Despite the recent slowdown in U.S. economy, executive pay "continues to explode" (Business Week, 2001), and thus the public has the impression that executive pay is unfair and unjustifiable. Colvin (2001) was even more cynical stating "executive compensation has become highway robbery - we all know that. But how did it happen?"

CEO compensation in the United States has also long been the subject of research (Barkema & Gomez-Mejia, 1998). Earlier studies typically devoted their efforts to finding the determinants of CEO pay. These studies show organization size is one of the major influences on the level of CEO compensation (Agarwal, 1981; Baker, Jensen, & Murphy, 1988; Roberts, 1957). Researchers have made the greatest effort in studying the relationship between firm performance and CEO pay level. Empirical studies generally found a weak, positive relationship between the level of CEO cash compensation and organizational performance (Jensen & Murphy, 1990; Murphy, 1985). More recent studies turned their attentions to governance or contingency factors (Barkema & Gomez-Mejia, 1998). Concerning governance factors, studies report ownership structures (e.g., David, Kochhar, & Levitas, 1998; Werner & Tosi, 1995) and

compositions of board of directors (e.g., Westphal & Zajac, 1995) are influential to the level of CEO compensation. Other researchers show certain contingency factors such as the firm's degree of diversification (Rajagopalan & Prescott, 1990) and internationalization (Sanders & Carpenter, 1998) are positively related to the level of CEO compensation.

Paralleling the interest in how much CEOs are paid, the questions about who gets selected as new CEOs attract public attention. Numerous stories were reported in business press concerning the recent CEO succession at General Electric. The former CEO, Jack Welch selected a few candidates for his successor, and had them compete for the nomination for the next CEO. Upon making the decision to choose Jeffrey Immelt as his successor, Jack Welch urged other candidates to depart the firm. However, the departed candidates were not merely losers; they were subsequently invited to Home Depot and 3M as new CEOs.

Among the issues in CEO succession, the origin of new CEOs (whether they are promoted from within, or hired from outside) is one of the most frequently reported topics. Business magazines repetitively discuss the possibility of a firm's hiring outsider CEOs when the retirement of incumbent CEOs is expected. For example, Fortune (1999a) reported the possibility of Hewlett-Packard's choosing a new CEO from outside the company when the retirement of incumbent CEO was imminent. Even for the CEO succession at General Electric, an article referred to the potential choice of selecting an outsider CEO (Fortune, 1999b). While U.S. firms have traditionally promoted their new CEOs from within (Finkelstein & Hambrick, 1996; Vancil, 1987), the recent trend is that firms are more likely to hire executives from the outside (Business Week, 1997b).

Similar to compensation, questions about the origin of CEOs have long attracted researchers (Kesner & Sebora, 1994). Some studies investigated what causes firms to hire outsider CEOs rather than promoting insiders (e.g., Cannella & Lubatkin, 1993; Pfeffer & Salancik, 1977), and other studies examined the difference in subsequent organizational

performance between firms that hired new CEOs from outside and those which promoted new CEOs from within (e.g., Beatty & Zajac, 1987; Zajac, 1990).

In spite of researchers' long interest in both CEO compensation and origin of CEO, only limited research attempt has been made to understand if there is any relationship between these two topics. This is not to say research has neglected possible differences in compensation between insider CEOs and outsider CEOs. Several studies did include the origin of CEO in the analysis of CEO compensation. A study observed insider school superintendent successors were paid less (Carlson, 1961). Deckop (1988) examined the difference in pay level among CEOs from different origins, and reported that outsider CEOs received significantly greater cash compensation than insider CEOs, and both insiders and outsiders received more than company founder CEOs. Similarly, Gomez-Mejia, Tosi, and Hinkin (1987) included origin of CEO variable in estimating CEO pay level, but failed to find significant difference in total pay between insider CEOs and outsider CEOs. They also estimated the ratio of bonus to total pay and that of long-term incentives to total pay, and reported the ratio of bonus to total pay was higher for outsider CEOs than insider CEOs in management-controlled firms. In the analysis of the pay gap between CEOs and other executives, Henderson and Fredrickson (2001) included the origin of CEO in their estimation models, and reported pay gap was significantly bigger in firms whose CEOs were outsiders.

Although these research findings were informative, theoretical importance for including CEO origin variables in CEO compensation research has yet to be developed. Past studies generally included origin of CEO as one of several control variables except for Deckop (1988) and Gomez-Mejia et al. (1987), which treated origin of CEO as a possible major factor influential to CEO compensation. We believe the recent trend of increasing outsider CEOs increased the importance to investigate if there is any systematic difference in compensation between insider CEOs and outsider CEOs. Is Robert Nardelli, Home Depot's newly appointed CEO, paid differently from other new CEOs appointed in the same period? Does his pay differ from what it



would be if Home Depot had chosen its new CEO from within the firm? The primary purpose of this study is to answer these questions. Using the compensation data for CEOs in Fortune 500 companies, we examine how the origin of CEO is associated with CEO compensation.

