

CONFLICT OF INTEREST PROBLEM IN THE MANAGEMENT-CONTROLLED FIRMS

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ABSTRACT

This study hypothesizes that the conflict of interest problem exists in the management-controlled firms. The problem does not exist in the owner-controlled firms. This study supports these hypotheses.

The conflict of interest problem occurs in the management-controlled firms because managers tend to emphasize their wealth by increasing sales or profit but stock returns at the expense of shareholders' wealth. Shareholders are more concerned with the increase of stock returns, which is related directly to their wealth. On the other hand, in the owner-controlled firms, since the managers are also the owners of the firms, the conflict of interest problem does not exist.

The conflict of interest problem still persists even though CEOs have been compensated well. The problem cannot be solved by how much CEOs are paid, but by how they are paid. The problem can be reduced by designing compensation scheme that increases the ownership of the CEOs. This situation had already been recognized by the U.S. firms, that of the 374 firms in the sample, 80% or 300 firms are the owner-controlled firms.

Keywords: *Compensation, conflict of interest, agency relationship.*

INTRODUCTION

This paper addresses the issue that even though executives have been compensated well, there is still a conflict of interest between CEOs and shareholders in the agent principal relationship. This problem occurs in the management-controlled firms. The problem occurs because in the management-controlled firms, CEOs, as the owners of the company, usually emphasize their own wealth at the expense of the shareholders' wealth.

The conflict of interest between a CEO as an agent and the shareholder as a principal occurs because they both have different objectives. Even though a CEO reports to the

board of directors, who represent the shareholders, the board is generally ineffective in monitoring the CEO's actions. Since the CEO's actions are not observable by the shareholders, a CEO must be compensated to take actions in the best interest of shareholders. Even though CEOs have been compensated well, if they are not the owners, the conflict of interest problem still exists. A CEO's compensation seems to be controversial. For example, Thomas E. Frist, Jr., the CEO of HCA Hospital Corp., received compensation of \$ 127,067,000.00 to make him the highest paid CEO in 1992. Overall, the 800 CEOs in Forbes compensation survey received \$ 2.1 billion in 1992. But that huge amount of money represents less than 1.2 % of

the \$ 179 billion net profits of those companies. So, the question is not how much CEOs are paid, but how they are paid (Jensen and Murphy, 1990).

CEOs may be tempted to maximize their own wealth rather than the shareholders' wealth. This situation is well described by Simon (1986) when he relates the comment of Ponderosa's shareholders: "Here's a company where management comes first, and the shareholders, if they come in at all, are away at the end of the cafeteria line."

Some observers link this shareholders' problem with the way CEO compensation is tied to the sales volume or profit. If CEO compensation is tied to the sales volume or profit, CEOs will pay less attention to the performance of the firms' stock returns. The conflict of interest exists because CEOs as managers will try to increase sales or profit to increase their compensations. Increasing sales or profit is not necessarily increasing shareholders' wealth, since sales and profit can be manipulated for the benefit of the managers at the expense of the shareholders. The wealth of the shareholders is related to the increase of the firms' stock prices, since stock prices determine the gain that shareholders would receive if they sold their shares.

The conflict of interest problem is severe for the management-controlled firms which their CEOs are only hired managers. The problem does not exist for the owner-controlled firms, as their CEOs are the shareholders of the firms. Therefore, the objectives of this paper is to examine whether the conflict of interest between managers and shareholders exists for management-controlled firms and does not exist for the owner-controlled firms. The conflict is shown by the way managers concentrate on the sales or profit rather than on stock returns to increase their compensations.

REVIEW OF THE LITERATURE AND HYPOTHESES

The first research on CEO compensation was conducted by Roberts (1959). Using a sample of 1,414 firms for period of 1935-1950, he found that sales volume was related to CEO compensation. A following study using 45 firms of 1953-1959 period by McGuire, Chiu and Elbing (1963) supported Robert's finding that sales volume was related to CEO compensation.

