
A Study of the Relationship Between Company Performance and CEO Compensation

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INTRODUCTION

According to Agency Theory, an agency problem exists when an agent, such as a CEO has established an agenda which conflicts with the interest of the stockholders. Agency problems are most likely to occur when an executive has no financial interest in the outcomes of the decisions made (Boyd, 1994). Therefore, one way to avoid agency problems would be to reward executives on the basis of financial returns to shareholders (Kerr and Bettis, 1987). However, with the growing salaries of executives, stockholders seem to be more convinced than ever that there is no connection between executive pay and corporate performance.

This paper adds to the body of research on the topic of executive compensation by examining the relationship between performance and CEO compensation for a sample of firms in the computer and electronics industry.

LITERATURE REVIEW

Scholars have operationalized firm performance in many different ways. The most common ways firm performance has been operationalized are stockholders equity, stock performance (return on common stock and changes in market value), and profitability (earnings per share, return on investment, and total profits). The following section summarizes the results of several studies related to the relationship of these variables to executive compensation.

Stockholders Equity

Studies of the relationship between stockholders

equity and executive compensation have been conducted by researchers such as Murthy and Salter (1975); Aupperle, Figler, and Lutz (1991); Veliyath and Bishop (1995); Akhigbe, Madura, and Tucker (1995); and Madura, Martin, and Jessel (1996). Each of these studies operationalized stockholders equity as either return on common stock or changes in market value.

With the exception of the study by Veliyath and Bishop (1995); studies of the relationship between executive compensation and firm performance have not found a strong relationship between stockholders equity and executive compensation.

Stock Performance

Studies of the relationship between stock performance and executive compensation have been done by Lewellen and Huntsman (1970), Coughlan and Schmidt (1985), and Kerr and Bettis (1987). Lewellen and Huntsman (1970) theorized that stock performance would be related to company performance, and found that equity market values were a major factor in the determination of compensation levels for corporate executives. Coughlan and Schmidt (1985) also studied the relationship between stock price performance and executive compensation and concluded that they are linked.

However, Kerr and Bettis (1987) examined the relationship between performance and executive rewards by examining annual returns to shareholders adjusted for overall fluctuation in the stock market. Their results contradicted those of Coughlan and

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Schmidt (1985), as their study suggests that boards of directors do not consider performance of a firm's stock when changing CEOs' salaries and bonuses.

Profitability

Studies using profitability as a measure of performance usually operationalize it as either earnings per share or total profits. The results of research in this area have been mixed. For example, Murthy and Salter (1975); Aupperle, Figler, and Lutz (1991); and Madura, Martin, and Jessel (1996) found that there was no statistically significant relationship between changes in executive compensation and changes in return on equity. However, Veliyath and Bishop (1995) conducted a study, which was restricted to a specific industry, and found that firms with high return on equity reward their CEOs with higher cash compensation.

Since only the test by Veliyath and Bishop was restricted to a specific industry, their findings suggest that there may be certain industry effects that are not captured in studies related to various industries.

Total Profits

Jensen and Murphy (1990) and Miller (1995) conducted two of the more recent studies of the relationship between total profits and CEO compensation. Jensen and Murphy (1990) found that CEO compensation is related to changes in accounting profits. In a more recent study, Miller (1995) found no support for a linear relationship between profit and executive compensation.

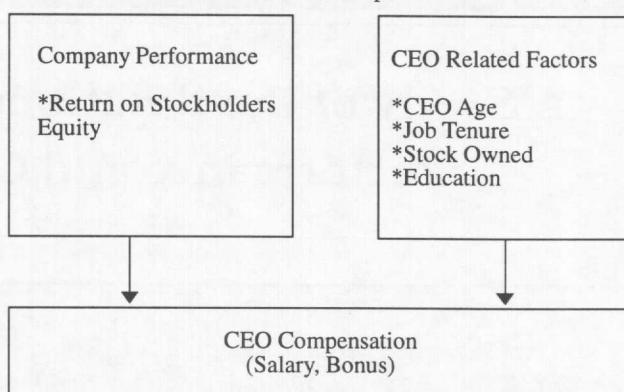
METHODOLOGY

This study tested the relationship between company performance and CEO compensation using premises and variables that have been used in prior studies. Veliyath and Bishop (1995) conducted a similar study using a sample of 47 U.S. drug and pharmaceutical firms. Their study supported the existence of a relationship between components of CEO compensation and firm performance. This research seeks to make a contribution to the body of research in this area by testing the relationship between company performance and CEO compensation in the computer and electronics industry. The results of the literature review indicate that this industry has not been previously studied.