The principal contributions of this study are threefold. First, we extend related theoretical works, particularly agency theory and managerialism to include origin of CEO in CEO compensation research. Second, we examine the differences in CEO compensation systems from three dimensions: (1) pay level, (2) pay and performance link, and (3) pay mix. While the difference in pay level between insiders CEOs and outsider CEOs were already recognized by the past research (e.g., Deckop, 1988; Gomez-Mejia et al., 1987), the other two dimensions have been underdeveloped. We pay closer attention to pay mix variables. Our analysis shows the relationships between origin of CEO and CEO pay mix is influenced by measures used. Finally, our data are the most recent information on CEO compensation. Given the recent trend of increasing outsider CEOs, the analysis using latest data may offer new insights for the relationship between CEO succession and CEO compensation. In addition, considering the recent dramatic increase in CEO compensation, it is meaningful to see whether the conventional determinants based on the past research (e.g., size, performance, tenure, ownership) really "determine" recent CEO compensation.

## **THEORY AND HYPOTHESES**

Research on CEO compensation has traditionally focused on its pay level. Even now, virtually all empirical studies that examine CEO pay begin by discussing pay level. One good example is the April 1998 issue of the Academy of Management Journal, which featured managerial compensation and contained six empirical studies. While each studies analyzed CEO compensation from different angles, all six studies examined the level of CEO compensation. Three articles (Daily, Johnson, Ellstrand, & Dalton, 1998; Ezzamel & Watson, 1998; Finkelstein & Boyd, 1998) basically focused only on pay level. Two articles (David et al.,

1998; Sanders & Carpenter, 1998) examined pay mix in addition to pay level. One (Conyon & Peck, 1998) examined pay and performance link as well as pay level. This example illustrates the dominance of pay level as the most important dimension of CEO compensation.

In investigating the determinants of the level of CEO pay, researchers have been frustrated with the weak relationship between firm performance and CEO pay. Based on normative agency model (Jensen & Meckling, 1976), researchers expected stockholders should align CEO pay with firm performance to elicit the CEOs' efforts to increase firm performance. Nevertheless, past research often reported only weak or even insignificant relationship between CEO pay and firm performance (Barkema & Gomez-Mejia, 1998). Jensen and Murphy (1990) reported that CEOs received only \$3.25 for every \$1,000 increase in shareholders' wealth. By the late 1990s', when equity-based compensation (i.e., stock options, stock grants) became an important part of CEO compensation package, researchers re-examined the link between firm performance and CEO pay which included the value of equity-based compensation. For example, Hall and Liebman (1998) reported 10 percent increase in firm value was associated with the increase in CEOs' wealth by about 1.25 million dollars if the change in the value of the firms' stock owned by the CEOs were taken into account. However, as far as CEO pay (not CEO wealth) is concerned, pay and performance link is still weak even if equity based compensation is included. Recently, Tosi, Werner, Katz, and Gomez-Mejia (2000) reviewed past empirical research, and conducted meta-analysis on CEO pay and firm performance link. Their analysis showed less than 5 percent of the variance of CEO pay was explained by firm performance. Based on this weak pay and performance link, Tosi et al. (2000) suggested that moderator variables (e.g., ownership structure, industry) might play an important role. Because they could not statistically verify what variables really moderate CEO pay and performance link, further development of research on CEO pay and performance link is left for future researchers.

Increasingly, recent studies recognize employee compensation packages include many forms such as base pay, bonus, stock options, and benefits (Sanders & Carpenter, 1998), which

induces researchers to investigate how organizations mix different pay forms. Generally these studies relied upon agency theory (Eisenhardt, 1989; Jensen & Meckling, 1976), and focused on the relative importance of incentives in executive compensation package. Their specifics varied across studies, and the findings are complicated. Studies have reported relative importance of incentives depends on various factors such as ownership structures (David, Kochlar, & Levits, 1998; Tosi, & Hinkin, 1987; Werner & Tosi, 1995), risk (Beatty & Zajac, 1994; Bloom & Milkovich, 1998), prior firm performance (Abowd, 1990) as well as firm size and performance (e.g., Gerhart & Milkovich, 1990; Gomez-Mejia et al., 1987). Past research shows firms have more discretion regarding how they pay than regarding how much they pay (Gerhart & Milkovich, 1990), and thus pay mix issue is another critical dimension of CEO compensation.

### **Difference in Pay Level between Insiders and Outsiders**

As we mentioned earlier, a few empirical studies have already examined the relationship between origin of CEO and compensation. Deckop (1988) showed outsider CEOs were paid more in terms of cash compensation. He explained CEOs promoted from within companies ask for less compared with those hired from the outside because insiders evaluate the status attached to the promotion. In a study comparing the compensation between incumbent CEOs and their predecessors, Hambrick and Finkelstein (1995) reported outsider CEOs were paid more than their predecessors, whereas there was not a significant difference between insider CEOs and their predecessors. They explained outsiders face a substantial risk of failure and encounter personal and family cost in a move, and thus companies have to compensate for this risk and cost.