Later research found that there was a stronger correlation between profit and CEO compensation than that with sales volume. Lewellen and Hunstman's (1970) study involving 50 firms from 1942 to 1963 concluded that profit was related to CEO compensation and that size (sales volume) had no effect. Prasad (1974) conducted research on a group of managers rather than a single individual CEO and his findings also suggested that profit was a better predictor of managers compensation.

A study by Murphy (1985) for example, involving the 73 largest U.S. manufacturing firms from the period of 1964 to 1981 reported that shareholder return (measured by stock return) was positively related to executive compensation. The next study by Jensen and Murphy (1990) using 1,295 companies from 1974 to 1986 supported this notion that shareholder wealth was positively related to CEO compensation.

The study by Wallace (1973) found that profit was a better predictor for executive compensation in owner-controlled firms where operated in low-concentrated industries. Another similar study was conducted by Gomez-Mejia, Tosi and Hinkin (1987), involving seventy one CEOs in manufacturing firms, found that corporate performance (profit and stock return) were better predictors of CEO compensation for owner-controlled firms and size was found to be a main determinant of

CEO compensation for management-controlled firms.

Increasing sales volume or profit is easier than increasing stock returns. Increasing sales volume or profit does not always mean increasing the wealth of the shareholders, because managers can manipulate those numbers by using accounting methods. But increasing stock returns does increase the wealth of the shareholders. Since CEOs in management-controlled firms are only hired managers not the owners of the firms, they tend to increase sales volume or profit to increase their own wealth rather than to increase stock returns. On the other hand, CEOs in the owner-controlled firms are the owner of the firm, so they are encouraged to increase their own wealth as well the shareholders' wealth. CEOs in the owner-controlled firms tend to increase not only sales or profit but also to increase stock returns. This leads to the alternative hypotheses as follows.

H1 : In management-controlled firms, sales or profit rather than stock returns is more likely to be the primary determinant for CEO compensation.

H2 : In owner-controlled firms, sales, profit and stock return are more likely to be the primary determinant for CEO compensation.

EMPIRICAL SECTION

Sample

Data for this study were collected from several sources as follows.

1. CEO compensation and firm performance data were obtained from the May 1993 issue of Forbes Magazine.
2. Firm asset data were taken from the 1993 Special Bonus Issue of Business Week Magazine.

Eight hundred CEOs were listed in the Forbes Executive Survey, the May 1993 issue of Forbes Magazine. Of the 800 observations,

175 were disqualified because of unavailability of five years of compensation data. To eliminate sample selection bias that long-term compensation was really received by executives as CEOs, they must be in CEO positions at least for five years.¹ One hundred forty six (146) observations were disqualified, because CEOs were in the firms for less than five years and 27 observations were also disqualified because long-term compensation covered less than five-year period. Ten observations were also dropped because average five year return data were not available. This reduces the sample taken from Forbes Magazine to 442 observations. Because Forbes does not give firms' assets data, these data were taken from the 1993 Special Bonus Issue of Business Week Magazine. Sixty-eight observations were again dropped because the companies were not listed in Business Week. The final sample consists of 374 observations. Table 1 presents this sample selection procedure.

This study classified the data into two groups, one belonging to management-controlled firms and another belonging to owner-controlled firms. Following Gomez-Mejia, Tosi & Hinkin (1987), a firm in which the CEO owns or controls 4 percent or more of stocks is considered an owner-controlled firm, otherwise it is considered as a management-controlled firm. From 374 observation, 74 observations belong to management-controlled firm sample and 300 are for owner-controlled firm sample.

¹ Previous studies did not consider the number of years that a CEO really holds a position as a CEO (not only as an executive). This study defines the CEO compensation as the total compensation, that is the sum of short- and long-term compensations. Since the long-term compensation covers five year compensations, a CEO must have been a CEO for at least five years. For example, a CEO who has been employed in firms for seven years, but during the first four years his/her position was as an ordinary manager. Therefore, his/her five years compensation does not really reflect long-term compensation for his/her performance as a CEO. Therefore, this study excluded all the data for executives who have been in a firm as CEOs for less than five years. Previous studies ignored this consideration.