The study's primary focus is on the relationship between CEO compensation and firm performance. However, according to Veliyath and Bishop (1995, p. 270) "extant literature has proposed other variables as determinants of executive compensation." In order to obtain a more accurate understanding of the pay-performance relationship, these antecedents had to be controlled. The model of CEO compensation used in the study is shown in Figure 1. The sampling

procedures and data sources are discussed below.

FIGURE 1
Model of CEO Compensation



Sampling Procedures/Data Sources

According to Miller (1995), most studies of executive compensation rely upon secondary data from Forbes, Fortune, Business Week, or filings with the Securities and Exchange Commission (SEC). Since these secondary sources are considered to provide valid and reliable data, the data for the firms in this study were obtained from these same sources.

The study's hypothesis was tested using firms listed under computers and communications in E.S. Hardy's article entitled "Payday for America's 800 top chief executives" in the May 22, 1995 issue of Forbes. Forbes publishes the compensation survey after the close of each fiscal year, and it usually appears in the latter part of May or early June. This selection technique resulted in an initial sample of 77 computer and electronics firms. After elimination, the sample consisted of 42 firms (Appendix A).

"Pooling performance data into a four or five year average reduces variability, provides a better long term indicator, and provides a more reliable and valid measure of firm performance than annual measures" (Gomez-Mejia, Tosi, and Hinkin, 1987, p. 58). Therefore, data for this study was collected for the years 1992 to 1996, and the history for a given corporation could yield a maximum of five observations. This five year period limited the influence of short term irregularities, but was short enough to provide a reliable estimate of the firms' most recent performance, and their CEO's compensation.

The data for a particular firm was included in the test sample only if several conditions were met. First, data for each of the dependent and independent variables had to be available for each of the years covered by the study. Second, each firm had to be managed by the same CEO for the entire period of the study. This is important because one of the key objectives of this study is to determine whether CEO pay is linked to company performance. Thus, it is

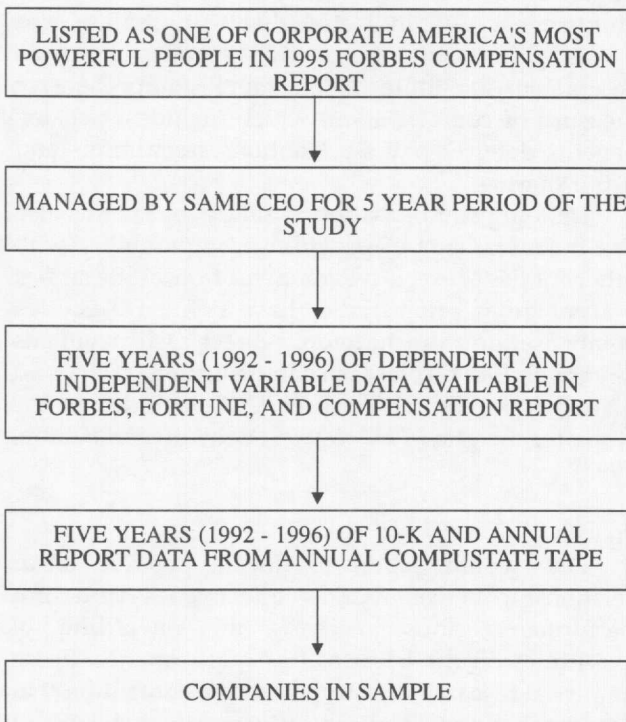
important that the CEO be in place during the period in which performance is measured (Madura et al., 1996).