Taken these past studies together, we argue compensating wage differential theory (Ehrenberg & Smith, 2000) offers solid explanations for the difference in pay level between insider CEOs and outsider CEOs. Outsider CEOs will face greater uncertainty because they have less information about the new firms as compared with insider CEOs who have been in

their firms for years. If outsider CEOs perceive greater performance uncertainty than insider CEOs, firms have to pay greater premiums for outsider CEOs.

Moreover, in making decisions whether to accept the offer, outsiders will pay greater attention to market pay level to evaluate their compensation package. To encourage such outsiders to accept the offer, firms will have to offer pay level that is competitive in executive labor market. In contrast, insiders are more likely to be interested in their success in the promotion tournament, and they are less likely to compare their pay with external market. This difference in market orientation will lead new outsider CEOs to receive more than new insider CEOs. Finally, companies have to provide premiums to compensate for difficulties inherent in changing workplace. Thus,

H1: The pay level for outsider CEOs is higher than insider CEOs.

### **Origin of CEOs and Pay and Performance Link**

Agency theory (Eisenhardt, 1989; Jensen & Meckling, 1976) argues CEO pay should be linked with the interest of shareholders. This theory addresses how the most optimal contract is achieved in situations that principals delegate work to agents in exchange for rewards. Agency theory focuses on two problems associated with this agency relationship: (a) goal conflicts between the principals and agents, and (b) difference in their attitudes toward risks. Essentially, the theory states two alternatives (either behavior-based contract or outcome-based contract) are available for principals, and the principals choose the type of contract taking the cost associated with the two alternatives into account. When principals can observe behaviors of the agents at low cost, they choose behavior-based contract. In this case, the reward is paid as salary rather than incentives. In contrast, when principals cannot monitor the agents at low cost, they choose outcome-based contract, and rewards are paid as incentives linked to the achievement of desired outcomes. Since the rewards vary with performance, incentive alignment transfers performance risk from principals to agents. The agents, who are assumed to

be risk-averse accept such a contract only when adequate risk premiums are offered. In short, the principals choose the type of contract by comparing the monitoring cost with risk premiums involved with incentive alignment. Because top executive's job is less programmable, and it is difficult to specify desired behaviors (Gerhart & Milkovich, 1990), the cost for monitoring CEOs' job incurs greater cost, and consequently the principals (stockholders) are more likely to use incentives. As a result, stockholders align the incentives to CEOs with their interest, specifically with firm performance.

While agency theory suggests CEO pay should be aligned with firm performance, managerialism offers a contrasting view on CEO compensation. It argues if managers' discretion is not constrained, they try to design their pay linked with firm size rather than firm performance (Tosi & Werner, 1995). Tosi et al. (2000) offered three reasons for this tendency. First, because firm size is more controllable than firm performance, CEOs prefer stronger link between firm size and their pay. Second, CEOs actually have little difficulty in justifying strong link between firm size and CEO pay by rationalizing large firm size is associated with (a) increased complexity, (b) increased CEO human capital necessary to run the organization, and (c) increased hierarchical levels. Finally, since CEOs are risk averse, they try to avoid pay systems linked with firm performance, which involve certain performance uncertainty. Because managerialism argues greater managerial discretion enables CEOs to influence their pay systems to be aligned with firm size rather than firm performance, the extent to which CEO pay is associated with firm performance depends on the degree of the CEOs' managerial discretion.

In a comprehensive discussion on managerialism, Hambrick and Finkelstein (1987) proposed that managerial discretion is influenced by several factors such as task environment (e.g., product differentiability, market growth), internal organization factors (e.g., resource availability, internal political conditions), and managerial characteristics (e.g., aspiration level, commitment). Among these factors, empirical studies have typically examined ownership structure as a major internal organization factor that influences managerial discretion (Tosi,

Gomez-Mejia, Loughry, Werner, Banning, Kats, Harris, & Silva, 1999). Such studies generally categorized firms into (a) owner-controlled firms, (b) management-controlled firms, and (c) owner-managed firms according to the firms' stock ownership (Werner & Tosi, 1995). These studies reported CEO pay and performance link is stronger in owner-controlled firms because the existence of influential non-managerial stockholders reduces the latitudes of actions for the CEOs (Gomez-Mejia et al., 1987; Werner & Tosi, 1995).

When insider CEOs and outsider CEOs are compared, we claim that outsider CEOs have more discretion than insider CEOs. Hambrick and Finkelstein (1996) described the issue of insiders versus outsiders in CEO succession is a variation of the issue of continuity versus change. According to them, one main reason for choosing outsider CEOs is that the firms need some changes. CEO selection committee expects outsiders can change their way of doing business more easily than insiders, who often took part in the previous decision makings while they were managers. Thus, new outsider CEOs are generally entitled to have stronger discretion to change existing business strategies or corporate cultures. In contrast, the discretion of insider CEOs is often constrained by existing business strategies and corporate cultures developed by their predecessors. For instance, Jeffrey Immelt, chosen by Jack Welch as his successor may be less willing to change what Jack Welch has done before. Thus, we argue outsider CEOs have more discretion than insider CEOs, and consequently pay for performance link is weaker for outsider CEOs.

