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USING PANEL DATA TO ESTIMATE THE ECONOMIC DETERMINANTS OF CEO COMPENSATION

Mark Gius*

The present study uses the latest data available from ExecuComp in order to estimate an economic model of the determinants of CEO compensation. Examining 975 CEO's over the period 1992-2002, the present study finds that experience had a positive effect on CEO pay, while industry specific dummy variables had little, if any, effect on compensation. Performance measures, such as net income per sales and return on equity, had very little effect on CEO pay. The results of the present study corroborate many anecdotal assertions that CEO pay is not linked to firm performance. However, the results of the present study indicate that experience is one of the most important factors affecting CEO compensation. Gender was not found to play a significant role; however, this result may be due to the fact that less than 2% of the CEOs in the sample used in the present study were women. These results suggest that years of experience may actually play more of role in the determination of CEO pay than how well the CEO manages the firm.

JEL Classification: J33

Keywords: CEO, Compensation

INTRODUCTION

Prior studies on CEO compensation have examined a multitude of factors that may affect executive compensation; some of these factors include the role of the board of directors in setting CEO pay, the effect of firm performance as measured by a variety of instruments on CEO compensation, and the degree to which different industries compensate their executives differently. The present study differs from these prior studies in that it attempts to estimate a more economic approach to the determination of CEO compensation. While many prior studies focused on purely institutional corporate factors, they relegated to a secondary role, or did not consider at all, the economic factors that may affect all incomes, including those of CEO's. The present study focuses much more on the following economic determinants of CEO pay: experience, industrial classification of the firm the CEO manages, and the gender of the CEO. These factors, especially experience, have been found to be extremely important in the determination of wages of other types of workers. It is reasonable to assume that the pay of CEOs will also be affected by these economic factors. Unfortunately, few other studies included these economic factors as explanatory variables in their regressions on CEO pay. The present study will be one of the few that includes these very important economic variables along with

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typical measures of firm performance. The present study will also examine not only the determinants of short-term compensation, such as salaries and bonuses, but also the determinants of long-term compensation, which is primarily equity-based and deferred compensation.

LITERATURE REVIEW

There have been many studies conducted on CEO compensation. The following literature review is in no way intended to be exhaustive of this body of research, but will only highlight some of the more important and relevant research in this area.

One of the earliest studies on CEO compensation was Cisel and Carroll (1980). They used data on CEO pay (salary plus bonus) from 1973 and regressed CEO pay on just profit and sales. The authors found that both variables were significant. However, their study was very limited since they did not examine any other possible variables that could have affected CEO compensation, and they used only one year of data.

Deckop (1988) looked at 120 firms for the period 1977-1981 in order to determine the factors that affect CEO pay. According to his results, CEOs did not increase their compensation by increasing the size of their firm; however, profits as a percentage of sales did have a positive effect on CEO pay. In addition, outside CEOs earned more than internally-promoted managers. According to the results of his study, the market value of the firm and the level of experience of the CEO had little effect on his compensation. It is important to note that the data used in this study was prior to the period in the 1990's when equity-based compensation became a much larger share of total CEO pay.

Jensen and Murphy (1990) examined the relationship between CEO compensation and firm performance. It is important to note that the authors did not explicitly estimate the determinants of CEO pay; rather, they wanted to determine if performance, as measured by changes in shareholder wealth and the market value of the firm, had any statistically-significant effect on CEO compensation. Using data on 1,688 CEOs from the period 1974-1986, the authors found that, for the period studied, increases in shareholder wealth had little effect on CEO pay; in fact, each \$1,000 change in shareholder wealth increased the salary and bonus of the CEO by only two cents. In addition, bonuses were not highly sensitive to performance, and boards of directors did not vary CEO pay due to firm performance. In summation, Jensen and Murphy (1990) found little relationship between CEO pay and company performance for the period in question.

Hill and Phan (1991) looked at effect of a CEO's tenure at a firm on the relationships between pay and stock performance, firm size, and level of risk undertaken by CEO. Data were collected on 104 firms for the period 1977-1988. Their results indicated that, as a CEO's tenure increases in length, the relationship between pay and firm size and pay and risk became stronger.

Ely (1991) examined the inter-industry differences in the relationship between CEO compensation and performance variables. Using data from 1978 to 1992, the author attempted to determine if firm performance had a statistically-significant effect on CEO compensation for the banking, electric utility, oil, and retail grocery industries. Results indicated that the type of industry in which a CEO worked had minimal effect on the CEO's compensation, holding all other factors constant.