There are several criteria that a CEO had to meet to be included in the study. First, the CEO had to be listed as one of corporate America's most powerful people in the May 22, 1995 issue of *Forbes*. Second, the CEO had to be in that position for the entire period of the study (1992-1996). Finally, data had to be available from *Forbes*, *Fortune*, and *Business Week* for the entire period of the study. The sample selection and elimination process is diagrammed in Figure 2.

It should be noted that the resulting sample of firms cannot be described as a random sample because of the method of selecting the sample, and the constraints placed on selecting a sample item for inclusion in the study. However, this selection process is consistent with that of previous research on executive compensation (Miller, 1995).

FIGURE 2

Sample Selection/Elimination
(Madura et al., 1996)



Variables and Measures

The study's primary focus was on the relationship between CEO compensation and firm performance. However, literature has proposed a number of other variables as determinants of executive compensation. To obtain a better understanding of the relationship between pay and performance, these antecedents had to be controlled (Veliyath and Bishop, 1995). Measures of the variables investigated were pooled over the years studied to smooth any temporary fluctuations (Wallace, 1973).

The independent variables for this study consists of company performance and CEO related factors that have been included in other studies of executive compensation. The information related to the independent variables were primarily coded from reports issued by *Fortune*, *Forbes*, *Business Week*, and filings with the SEC. The procedures for measuring the independent variables are discussed below.

Company Performance

Scholars typically use profitability, stock performance, or stockholders equity to measure company performance (Dyl, 1988 & Tosi and Gomez-Mejia, 1994). Issues related to each of these measures are discussed below.

Profitability: is usually measured as earning per share or return on investment. However, the use of profitability as a measure of company performance can be criticized as it may not reflect a firm's true underlying value of performance because executives can manipulate indicators to make themselves look good. Practices executives commonly use to manipulate indicators include: (1) manipulating depreciation policy (accelerated versus straight-line); (2) changing inventory valuation procedures (FIFO versus LIFO); (3) using short-term, noncapitalized leases to obtain productive equipment; and (4) using window dressing techniques, such as holding borrowed money as cash until the end of a year, so a balance sheet looks good. All of these practices create problems when interpreting accounting data (Gomez-Mejia, Tosi, and Hinkin, 1987).

Stock Performance: Stock performance is usually measured by changes in stock prices. Stock prices are not deemed to be a good measure of company performance because firm stock prices tend to move with the market, which can hide the differences in cross-sectional performance over a given period (Madura, Martin, Jessell, 1996).

Stockholders Equity: Because of the inadequacies of the previously discussed measures, return on equity is often used as a measure of company performance. Many researchers believe return of equity is a better measure of company performance, because it considers profit rates rather than profit size (Madura, Martin, & Jessell, 1996). Two proxies are often used when using return on equity as a measure of company performance. These two proxies are (Madura, Martin & Jessell, 1996, p.81-82):

- **Average Return on Equity:** The five year return of equity (ROE) is used to measure the performance of several years. This accounting based performance measure captures past performance as well as present performance, since it reflects a form of a moving average of past and

present performance. If compensation is partially attributed to past performance, then average ROE proxy should detect a significant relationship.

- Present Return on Equity - A second accounting based performance proxy is the present year's return on equity. If CEO compensation is directly tied to the most immediate performance, this factor would be more relevant than five year ROE.

Because many of the companies in this study are relatively new and do not have the earnings history required to measure average return on equity, present return on equity was operationalized as company performance for this study. Return on Equity was defined as net income/book value of equity for this study (Veliyath and Bishop, 1995).

CEO Related Factors

In addition to the preceding variables, CEO related factors are included in this study. They represent potentially influential variables outside the focal theory, that might nevertheless play an important role in the setting of executive compensation levels. By accounting for these other effects, we strengthen the tests of the focal relationships (Veliyath and Bishop, 1995).