H2: Pay for performance link is weaker for outsider CEOs than insider CEOs.

### **Difference in Pay Mix between Insiders and Outsiders**

Agency theory is a dominant theory in pay mix research. As we already discussed, the theory states principals will choose the form of compensation (either salary or incentives) by comparing monitoring cost with risk premiums involved with incentives alignment (Eisenhardt, 1988). If principals can monitor the behavior of the agents at low cost, they choose salary. In

contrast, when principals cannot monitor the agents at low cost, they choose incentives. In short, the choice of an appropriate pay forms depends on the monitoring cost of the agents' behaviors.

While the degree of monitoring difficulty generally depends on the nature of the job (Eisenhardt, 1988) or job responsibility (Gerhart & Milkovich, 1990), it is also affected by the amount of information that the principals hold on the agents' abilities. As principals accumulate the information on the abilities of the agents, the predictability of the agents' behavior increases, and the monitoring cost decreases consequently (Murphy, 1986). In this case, principals are more likely to choose salary rather than incentives. When available information is compared between insider CEOs and outsider CEOs, the principals have more information about the abilities of insider CEOs, who have been in companies before promotion. Accordingly, cost of monitoring outsider CEOs' will be more expensive than that of monitoring insider CEOs. The difference in monitoring cost suggests principals are more likely to use outcome-based compensation for outsider CEOs than insider CEOs. Based on agency theory argument, we claim pay mix for outsider CEOs will be characterized by stronger emphasis on incentive forms as compared with pay mix for insider CEOs.

In contrast, managerialism suggests pay mix for outsider CEOs will indicate less emphasis on incentives than insider CEOs. Because CEOs are risk-averse, they try to avoid variable pay, which transfers risk from stockholders to CEOs. Therefore, CEOs with greater discretion will try to influence their pay packages to have less emphasis on incentives. As we already discussed, we argue outsider CEOs have more discretion than insider CEOs. Based on managerialism discussion, pay mix for outsider CEOs will be characterized by weaker emphasis on incentives. As a result, we have two competing hypotheses concerning the difference in pay mix between insider CEOs and outsider CEOs.

H3a: Agency theory prediction is that pay mix for outsider CEOs will indicate stronger emphasis on incentives as compared with the pay mix for insider CEOs.

H3b: Managerialism prediction is that pay mix for outsider CEOs will indicate weaker emphasis on incentives compared with the pay mix for insider CEOs.

It is possible that two different forces cancel out each other, which will result in insignificant difference in pay mix between insider CEOs and outsider CEOs. However, CEO compensation package consists of several forms of incentives (e.g., bonus, stock options, restricted stock grant), and thus some incentives may be more emphasized in outsider CEOs' compensation (consistent with agency theory prediction), and other incentives may be less emphasized in it (consistent with managerialism prediction).

## **METHODS**

### **Sample**

To test our hypotheses, we collected data on compensation for CEOs in Fortune 500 companies (2000). Compensation data on CEOs came from COMPUSTAT's Execucomp service, which compiles compensation data from firm proxy statement. Firm accounting and financial data were obtained from COMPUSTAT data file. We excluded the CEOs who were appointed during the fiscal year 2000 from our sample because their compensation may not be an annual base. Moreover, compensation data for outsider CEOs, who were appointed during the fiscal year 2000 may include assigning bonus. Because we are interested in the systematic difference in compensation between insider CEOs and outsider CEOs, excluding these data is consistent with the purpose of our research. Our collection effort yielded 321 firms with usable data for the analysis.



**Measures**

**Dependent variables.** COMPUSTAT's Execucomp offers the information on the amount of different pay forms paid to CEOs (base pay, bonus, stock options, restricted stock grant, long-term incentive plans, and others). For the pay level measure, we used the total of all forms of compensation paid to CEOs. The value of equity-based compensation was calculated by Black-Scholes model. To reduce heteroskedasticity in our regression models, we applied a logarithmic transformation.

Measurement used to test the difference in pay mix needs greater attention since past research examining pay mix has employed different measures. A common method of examining pay mix is to measure the ratio of bonus to base pay (e.g., Gerhart & Milkovich, 1990; Werner & Tosi, 1995). Others use the ratio of bonus to total pay (e.g., Anderson, Banker, & Ravindran, 2000; Gomez-Mejia et al., 1987) and the ratio of long-term incentives to total pay (e.g., Westphal 1999; Westphal & Zajac, 1995; 1997). Some looked at the relative importance of individual incentive forms (e.g., bonus, stock options), but others examined the relative importance of total incentives. Although almost all of these empirical studies used agency theory for their theoretical framework, the employed measures disagreed. In general, past studies did not discuss the validity of employed pay mix measures extensively, and some studies did not even provide the discussion on this issue. Indeed, agency theory is virtually silent as to what should be used as the numerator (individual incentives or total incentives) and denominator (i.e., base pay or total pay) in developing pay mix measures, and thus it is not clear how these different measures describe CEO pay mix in a different way. Given the circumstances, we decided to use multiple measures and compare the results using different measures. Considering the measures used in the past studies, we developed six CEO pay mix measures: (1) bonus/base pay, (2) bonus/total pay, (3) stock options/base pay, (4) stock options/total pay, (5) total incentives/base pay, and (6) total incentives/total pay. Total incentives are the sum of bonus, restricted stock grant, stock options, and long-term incentives. Examining relative