Daily, *et al.*, (1998) looked at the role of boards of directors in determining CEO compensation. Using 1992 data on 194 corporations, the authors examined the role of board behaviors and politics in the determination of CEO pay. The authors hypothesized that if the compensation committee of the board consisted of directors who were friends of the CEO (affiliated directors) or who were appointed to the board during the tenure of the CEO (interdependent directors) or who are CEO's of other firms (CEO directors), then the CEO will obtain greater compensation, holding all other factors constant. Their results suggested that these hypotheses could not be supported; boards are thus mindful of their obligations to stockholders and objectively evaluate CEO compensation. The only control variable that had consistent relationship with CEO pay was firm size, as measured by firm assets; the larger the firm, the greater was CEO compensation.

Attaway (2000) examined the relationship between CEO compensation and various performance variables for a select group of computer and electronics firms. Using data on 42 firms for the years 1992-1996, the study found that return on equity and the CEO's age and tenure at the firm were all positively and significantly related to CEO compensation for the sample of firms; the percentage of outstanding shares of company stock owned by the CEO had a negative relationship with CEO compensation. Interestingly, even though this study examined firms in the computer industry, an industry that makes extensive use of stock options as a form of CEO compensation, Attaway did not include stock options as income.

Balkin, Markman, and Gomez-Mejia (2000) examined the role of innovation in determining CEO pay at high technology firms. Using the number of patents obtained and R & D spending as proxies for innovation and looking at both short term (salary and bonus) as well as long term (equity-based) compensation, the authors found that there is a positive and statistically-significant relationship between innovation and short-term pay but no relationship between innovation and long-term compensation. It should be noted that the sample used by the authors was rather small (90), and the R²s were very low, ranging from a high of 68% to a low of 11%, with the vast majority below 50%.

Ueng, Wells, and Lilly (2000) looked at the effect of firm size on CEO compensation. Stating that recent research has focused primarily on larger firms and that this research also found limited support for the relationship between firm performance and CEO pay, the authors estimated three simple regression models, one for large firms, one for small firms, and one for a combined sample. Using as explanatory variables, return on assets, firm size as measured by assets, and firm growth, the authors found that firm size was the most significant determinant of CEO compensation for small firms. In addition, this study found that firm performance was a significant determinant of CEO pay. It is important to note that the authors only looked at CEO salaries and bonuses and ignored all long-term and equity-based compensation.

Cordeiro and Veliyath (2003) used a panel data set that consisted of 222 firms over the 1992-1995 period. The authors looked at a wide variety of explanatory variables to explain CEO compensation. These variables included corporate governance mechanisms, institutional shareholders, firm strategic variables, and firm performance. This study looked at both short term compensation (salary and bonus) and total compensation that included both short term components and equity-based compensation. Results indicated the following: a greater proportion

of outside directors on the board had no effect on total CEO compensation; inside ownership (when the CEO and other managers own firm stock) also had no effect on total compensation; large outside shareholders exerted no effect on total pay; firm diversification had no effect on pay. However, the greater the risk-seeking behavior of the CEO, the greater was his pay; the larger the firm, the greater was CEO compensation; the better firm performance was, as measured by returns on assets and stockholder returns, the greater was CEO compensation, and the longer CEO tenure was, the greater was his pay. However, tenure had a nonlinear and declining effect on CEO pay; this was indicated by the positive sign on the tenure variable, but a negative sign on the square of the tenure variable. This result suggested that every additional year of experience as a CEO increased a CEO's pay, but at a declining rate.

Finally, while there have been many other studies on the issue of CEO compensation, most dealt with very narrow issues. Offstein and Gnyawali (2005) looked at CEO compensation in the pharmaceutical industry. Vafaes (2003) examined the role that the composition of the compensation committee had on CEO pay. Ramcharran (2002) examined the effect of foreign operations on CEO compensation. Wright and Kroll (2002) and Finkelstein and Boyd (1998) both looked at the role that managerial or executive discretion play in determining CEO compensation. While these types of studies are important for understanding the many potential determinants of CEO compensation, they are not particularly relevant for a more general study on CEO pay.