CEO related factors include age, job tenure, stock ownership, and education. These variables were operationalized as follows:

- CEO age (Madura, Martin, & Jessell, 1996) - was measured in terms of number of years and was obtained from *Forbes*, *Business Week*, and SEC filings.
- Job tenure (Veliyath and Bishop, 1995) - was operationalized as the number of years the executive spent in his or her present position, and was obtained from *Forbes*, *Business Week*, and SEC filings.
- CEO's Stock Ownership (Mallette, Middlemist, and Hopkins, 1995; and Veliyath & Bishop, 1995) - was measured as the percentage of outstanding shares held by the CEO. Data on shares (common shares an individual owns or has voting control over, including stock options that are exercisable in the very near future) was recorded for each CEO as the percentage of total shares held by the CEO. It was obtained from *Forbes*, *Business Week*, and SEC filings.
- CEO's Education (Agarwal, 1981) - is defined as below bachelor's degree, bachelor's degree, and masters degree or

higher. Data for CEO's education was obtained from *Forbes* compensation reports.

CEO Compensation

CEO compensation, the study's dependent variable, has three distinct components: salary, bonus, and long-term income. Long-term income includes a wide array of deferred compensation benefits like pensions, profit sharing, stock options, IRAs, and bonus deferrals (Gomez-Mejia, Tosi, & Hinkin, 1987).

For this study, CEO compensation was operationalized as total cash compensation. Total cash compensation was defined as the sum of annual salary and bonus, all measured in thousands of dollars (Rajagopalan and Prescott, 1990). Thus, the definition of top management compensation used in this study excluded deferred compensation benefits such as pensions, profit sharing, stock options, and IRAs. As noted by Kerr and Bettis (1987) and Finkelstein & Hambrick (1989), valuation of long term incentives is beset with a number of practical and methodological issues. Also, regression analysis by Lewellen and Huntsman (1970) indicated that using salary and bonus as a measure of executive compensation is an acceptable substitute for a more comprehensive measure of compensation, which includes: pension benefits, deferred pay, stock options, stock bonus, and profit sharing.

Defining compensation as salary and bonus also has the advantage of providing comparability with other studies of executive compensation, as the largest percentage of prior studies have defined executive compensation to include only direct cash payments (Agarwal, 1981). Total cash compensation (salary and bonus) was collected for each CEO included in the study for the years 1992 to 1996 (Veliyath and Bishop, 1995).

Hypothesis

One would expect to find a positive linear relationship between CEOs' effectiveness and firm performance, thus justifying the rewarding of executives on the basis of firm performance. Some empirical research has supported the contention that agents (such as CEOs) can influence the behavior of their employees, and thus, the performance of their firms (Hansen and Wernerfeld, 1989). Since CEOs are expected to be able to influence results, it is hypothesized that:

- HO:1 - There is a negative linear relationship or no linear relationship between firm performance (annual return on stockholders equity) and CEO compensation (cash plus bonus) for firms in the computer and electronics

industry.

- HA:1 - There is a positive linear relationship between firm performance and CEO compensation for firms in the computer and electronics industry.

This hypotheses was tested using Pearson Product Moment correlation and linear least squares regression analysis (Gomez-Mejia et al., 1987; Kerr and Bettis; 1987; Gerhart and Milkovich, 1990; & Miller, 1995).

RESULTS

This section discusses the statistical techniques used to analyze the sample data and interpret the empirical findings related to the study's hypothesis. The analytical techniques and an overview of data used for the study are summarized below.

Data Review

This section includes the descriptive statistics, correlations, and data analysis for the data set. This section also includes tests of the individual dependent and independent variables to ensure they can be relied upon to produce results that are truly representative of the sample.

Descriptive Statistics

The final sample consisted of 42 firms and a total of 215 years of CEO data. The mean ROE for the five year period 1992 to 1996 was 15.38%, and the mean compensation of CEOs (salary and bonus) was \$1,361,000. The CEOs in the sample had an average age of about 53 years and an average of 9 1/2 years tenure with their firms. The CEOs owned an average of 3.9% of the outstanding stock of the businesses. The remaining descriptive statistics (minimum, maximum, and standard deviations) for the variables used in the model are disclosed in Tables 1 and 2.