importance of bonus and that of stock options separately is meaningful because we have two competing hypotheses concerning the difference in pay mix, and the results may differ depending on what pay mix measures we use. Although examining what measure is the most appropriate (e.g., for agency theory, for managerialism) is beyond the scope of this paper, we expect some variations in the results depending on pay mix measures used. Because their distributions were skewed, we applied a logarithmic transformation (David, et al, 1998; Zajac & Westphal, 1994).

**Independent variables.** The definition of outsider CEOs varies across studies (Finkelstein & Hambrick, 1996; Kesner & Sebor, 1994). Some studies define insider CEOs as those who are promoted from within the firms, and outsider CEOs as any others (Boeker & Goodstein, 1993). Others define outsiders as those whose tenure in the firms is less than five years before appointed as CEOs (Datta & Guthrie, 1994). Among these variable definitions, the most commonly used definition of outsiders in CEO succession research is Cannella and Lubatkin (1993). They define outsiders as those who have less than two years of tenure in the firm before being appointed as CEOs. We adopted their definition, and used two years as the cutoff point to distinguish outsider CEOs from insider CEOs. As well as outsider CEOs and insider CEOs, we developed another category of CEO origin: company founder CEOs because their pay system may be different from insiders and outsiders. Accordingly, we created two dummy variables corresponding to outsider CEOs and company founder CEOs. Insider CEOs are the reference group.

**Control variables.** We included several control variables. CEO compensation researchers agree organizational size is one of the major determinants of the level of CEO compensation. Past research also suggests organization size is associated with pay mix (Bloom & Milkovich, 1998). We used the logarithm of the number of employees as a proxy for firm size. Similarly,

organization performance was included in our estimation model. Concerning the pay mix, the better performance is possibly associated with larger bonus, which may cause higher pay mix ratios whose numerators include bonus. As a proxy for organization performance, we used firms' ROA. We lagged ROA by one year, and thus we used firms' ROA in 1999. As we discussed, past studies suggest ownership structure also influences both CEO pay level and pay mix. Following the approach used by Werner and Tosi (1995), we classified firms into three categories based on the distribution of stock ownership: (a) management-controlled firms, (b) owner-controlled firms, and (c) owner-managed firms. Owner-controlled firms were those in which at least one non-managerial stockholder possessed 5% or more of the firms' stock. The other firms were designated as management-controlled firms unless at least one of the executives owned 5% or more of the firms' stock, which were designated as owner-managed firms. Consequently, we created dummy variables that correspond to owner-controlled firms and owner-managed firms. Organization performance risk also needs to be controlled because research showed performance volatility was associated with the relative importance of bonus (Bloom & Milkovich, 1998). We used coefficient of variations of companies' ROA in the previous 10 years. We included CEO tenure measured in years because it is associated with the strength of CEOs' political influence as well as their firm specific human capital. Past research reported it affected both the level of CEO pay (Hambrick & Finkelstein, 1989) and pay mix (Hill & Phan, 1991). We applied a logarithmic transformation because the distribution of tenure was skewed. Finally, to control for industry-related factors, we categorized industry based on the division structure in Standard Industrial Classification (SIC) system, which classifies U.S. firms into 8 categories. Accordingly, we created 7 dummy variables corresponding this classification.

**Model Estimation**

To test our Hypotheses, we estimated this model:

$$\begin{aligned}\text{CEO Compensation} = & B_0 + B_1(\text{number of employees}) + B_2(\text{ROA}) + B_3(\text{tenure as CEO}) + \\ & B_4(\text{owner-controlled}) + B_5(\text{owner-managed}) + B_6(\text{risk}) + \\ & B_7(\text{outsider CEO}) + B_8(\text{founder CEO}) + B_{9-15}(\text{industries}).\end{aligned}$$

Our main interest is whether there is any differences in compensation between insider CEOs and outsider CEOs. Concerning the differences in pay level and pay mix, significance of the coefficient of outsider CEO ( $B_7$ ) shows there is a statistically significant difference in compensation between outsider CEOs and insider CEOs. With regard to pay and performance link, we estimate the pay levels of insider CEOs and outsider CEOs separately, and compare coefficients of performance ( $B_2$ ).