The present study differs from most of this prior research in several ways. First, a more economic approach, based on the work of Mincer (1974), is used to derive the determinants of CEO compensation. These determinants include experience and the square of experience, which are used in order to capture the nonlinear effects of experience on compensation, industry-specific dummy variables, which are used to capture any possible inter-industry differences between CEO pay that cannot be explained by individual attributes or firm-level performance, and finally, gender, which is used to capture any possible sexual discrimination with regards to compensation in the market for CEOs.

Second, much more recent data is used; the time frame for the data used in the present study is from 1992-2002. This is not only some of the most recent data used for a study on CEO compensation, but is also one of the largest datasets ever used for such a study; over 900 CEOs are examined in the present study. Finally, the determinants of both short and long term forms of compensation are examined. While other studies have examined the determinants of these various types of compensation, few have included stock option grants and other forms of deferred compensation in their analysis of the total compensation of CEOs. Hence, the present study contributes much to the research in this area by utilizing newer data, a more economic approach, and an analysis of more types of compensation.

EMPIRICAL TECHNIQUE

In order to determine the most appropriate determinants of CEO compensation that should be included as explanatory variables in the present study, the author examined the economic literature on wage determination and primarily the work of Mincer. One of the seminal works in the area of wage and salary determination was Mincer's 1974 work *Schooling, Experience,*

and Earnings. In this text, Mincer attempted to model earnings as a function of human capital, or the capabilities that an individual worker brings to the marketplace for labor.

In this study, Mincer first focused on the impact of schooling on the earnings. Expanding that analysis to include post-school investments in human capital, age and experience were used as reasonable proxies of the accumulation of human capital in the post-schooling period. Given the above, Mincer developed a wage function that would be parabolic in the experience term as follows:

$$\ln E_t = \ln E_s + B_1 t - B_2 t^2 \quad (1)$$

where E_t denotes earnings after t years of experience, E_s denotes the earning capacity after the completion of schooling, and t denotes years of experience (Mincer, 1974, p.84). The author went on to note that experience is meant to include all work experience; hence, the following holds:

$$t = A - s - b \quad (2)$$

where A is the person's current age, s is the years of schooling, and b is the age at which schooling began.

Finally, Mincer noted that "the economic theory of optimizing behavior implies that investment in human capital declines over time" (Mincer, 1974, p.85). In other words, every additional year of experience increases a person's earning capacity, but at a declining rate; earnings and experience have a nonlinear relationship. This is the reason for the negative sign on the squared experience term in equation (1). This equation is used as a theoretical basis for the wage equation estimated in the present study.

In order to capture all potential factors that may affect a CEO's salary, however, one must look beyond individual earnings capacity and examine possible measures of job performance. It is reasonable to assume that the salary of a CEO, or any worker for that matter, is based on not just the worker's level of experience and education, but also on their performance in their current position. The better a worker's performance, holding all other factors constant, the greater is his or her salary.

With regards to the present study, it is assumed that if a CEO is able to increase the profitability of a firm, then that CEO will be rewarded. The present study will use the following as measures of profitability: net income per sales, sales per employee, return on equity, one-year total shareholder return, three-year total shareholder return, and five-year total shareholder return.

The net income per sales and return on equity are included because it is assumed that firms exist to maximize profits; hence, it is reasonable to assume that the representatives of the owners of the firms (the board of directors) will reward CEO's who maximize profitability. Sales per employee is included to capture any potential scale effects regarding compensation and revenue. Shareholder returns are included in order to capture the effects of a third-party opinion (the stock market) on present and potential future firm profitability and their impacts on CEO compensation.

As noted above, the following economic variables are used in the present study: experience and the square of experience, a dummy variable denoting gender, and dummy variables denoting the industrial classification of the firm. Experience and the square of experience are used in order to take of account the non-linear effect of experience on compensation; please see the discussion of Mincer (1974) above. It is important to note that, unlike other studies, the CEO's total experience is used and not just his or her tenure as CEO. The experience variable is defined as the CEO's age minus 22; it is assumed, for purposes of the present study, that all CEOs began their careers at the age of 22. No data was available on education; hence, it was not possible to account for varying years of education in the calculation of the years of experience. In addition, a gender dummy variable is included in order to capture any potential sex discrimination in the determination of CEO compensation.