As would be expected, some very wide variations exist for some of the variables. For example, cash compensation varies from a low of \$52,000 to a high of

\$6,729,000. Similarly, return on equity varies from 0 % to 99%. There are also similar variations for the size and CEO related variables. Unfortunately, these variations only tell us that there are significant differences between the largest and the smallest values. They do not tell us anything about the variability of the values (Norusis, 1995, p.77).

Correlations

Table 3 shows the correlations for the performance variable (return on equity) and the control variables (age, education, tenure, and stock ownership). With the exception of stock and education, the correlations between the performance and control variables are generally low.

Normality

An examination of histograms for the variables indicated that return on equity, age, education, and tenure approximates a normal distribution, while compensation and stock percentages reflect significant departures from the normal curve. As a check on the validity of the histograms, normal probability plots were also constructed.

The normal probability plots indicated that return on equity, age, education, and tenure approximates a uniform distribution. However, examination of the graphs for compensation, and stock percentage disclosed departures from the diagonal line, which is indicative of a departure from normality(skewness). To address the issue of skewness, these variables were transformed by taking their base 10 logarithms. It should be noted that transforming data transforms the data structure and could cause artificial data relationships to exist by making data more linear than it would be otherwise. However, after transformation, each of the transformed variables demonstrated normality, and there was no evidence that the transformation significantly impacted the data structure. Therefore, in situations where the normality of these variables are critical, the transformed variables can be used with the assurance that they

TABLE 1
Descriptive Statistics for 1992 - 1996 Data Set*

Variable	Cases	Mean	Std Dev	Min.	Max.
TCOMP (\$000)	215	1361.0140	1101.3133	52.0	6,729.0
ROE (%)	215	15.3803	14.6463	0.0	99.0
ASSETS (\$ million)	215	7212.5660	14296.8788	98.0	86,705.0
SALES (\$ million)	215	7524.8930	14397.8369	87.0	79,609.0
EMP (000)	215	32.5136	61.2700	0.3	357.3
AGE	215	50.9256	10.9900	28.0	72.0
TENURE**	215	9.5163	6.8275	1.0	36.0
STOCK_ (%)***	215	3.9170	7.1810	0.0	32.9

Notes:

- * = See table 2 for statistics related to education
** = Years in present position
*** = Percentage of stock owned by CEO

TABLE 2
Frequency Table for Education

Level of Education	Number	Percent
No College	20	9.3
Bachelors Degree	70	32.6
Masters Degree	110	51.1
Above Masters	15	7.0
Total	215	100.0

meet the assumptions for normality (Hair et al., 1995, p. 73).

Hypothesis

The hypothesis tests for a linear relationship between firm performance and CEO compensation using Pearson Product Moment correlation and Least Squares regression analysis. Previous tests for normality indicated that CEO compensation violated the statistical test of normality. To address this issue, transformation was performed by taking base-10 logarithms. These logarithms were substituted for the original values in the analyses that follow.

Correlation Analysis

Table 4 shows the revised correlation matrix for the components of CEO compensation (salary and bonus), firm performance (return on stockholders equity), and the study's control variables (age, tenure, stock ownership, and education). Among the independent variables and the control variables in table 4, there are indications that multicollinearity in the regressions could be a problem. For example there are high correlations ($r = .4976$) between percent of stock owned and tenure, and stock owned and age ($r =$

$-.4220$). Since these correlations are deemed high by some standards, a test of the impact of collinearity was performed.

To test for the impact of collinearity, tolerance and VIF values were calculated. A high tolerance value indicates little collinearity and tolerance values approaching zero indicates that the variables are almost totally accounted for by other variables. The variance inflation factor (VIF) is the reciprocal of the tolerance value. Therefore, small VIF values would be indication of low intercorrelation among variables (Hair et al., 1995, p. 146). Table 5 also lists the tolerance and VIF values for this study. For this analysis, each of the tolerance values is greater than 0.1. These results indicate that interpretation of the regression coefficients should not be affected adversely by multicollinearity (Norusis, 1995, p. 485).