**RESULT**

Table 1 contains a summary of descriptive statistics for all our variables, along with their intercorrelations. It shows 20 % of the CEOs are hired from outside the firms. Insider CEOs are still majority in Fortune 500 firms; 73 % of the firms are insider CEOs. Firms managed by insider CEOs perform better than firms managed by insider CEOs ( $p = 0.02$ ), whereas size does not differ between firms with insider CEOs and those with outsider CEOs. Table 2 reports the results for our tests of the difference in pay level (Hypothesis 1) and pay for performance link (Hypothesis 2) between insider CEOs and outsider CEOs. The first column of the Table 2 reports the result of ordinary least square model that estimates the level of CEO pay using all samples ( $N = 321$ ). As we hypothesized, outsider CEOs were paid significantly greater than insider CEOs. Consistent with prior research, both firm size and firm performance were positively associated with the level of CEO pay. The result also shows CEOs in owner-

controlled firms were paid significantly less than management-controlled firms, which was also consistent with Werner and Tosi (1995).

The second and third columns of the Table 2 report the results of two ordinary least square models that estimate the level of CEO pay using the firms with insiders CEOs (N = 235) and the firms with outsider CEOs (N = 63). As we hypothesized, pay and performance link was weaker for outsider CEOs than insider CEOs. While performance was not significantly related to the pay level of outsider CEOs, firm performance was positively associated with the pay level of insider CEOs. In addition, comparison of the coefficients of firm size suggests the effect of firm size was substantially greater for outsider CEOs (0.63) than insider CEOs (0.22). Instead, the control variables (e.g., CEO tenure, ownership) were all insignificant for the model estimating outsider CEOs' pay except for industry dummies. In fact, as far as outsider CEOs are concerned, the model using firm size and industry dummy variables fits better than the reported model (adjusted R-square = 0.361).

We suspected it might be just because firms did not align the pay for new outsider CEOs' with firm performance for the first few years because new outsider CEOs are not accountable for the past firm performance. To test this idea, we estimated the outsider CEOs' pay level using only those whose tenure as CEO was five years or longer. If insignificant relationship between CEO pay and firm performance for outsider CEOs is attributed to newly hired CEOs, the model using outsider CEOs with longer tenure will exhibit a significant relationship between CEO pay and firm performance. However, the result does not differ from our original result reported in Table2; the relationship between outsider CEOs' pay and firm performance was not statistically significant (N = 31,  $p < 0.27$ ). In short, our analysis confirms our discussion that the compensation for outsider CEOs is weakly associated with firm performance. Thus, hypothesis 2 was supported.

**TABLE 1**  
**Descriptive Statistics and Correlations**

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. CEO total pay*	15.75	1.06														
2. Bonus/base pay*	0.91	1.42	0.40													
3. Bonus/total pay*	0.16	0.12	-0.15	0.29												
4. Stock options/base pay*	1.55	1.70	0.63	0.79	-0.18											
5. Stock options/total pay*	0.34	0.20	0.46	0.06	-0.44	0.58										
6. Variable pay/base pay*	2.06	1.63	0.69	0.88	-0.04	0.95	0.38									
7. Variable pay/total pay*	0.55	0.14	0.63	0.27	0.09	0.47	0.59	0.53								
8. Number of employees*	10.32	1.19	0.22	0.02	-0.06	0.09	0.08	0.09	0.08							
9. ROA	5.31	5.41	0.12	0.06	-0.07	0.18	0.17	0.15	0.11	0.14						
10. CEO tenure*	1.70	0.90	0.15	0.08	0.15	0.03	0.00	0.04	0.05	-0.09	0.02					
11. Owner-controlled firm	0.72	0.44	-0.19	-0.08	-0.02	-0.12	-0.06	-0.14	-0.11	0.02	-0.13	-0.08				
12. Owner-managed firm	0.02	0.12	-0.03	-0.01	0.07	-0.02	-0.09	-0.02	-0.06	-0.00	0.19	0.05	-0.20			
13. Risk	1.81	6.33	-0.03	-0.03	-0.06	-0.06	-0.12	-0.04	-0.13	-0.02	-0.07	-0.06	0.05	-0.03		
14. Outsider CEO	0.20	0.40	0.06	-0.01	0.04	-0.00	0.03	0.00	0.03	0.02	-0.13	-0.07	-0.01	0.06	0.20	
15. Founder CEO	0.07	0.26	0.06	0.14	-0.07	0.20	0.15	0.16	0.01	-0.06	0.08	0.32	-0.02	0.16	0.03	-0.14

1. N = 321. Correlations greater than 0.11 indicate  $p < 0.05$ .

2. \* indicates the variables are in logarithm.