Regarding the last set of economic variables, in order to take account of any potential differences between different industry sectors regarding CEO compensation practices, several industry dummy variables were included in the regression equations. Using SIC codes, the following industry groups were examined in the present study: SIC 100-2000 (mining and construction); SIC 2000-2800 (food and textile manufacturers); SIC 2800-4000 (manufacturing); SIC 4000-5000 (transportation); SIC 5000-6000 (retail and wholesale trade); and SIC>6000 (services).

Using the above as a guide, the following equation is estimated in the present study. This log-linear wage regression equation is based on the work of Mincer (1974) and is adapted from equation (1):

$$\begin{aligned} \ln S = & a_0 + a_1 \text{PROFIT}(-1) + a_2 \text{SEMP}(-1) + a_3 \text{ROE} + a_4 \text{TRS1} + \\ & a_5 \text{TRS3} + a_6 \text{TRS5} + a_7 \text{EXPER} + a_8 \text{EXP2} + a_9 \text{MALE} + \\ & a_{10} \text{MINING} + a_{11} \text{TEXTILE} + a_{12} \text{TRANS} + a_{13} \text{RETAIL} + \\ & a_{14} \text{SERVICE} + a_{15} \text{YEAR} + u \end{aligned} \quad (3)$$

where S is annual CEO compensation, $\text{PROFIT}(-1)$ is the annual lagged net income per sales ratio, SEMP is the annual lagged sales per employee ratio, ROE is the return on equity, TRS1 the one-year total shareholder return; TRS3 is the three-year total shareholder return; TRS5 is the five-year total shareholder return; EXPER is years of experience calculated by taking the age of the person and subtracting 22; EXP2 is experience squared; MALE equals one if CEO is male and zero otherwise; MINING equals one if CEO was in industry SIC 100-2000; TEXTILE equals one if CEO was in industry SIC 2000-2800; TRANS equals one if CEO was in industry SIC 4000-5000; RETAIL equals one if CEO was in industry SIC 5000-6000; SERVICE equals one if CEO was in industry SIC > 6000; YEAR is a time trend variable; and u is a normally-distributed random error term. Three different measures of compensation are used: salary, bonus, and total compensation, which includes salary, bonus, total value of restricted stock granted, total value of stock options granted, and long-term incentive pay-outs. Variable definitions are provided on Table 2.

DATA AND RESULTS

All of the data used in the present study was obtained from Standard & Poor's ExecuComp Database. This database, which is part of Standard & Poor's Market Insight, contains current

and historical compensation data on the top executives of over 2,500 companies. ExecuComp variables that were used in the present study are as follows: BONUS, EMPL, NI, P_PAGE_2, PCEO, PGENDER, ROEAVG, SALARY, SALES, SIC, TDC1, TRS1YR, TRS3YR, TRS5YR, and YEAR. Data was for the years 1992-2002. Only individuals who were CEO's in 2002 were included in the present study. Not all individuals were CEO's for the entire period examined. Any CEO's with missing data were excluded from the present study. The final data set used in the present study had 6,580 observations and 975 CEO's. All dollar values were put in terms of 1982-1984 dollars.

In order to properly estimate equation (3), one of the industry groups had to be excluded; otherwise, the equation would have been over-identified. For the purposes of the present study, the excluded industry group was manufacturing. Hence, if one of the industry specific variables is insignificant, then the CEO in that industry does not have a statistically different compensation than a CEO in manufacturing, holding all else constant.

Descriptive statistics are presented on Table 1. For the sample period of the study, the average salary of CEO's was \$561,740, the average bonus was \$751,199, the average total long-term compensation was \$4,066,933, the average return on equity was 17%, and the average one-year shareholder return was 20%.

Results are presented on Tables 3, 4 and 5. Ordinary least squares was used to estimate these regressions. The results were corrected for serial correlation; the Prais-Winsten method was used.

As can be noted from the tables, firm performance had little effect on CEO pay. In fact, the only firm performance variable that was significant was the ROE variable for the bonus regression. This result corroborates some prior research and anecdotal assertions that pay and performance are not highly correlated. Shareholder returns were much more significant. For

Table 1
Descriptive Statistics

<i>Variable</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>
Salary	\$561,740	\$0	\$3,600,000
Bonus	\$751,199	\$0	\$3,040,200
Total Compensation	\$4,066,932	\$0	\$259,580,369
Profit	0.091	-0.296	1.108
SEMP	\$202	\$2.09	\$35,862
ROE	0.17	-0.01797	12.74
TRS1	0.20	-0.83	10.39
TRS3	0.16	-0.47	2.80
TRS5	0.16	-0.32	1.96
Exper	30.7	9	68
Male	0.98	0	1
Mining	0.048	0	1
Textile	0.117	0	1
Trans	0.132	0	1
Retail	0.124	0	1
Service	0.267	0	1