Regression Analysis

A multiple regression analysis was attempted to predict CEO compensation based on company performance. To apply this procedure, CEO compensation was selected as the dependent variable (Y) to be predicted by variables representing performance (ROE), and CEO individual related variables (age, education, tenure, and stock ownership).

Nineteen observations were eliminated from the sample due to zero log values. Thus, the sample size for the regression was 196 rather than 215. The results of the regression are summarized in table 5, which reports the parameter estimates with the individual t-test values for each of the independent variables.

The F statistic is an alternative test of the overall significance of the regression equation. The overall F

TABLE 3
Correlation Matrix - Performance and Control Variables

	ROE	AGE	EDUC	TENURE	STOCK
ROE	1.0000 (215) P= .	-.0214 (215) P= .755	-.2006 (215) P= .003	.0812 (215) P= .236	.1897 (215) P= .005
AGE	-.0214 (215) P= .755	1.0000 (215) P= .	.0084 (215) P= .903	-.0723 (215) P= .291	-.3643 (215) P= .000
EDUC	-.2006 (215) P= .003	.0084 (215) P= .903	1.0000 (215) P= .	-.2753 (215) P= .000	-.5095 (215) P= .000
TENURE	.0812 (215) P= .236	-.0723 (215) P= .291	-.2753 (215) P= .000	1.0000 (215) P= .	.3055 (215) P= .000
STOCK	.1897 (215) P= .005	-.3643 (215) P= .000	-.5095 (215) P= .000	.3055 (215) P= .000	1.0000 (215) P= .

(Coefficient / (Cases) / 2-tailed Significance)
“. “ is printed if a coefficient cannot be computed

statistic for the equation is 17.19628, which exceeds the critical value of 3.00 ($p = .05$). The F statistic in this equation suggests that at least some of the independent variables influenced chief executive compensation during the 1992 - 1996 period.

Summary

The regression coefficients for ROE, age, education, tenure, and stock (log base 10) were .005507, .010724, -.002604, .010482, and -.117796, respectively. An examination of the t-value for each variable disclosed that the t-value for education exceeds our

significance value of $p < .05$. Therefore, education should not be used in the regression equation. Thus, the predictive equation would consist of ROE, age, tenure, and stock (log base 10) and would be written:

$$y = 2.223909 + .005507 (\text{ROE}) + .010724 (\text{age}) + .010482 (\text{tenure}) - .117796 (\text{stock})$$

Since the ROE (return on equity) was found to be statistically significant at the .001 level, and was positive, the hypothesis that "there is a negative linear relationship or no linear relationship between firm

TABLE 4
Correlation Matrix
(Compensation, Performance, and Control Variables)

	LTCOMP	ROE	AGE	EDUC	TENURE	LSTOCK
LTCOMP	1.0000 (215) P= .	.2292 (215) P= .001	.4156 (215) P= .000	.0271 (215) P= .692	.0414 (215) P= .546	-.3620 (196) P= .000
ROE	.2292 (215) P= .001	1.0000 (215) P= .	-.0515 (215) P= .453	-.2006 (215) P= .003	.0812 (215) P= .236	.0188 (196) P= .793
AGE	.4156 (215) P= .000	-.0515 (215) P= .453	1.000 (215) P= .	.0843 (215) P= .218	.1000 (215) P= .144	-.4220 (196) P= .000
EDUC	.0271 (215) P= .692	-.2006 (215) P= .003	.0843 (215) P= .218	1.0000 (215) P= .	-.2753 (215) P= .000	-.2349 (196) P= .001
TEN	.0414 (215) P= .546	.0812 (215) P= .236	.1000 (215) P= .144	-.2753 (215) P= .000	1.0000 (215) P= .	.4976 (196) P= .000
LSTOCK	-.3620 (196) P= .000	.0188 (196) P= .793	-.4220 (196) P= .000	-.2349 (196) P= .001	.4976 (196) P= .000	1.0000 (196) P= .