**TABLE 2**  
**Results of OLS Regression Analysis of CEO Compensation Level**

Variable	Origin of CEOs		
	All CEOs	Insider CEOs	Outsider CEOs
Employee (logarithm)	<b>0.29***</b> (0.05)	<b>0.22***</b> (0.05)	<b>0.63***</b> (0.13)
ROA	<b>0.03**</b> (0.01)	<b>0.05***</b> (0.01)	0.02 (0.03)
CEO tenure (logarithm)	0.12+ (0.06)	<b>0.15*</b> (0.07)	0.13 (0.13)
Owner-controlled firm	<b>-0.29*</b> (0.13)	-0.18 (0.13)	-0.35 (0.28)
Owner-managed firm	-0.81+ (0.46)	<b>-2.55**</b> (0.94)	-0.29 (0.72)
Risk	-0.00 (0.01)	-0.00 (0.02)	-0.01 (0.01)
Outside CEO	<b>0.32*</b> (0.14)		
Founder CEO	0.34 (0.23)		
Intercept	<b>12.83***</b> (0.65)	<b>13.22***</b> (0.64)	<b>9.10***</b> (1.62)
N	321	235	63
Adjusted R-square	0.198	0.240	0.353
F-statistics	<b>5.95***</b>	<b>6.27***</b>	<b>3.82***</b>

1. + < .10, \* < .05, \*\* < .01, \*\*\* < .001

2. Industry dummies were also added to the analyses.

3. Founder CEOs were also analyzed (N = 23). None of the variables was significant (F=0.63, p = 0.77).

Table 3 reports the results for our test of the difference in pay mix between insider CEOs and outsider CEOs. Concerning the relative importance of bonus (first and second columns), there is no significant difference between insider CEOs and outsider CEOs. With regard to the difference in the relative importance of stock options (third and fourth columns), the ratio of stock options to total pay is significantly greater for outsider CEOs while the ratio of stock options to base pay is not significantly different. The greater ratio of stock options to total pay for outsider CEOs supports our hypothesis based on agency theory (hypothesis 3a). Concerning the relative importance of variable pay (fifth and sixth columns), we could not obtain significant difference between insider CEOs and outsider CEOs though the difference in the ratio of variable pay to total pay was close to significance ( $p = 0.076$ ). In summary, we could confirm significant difference only in the ratio of stock options to total pay using six different pay mix variables.

In contrast, the difference between insider CEOs and founder CEOs were more robust; four of six models indicate significant difference. Results show ratio of bonus to base pay, ratio of stock options to both base pay and total pay, and ratio of variable pay to base pay for founder CEOs were significantly greater than those for insider CEOs. Concerning other control variables, firm performance was positively related to the relative importance of stock options (stock options/base pay, stock options/total pay) and that of variable pay (variable pay /base pay, variable pay/total pay). Risk was negatively related to the ratio of stock options to total pay and the ratio of variable pay to total pay. As a whole, none of the independent variables were consistently significant across six models that employed different pay mix measures, which supports our discussion how pay mix is measured makes difference



**TABLE 3**  
**Results of OLS Regression Analysis of CEO Pay Mix**

Variable	<u>Bonus</u>	<u>Bonus</u>	<u>Stock Options</u>	<u>Stock Options</u>	<u>Variable pay</u>	<u>Variable pay</u>
	Base pay	Total pay	Base pay	Total pay	Base pay	Total pay
Employee (logarithm)	0.11 (0.07)	0.00 (0.01)	<b>0.19*</b> (0.08)	0.01 (0.01)	<b>0.21*</b> (0.08)	<b>0.02*</b> (0.01)
ROA	0.02 (0.02)	-0.00 (0.00)	<b>0.06**</b> (0.02)	<b>0.01**</b> (0.00)	<b>0.05**</b> (0.02)	<b>0.00*</b> (0.00)
CEO tenure (logarithm)	0.01 (0.10)	<b>0.02**</b> (0.01)	-0.13 (0.11)	-0.01 (0.01)	-0.09 (0.11)	0.00 (0.01)
Owner-controlled firm	-0.15 (0.19)	0.01 (0.02)	-0.29 (0.21)	-0.02 (0.03)	-0.33 (0.21)	-0.02 (0.02)
Owner-managed firm	-0.72 (0.68)	0.08 (0.06)	-1.47+ (0.78)	<b>-0.26**</b> (0.09)	-1.22 (0.76)	-0.12+ (0.07)
Risk	-0.01 (0.01)	-0.00 (0.00)	-0.02 (0.01)	<b>-0.00*</b> (0.00)	-0.01 (0.01)	<b>-0.00*</b> (0.00)
Outside CEO	0.15 (0.21)	0.01 (0.02)	0.37 (0.24)	<b>0.07*</b> (0.03)	0.32 (0.23)	0.04+ (0.02)
Founder CEO	<b>0.91**</b> (0.34)	-0.06+ (0.03)	<b>1.66***</b> (0.39)	<b>0.16***</b> (0.05)	<b>1.31***</b> (0.38)	0.03 (0.03)
Intercept	-0.14 (0.96)	0.16+ (0.08)	-0.22 (1.10)	0.19 (0.13)	0.17 (1.07)	<b>0.41***</b> (0.09)
Adjusted R-square	0.019	0.034	0.098	0.084	0.081	0.069
F-statistics	1.38	<b>1.71*</b>	<b>3.16***</b>	<b>2.82***</b>	<b>2.77**</b>	<b>2.47***</b>

1. Standard errors are in parentheses. N = 321.

2. + < .10, \* < .05, \*\* < .01, \*\*\* < .001

3. Pay mix variables are in logarithm.

## **DISCUSSION**

This study proposed to study the difference in compensation between outsider CEOs and insider CEOs. We investigated the difference in their compensation from three dimensions: pay level, pay and performance link, and pay mix. Our analyses showed (1) outsider CEOs are paid more than insider CEOs, (2) pay and performance link is weaker for outsider CEOs, and (3) compensation package for outsider CEOs emphasizes the use of stock options measured as the ratio of stock options to total pay.