Table 2
Variable Definitions

<i>Variable</i>	<i>Definition</i>
Salary	The dollar value of the base salary (cash and non-cash)
Bonus	The dollar value of the bonus (cash and non-cash)
Total Compensation	Total compensation which includes the following: salary, bonus, total value of restricted stock granted, total value of stock options granted, and long-term incentive payouts.
Profit	Net Income per employee
SEMP	Net annual sales per employee
ROE	Net income divided by total common equity
TRS1	The one-year total return to shareholders, including the monthly reinvestment of dividends
TRS3	The three-year total return to shareholders, including the monthly reinvestment of dividends
TRS5	The five-year total return to shareholders, including the monthly reinvestment of dividends
Exper	Age- 22; It is assumed that all CEOs began their working careers at age 22.
Mining	SIC 100-2000
Textile	SIC 2000-2800
Trans	SIC 4000-5000
Retail	SIC 5000-6000
Service	SIC greater than 6000

Table 3
Salary Regression Results

$$\ln S = a_0 + a_1 \text{PROFIT}(-1) + a_2 \text{SEMP}(-1) + a_3 \text{ROE} + a_4 \text{TRS1} + a_5 \text{TRS3} + a_6 \text{TRS5} + a_7 \text{EXPER} + a_8 \text{EXP2} + a_9 \text{MALE} + a_{10} \text{MINING} + a_{11} \text{TEXTILE} + a_{12} \text{TRANS} + a_{13} \text{REATIL} + a_{14} \text{SERVICE} + a_{15} \text{YEAR}$$

<i>Variable</i>	<i>Coefficient</i>	<i>Standard Deviation</i>	<i>Test Statistic</i>
Constant	-110.14	6.3	-17.48***
Profit(-1)	-0.1412	0.116	-1.22
SEMP(-1)	0.0000013	0.000013	0.099
ROE	0.000038	0.00028	0.132
TRS1	0.00014	0.000141	1.02
TRS3	-0.000795	0.000457	-1.736*
TRS5	0.00137	0.00068	2.014**
Exper	0.074	0.0078	9.54***
EXP2	-0.00092	0.00011	-7.79***
Male	0.406	0.099	4.073***
Mining	-0.064	0.059	-1.077
Textile	0.028	0.045	0.623
Trans	-0.108	0.042	-2.565**
Retail	0.138	0.043	3.21***
Service	0.145	0.034	4.32***
Year	0.057	0.0032	17.978***

Adjusted R² = 0.098

Durbin-Watson = 2.03

Significant at 10% Level = *

Significant at 5% Level = **

Significant at 1% Level = ***

Table 4**Bonus Regression Results**

$$\ln S = a_0 + a_1 \text{PROFIT}(-1) + a_2 \text{SEMP}(-1) + a_3 \text{ROE} + a_4 \text{TRS1} + a_5 \text{TRS3} + a_6 \text{TRS5} + a_7 \text{EXPER} + a_8 \text{EXP2} + a_9 \text{MALE} + a_{10} \text{MINING} + a_{11} \text{TEXTILE} + a_{12} \text{TRANS} + a_{13} \text{REATIL} + a_{14} \text{SERVICE} + a_{15} \text{YEAR}$$

<i>Variable</i>	<i>Coefficient</i>	<i>Standard Deviation</i>	<i>Test Statistic</i>
Constant	-222.01	18.978	-11.698***
Profit(-1)	0.378	0.37	1.02
Semp(-1)	0.191	0.437	0.438
ROE	0.0054	0.00095	5.697***
TRS1	0.00344	0.00049	7.006***
TRS3	0.0096	0.0015	6.19***
TRS5	0.0051	0.0022	2.249**
Exper	0.136	0.0228	5.996***
EXP2	-0.00186	0.00035	-5.348***
Male	0.448	0.283	1.58
Mining	0.309	0.169	1.821*
Textile	0.099	0.124	0.799
Trans	-0.321	0.117	-2.74***
Retail	-0.123	0.119	-1.03
Service	0.11	0.094	1.18
Year	0.111	0.0095	11.725***