Notes:

(1) LTCOMP = Log (base 10) of compensation (Salary plus bonus)

(2) LSTOCK = Log (base 10) of stock

(Coefficient / (Cases) / 2-tailed Significance)

" ." is printed if a coefficient cannot be computed

TABLE 5
Regression Summary

Variable	Regression Coefficient	T. Value	Significance	Tolerance	VIF
ROE	.005507	3.831	.0002	.961142	1.040
Age	.010724	3.730	.0003	.685356	1.459
Education	-.002604	-.091	.9273	.887690	1.127
Tenure	.010482	2.671	.0082	.612751	1.632
LSTOCK	-.117796	-4.260	.0000	.520276	1.922
Intercept	2.223909				
N	196				
F-Ratio	17.19628***				
Multiple R	.55816				
R Square	.31155				
Adjusted R Square	.29278				

* = $P < .05$

** = $P < .01$

*** = $P < .001$

performance and CEO compensation for firms in the computer and electronics industry" is rejected.

IMPLICATIONS/CONCLUSIONS

One would expect to find a relationship between a CEOs' effectiveness and firm performance, thus justifying the rewarding of CEOs on the basis of firm performance. In fact, some empirical research has supported the contention that agents (such as CEOs) can influence the behavior of their employees, and thus, the performance of their firms.

This study found weak support for Agency theory, as it relates to the relationship between company performance and CEO compensation. The adjusted R square for the regression estimation was .29278 and was statistically significant at the .001 level. These results suggest that there is a small but positive relationship between firm performance (stockholders equity) and CEO compensation. Because of the generally weak correlation between stockholders equity and CEO compensation, these findings tend to support the findings of other authors such as Murthy and Salter (1975); Aupperle, Figler, and Lutz (1991); Akhigbe, Madura, and Tucker (1995); and Madura, Martin, and Jessel (1996) who have not found a strong relationship between stockholders equity and executive compensation. Accordingly, this study failed to support the findings of Veliyath and Bishop (1995), who found a strong relationship between stockholders equity and executive compensation.

Suggestions for Future Research

As with other studies of executive compensation, this study is limited in its theoretical, methodological, and empirical domains. One of the limitations of study is that its sample was drawn from a population of large computer and electronics firms. Findings could differ if the investigation focused on a random sample of all computer and electronics firms, a study consisting of a random sample of small computer and electronics firms or a random sample of all computer and electronics firms could provide important evidence of the applicability of this study's findings.

A second limitation of this study is that the researcher did not investigate deferred forms of compensation such as stock options and other long deferred forms of compensation. Past studies (Lewellen and Huntsman, 1970) have shown that cash compensation (salary plus bonus) is an acceptable substitute for a more comprehensive measure of compensation that includes pension benefits, deferred pay, stock options, stock bonus, and profit sharing. However, it is possible that this may not be true in the computer and electronics industry, due to changes in compensation practices. Therefore, future research should focus on a more comprehensive measure of compensation that includes pension benefits, deferred pay, stock options, stock bonus, and profit sharing, as it is possible that a study using a more comprehensive measure of compensation could provide some valuable insight into the relationship between executive compensation and company performance.

A third area for further research is in other industries. The review of literature in the area of executive compensation indicates a need for additional similar research in other specific industries to determine if there are industry effects that are not captured in studies containing samples of firms from different industries. Possibilities include the banking industry, electrical utilities, mining, chemicals, etc.

Finally, it is also recognized that the level of CEO compensation may be a function of factors such as: (1) strategic concepts; (2) industry characteristics, such as barriers to entry and technological intensity; and (3) intraorganizational politics. Therefore, these areas should be examined as well.

This study has contributed to the literature in the area of executive compensation by examining the relationship between CEO compensation and performance for a sample of firms in the computer and electronics industry. However, as indicated by the above suggestions for future research, there continues to be much to learn about the determinants of CEO compensation. It is hoped that other researchers will address some of these issues in future research.