Concerning the difference in pay mix between insider CEOs and outsider CEOs, we observed the ratio of stock options to total pay was greater for outsider CEOs. Some may argue firms are more likely to grant options for outsider CEOs because they own their firms' stock less than insider CEOs, who have already been granted large options before they were promoted. Although not reported here, we also conducted an analysis that examined the difference in the absolute value of stock options grants between insider CEOs and outsider CEOs. Our analysis shows no significant difference between insider CEOs and outsider CEOs ( $p = 0.64$ ). Therefore, it is not that outsider CEOs were granted greater amount of stock options, but that their compensation was characterized by strong emphasis on stock options.

Our analysis on pay mix offered a partial support for agency theory prediction, which argued pay mix for outsider CEOs would indicate stronger emphasis on incentives. We found the relative importance of stock options (measured as the ratio to total pay) was significantly greater in outsider CEOs' compensation than insider CEOs' compensation. In contrast, the relative importance of bonus (either bonus/salary or bonus/total pay) was not significantly different between insider CEOs and outsider CEOs. These results may be attributed to the difference in CEOs' perception of risks attached to different forms of incentives. CEOs may perceive less risk with stock options than with bonus because (a) even if the stock price drops, firms may reprice the options, and (b) greater stock price volatility increases the value of stock options using Black-Scholes pricing model (Gerhart, 2000). Therefore, CEOs may be less

reluctant to accept compensation package that emphasizes stock options. They would rather perceive stock options are more desirable to increase their wealth especially when stock market is growing. Consequently, outsider CEOs, who reserve greater managerial discretion, may manipulate their pay package to emphasize stock options aiming to increase their wealth. In contrast, CEOs may be more reluctant to accept bonus because they perceive greater risk with it. Accordingly outsider CEOs try to influence their compensation package to de-emphasize bonus. Contrary, agency theory argues stockholders are inclined to use bonus for outsider CEOs due to insufficient information on the abilities of outsider CEOs. As a result, these two competing forces may have canceled out each other, and led to insignificant difference in the relative importance of bonus. We do not know how individuals perceive risks to different pay forms, and thus much of this discussion is left for future researchers. In addition, recent decline in stock market may have different effects on the CEOs' attitudes on stock options, which suggests additional analyses using the data in year 2001 or after may offer a different perspective.

While it is not the primary purpose of our study, the different significance level in the coefficients of outsider CEOs suggests how pay mix measures influence the results we obtain. Our hypotheses concerning the difference in pay mix relied on agency theory and managerialism, which has been dominant in compensation research. Nevertheless, researchers have made very little attempt to discuss what pay mix measures are most consistent with these theory. Thus, future researchers need pay more attention to this issue.

One potential problem of our analysis is we did not include some of potentially influential variables (e.g., firm strategy, human capital). Thank to the long history of CEO compensation research, we already have numerable variables that can influence CEO compensation. Indeed, adjusted R-square in our model that estimated pay level using all CEOs (first column of Table2) was 0.198, which was slightly less than the statistics in the recent publications (for example, 0.25-0.26 for Sanders & Carpeters (1998)). However, our following analyses that examined

insider CEOs and outsider CEOs separately resulted in higher adjusted R-squares. Especially, adjusted-R square in the analysis of outsider CEOs (0.353) was substantially high. In addition, effects of control variable differ between insider CEOs and outsider CEOs. Given these results, we believe analyzing CEO compensation with different origin separately may offer us more accurate view on the determinants of CEO compensation.

Though we found outsider CEOs were paid differently from insider CEOs, our knowledge on the determinants of outsider CEOs' pay is still limited. Our regression analysis suggested firm size is the only determinant, but it doesn't necessarily mean there is no other influential factors. For instance, we discussed outsider CEOs have more discretion than insider CEOs because the formers are expected to change existing policies and corporate cultures. However, degree of discretion may differ even within outsider CEOs depending on how they are chosen. Outsider CEOs who were appointed after the dismissal of the predecessors due to unsatisfactory firm performance may have greater discretion than outsider CEOs chosen by the predecessors because they were unsatisfied with existing candidates. Therefore, further analysis on the determinants of outsider CEOs will increase our knowledge in CEO compensation. Moreover, our sample size is relatively small for outsider CEOs ( $N = 63$ ), and thus additional tests using larger sample will be helpful to confirm our results.

In sum, we believe that more must be learned about the relationship between origin of CEO and CEO compensation. Our analyses suggest compensation is different between insider CEOs and outsider CEOs in terms of pay level, pay and performance link, and pay mix. Among all, we have limited knowledge as to how compensation for new outsider CEOs are determined. Further development of research on the compensation for outsider CEOs is necessary.

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