Adjusted R² = 0.083

Durbin-Watson = 2.17

Significant at 10% Level = *

Significant at 5% Level = **

Significant at 1% Level = ***

Table 5**Total Compensation Regression Results**

$$\ln S = a_0 + a_1 \text{PROFIT}(-1) + a_2 \text{SEMP}(-1) + a_3 \text{ROE} + a_4 \text{TRS1} + a_5 \text{TRS3} + a_6 \text{TRS5} + a_7 \text{EXPER} + a_8 \text{EXP2} + a_9 \text{MALE} + a_{10} \text{MINING} + a_{11} \text{TEXTILE} + a_{12} \text{TRANS} + a_{13} \text{REATIL} + a_{14} \text{SERVICE} + a_{15} \text{YEAR}$$

<i>Variable</i>	<i>Coefficient</i>	<i>Standard Deviation</i>	<i>Test Statistic</i>
Constant	-25196.61	1839.85	-13.695***
Profit	6.83	38.103	0.179
SEMP	0.0017	0.005	0.349
ROE	0.0825	0.102	0.811
TRS1	-0.079	0.0585	-1.367
TRS3	-0.229	0.176	-1.304
TRS5	0.989	0.241	4.10***
Exper	19.44	2.08	9.328***
EXP2	-0.238	0.0318	-7.472***
Male	8.709	25.34	0.344
Mining	8.327	15.132	0.550
Textile	15.427	10.782	1.431
Trans	-0.711	10.291	-0.069
Retail	11.969	10.528	1.137
Service	8.539	8.329	1.025
Year	12.39	0.923	13.416***

Adjusted R² = 0.068

Durbin-Watson = 1.98

Significant at 10% Level = *

Significant at 5% Level = **

Significant at 1% Level = ***

the salary regression, the 5-year return was significant and positive; for the bonus regression, the 1-year, 3-year, and 5-year returns were all significant and positive; and for total compensation, the 5-year return variable was significant and positive. These results suggest that CEO pay, especially the bonus portion of his pay, is highly correlated with shareholder returns. Since many bonuses are tied to stock performance, this result is not unexpected.

As the results indicate, economic factors are important determinants of CEO compensation. In all three regressions, experience and experience squared were significant with the correct signs; hence, even for CEOs, experience has a nonlinear effect on earnings. Male was significant in the salary regression but insignificant in the bonus and total compensation regressions. This result provides some evidence that female CEO's are not discriminated against in terms of pay solely because of their sex. This result, however, is not especially robust since 98% of the CEOs in the present study are male.

Finally, some of the industry dummy variables were significant. None were significant in the total compensation regression; TRANS was significant and negative in the salary and bonus regressions; MINING was significant and positive in the bonus regression; and SERVICE and RETAIL were significant and positive in the salary regression. These results suggest that industry specificity has some effect on CEO. As the results suggest CEOs in SERVICE and RETAIL were paid more in the form of salaries than the CEOs in other industries, while CEOs in the transportation industry were paid less than their counterparts in other industries.

Finally, the time trend variable is significant and positive in all three regressions. This result suggests that CEO pay was on an upward trend during the time period studied, even after holding constant firm performance and economic factors. Hence, CEOs were increasingly rewarded by boards of directors even though no tangible evidence of increased firm performance was evident.

CONCLUDING REMARKS

The present study used the latest data available from ExecuComp in order to estimate an economic model of the determinants of CEO compensation. Looking at 975 CEO's over the period 1992-2002, the present study found that firm performance had very little effect on CEO pay, while economic factors, such as experience and industrial classification of firm were much more important in the determination of executive compensation. These results confirm not only anecdotal assertions that CEO pay is not linked to firm performance, but also the results of some prior research (Daily, *et al.*, 1998). In addition, the results also indicated that CEO compensation increased over the ten-year period examined, holding all other factors constant. Hence, this result indicated that boards continually rewarded CEOs, even though firm sales and profits may have been lagging.

The results of the present study are important since they suggest that, during the period in question, performance was not a factor that boards considered very important when determining CEO pay. In fact, the only measure of performance that they were concerned about were stockholder returns. This result may suggest that boards were more interested in attracting and retaining CEOs who would increase shareholder value rather than improve the firm's bottom line. In light of the current wave of executive pay cuts, the results of the present study suggest

that these pay cuts may be appropriate, especially given the lack of a statistical link between firm performance and CEO pay.

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