REFERENCES

- Agarwal, N. (1981). Determinants of executive compensation. *Industrial Relations*, 20 (1), 36-46.
- Akhigbe, S., Madura, J., & Tucker, A. L. (1995). Reexamining the link between executive compensation and corporate performance: A note. *American Business Review*, 13, 2-83.
- Aupperle, K.E., Figler, R.A., & Lutz, R.C. (1991). Do the in search of excellence firms effectively match CEO compensation to corporate performance? *Journal of Managerial Issues*, III(4), 445-457.
- Boyd, B.K. (1994). Board control and CEO compensation. *Strategic Management Journal*, 15(5), 335.
- Coughlan, A.T., & Schmidt, R.M. (1985). Executive compensation, management turnover, and firm performance: An empirical investigation. *Journal of Accounting and Economics*, 7, 43-66.
- Dyl, E.A. (1988). Corporate control and management compensation: Evidence on the agency problem. *Management and Decision Economics*, 9(1), 21-26.

- Finkelstein, S., & Hambrick, D.C. (1988). Chief executive officer compensation: A synthesis and reconciliation. *Strategic Management Journal*, 9, 543-558.
- Gerhart, B., & Milkovich, G.T. (1990). Organizational differences in managerial compensations and financial performance. *Academy of Management Journal*, 33, 663-691.
- Gomez-Mejia L.R., Tosi, H., & Hinkin, T. (1987). Managerial control, performance, and executive compensation. *Academy of Management Journal*, 30(1), 51-70.
- Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1995). *Multivariate Data Analysis* (4th ed.). New Jersey: Prentice Hall.
- Hansen, G. S., & Wernerfeld, B. (1989). Determinants of firm performance: The relative importance of economic and organizational factors. *Strategic Management Journal*, 10, 399-411.
- Hardy, E.S. (1995). Payday for America's 800 top chief executives. *Forbes*, 155(11), 184-228.
- Hardy, E.S. (1995, May 22). America's highest-paid bosses. *Forbes*, 180-182.
- Jensen, M. C., & Murphy, K. J. (1990). CEO incentives: It's not how much you pay, but how. *Harvard Business Review*, 68 (3), 138-154.
- Kerr, J., & Bettis, R. (1987). Boards of directors, top management compensation, and shareholder returns. *Academy of Management Journal*, 30(4), 645-664.
- Lewellen, W. G., & Huntsman, B. (1970). Managerial pay and corporate performance. *American Economic Review*, 60, 710-720.
- Madura, J., Martin, A.D., & Jessel, K.A. (1996). Determinants of CEO compensation in small publicly-traded businesses. *American Business Review*, 14, 80-88.
- Mallette, P., Middlemist, R.D., & Hopkins, W.E. (1995). Social, political, and economic determinants of chief executive compensation. *Journal of Managerial Issues*, VII(3), 253-276.
- Miller, D. J. (1995). CEO salary increases may be rational after all: Referents and contracts in CEO pay. *Academy of Management Journal*, 38(5), 1,361-1,385.
- Murthy, K.R.S., & Salter, M.S. (1975). Should CEO pay be linked to results? *Harvard Business Review*, 53(3), 66-73.
- Norusis, M.J. (1995). *SPSS 6.1 Guide to Data Analysis*. Englewood Cliffs, N.J.: Prentice Hall.
- Rajagopalan, N., & Prescott, J.E. (1990). Determinants of top management compensation: Explaining the impact of economic, behavioral, and strategic constructs. *Journal of Management*, 16, 515-529.
- Tosi, H.L., & Gomez-Mejia, L.R. (1994). CEO compensation and firm performance. *Academy of Management Journal*, 37(4), 1,002-1,016.
- Veliyath, R., & Bishop, J. W. (1995). Relationship between CEO compensation and firm performance: Empirical evidence of labor market norms. *The International Journal of Organizational Analysis*, 3(3), 268-283.
- Wallace, M.J., Jr. (1973). Executive compensation: Two determinants. *Compensation Review*, 5(4), 18-23.