Table 1. The Sample Selection Procedure.

Number of CEOs listed in Forbes Survey 1993	800
Incomplete data due to:	
- compensation data not available	175
- covers less than five-year period	27
- CEO in a firm for less than 5 years	146
- Average five-year returns not available	10
Total incomplete data from Forbes	356

Total number of sample obtained from Forbes	442
Asset data not available in Business Week	68

Final sample	374

Summary statistics describing selected characteristics of the sample under investigation are presented in Table 2. The CEO's ages range from 37 to 80 years, with average of 58.47 years. The CEO's tenures range from 5 to 57 years. On average, the CEOs had been employed by the firms for 26.54 years and as CEOs for 12.65 years. Ten percent of the CEOs have education less than undergraduate level. More CEOs hold undergraduate degree (42%) and master degree (37%). Ph.D. accounts for 11% for CEOs' degrees.

The average compensation the CEOs receive is 10.776 million with the lowest paid as low as \$50,000 and the highest as \$122.994 million.

Not all the companies in the sample have positive average five-year returns and profits. The highest average five-year returns is 109% and the lowest is -17%. But, as an average for 374 companies, this return is positive (18.23%). Companies' profits range from -\$2.059 billion to \$4.725 billion with average profit of \$244.47 million. The size of the companies, measured by their assets, range from \$287 million to \$213.701 billion, with an average size of \$11 billion in assets.

Pearson correlation coefficients for management-controlled firms are presented in Table 3 and those for owner-controlled firms are shown in Table 4.

Table 2. Descriptive Statistics of the Sample (Number of observation is 374).

Variable	Mean	Minimum	Maximum
AGE	58.47	37.00	80.00
TENURE	26.54	5.00	57.00
CEOYEAR	12.65	5.00	54.00
COMP	10776.0	50.00	122994.00
RETURNS5	18.23	-17.00	109.00
SALES	4920.15	174.00	64904.00
PROFIT	244.47	-2059.00	4725.00
ASSET	10936.00	287.00	213701.00
EDUCATION:			
HS	10.00%	-	-
UNDER	42.00%	-	-
MASTER	37.00%	-	-
PHD	11.00%	-	-

Table 3. Pearson Correlation Coefficients for the management-controlled firms (n=74).

	COMP	CEOYEAR	TENURE	SALES	PROFIT	RETURN5
COMP	1.000	0.165	-0.049	0.552***	0.418***	-0.073
CEOYEAR		1.000	0.093	-0.018	-0.027	0.175
TENURE			1.000	0.042	0.156	0.024
SALES				1.000	0.696***	-0.246**
PROFIT					1.000	0.195
RETURN5						1.000

Note:

- * Significant at the 10% level.
- ** Significant at the 5% level.
- *** Significant at the 1% level.

Table 4. Pearson Correlation Coefficients for the owner-controlled firms (n=300)

	COMP	CEOYEAR	TENURE	SALES	PROFIT	RETURN5
COMP	1.000	0.146**	-0.081	0.178**	0.424***	0.290***
CEOYEAR		1.000	0.404***	0.022	0.060	0.106
TENURE			1.000	0.040	0.000	-0.194***
SALES				1.000	0.295***	-0.092
PROFIT					1.000	0.335***
RETURN5						1.000

Note:

- * Significant at the 10% level.
- ** Significant at the 5% level.
- *** Significant at the 1% level.

Empirical Models

Tabel 3 shows that for the management-controlled firms, SALES and PROFIT, SALES and RETURN5, are statistically significantly correlated. These suggest that to avoid multicollinearity problem, the regression models should separate these variables to become independent variables in the same regression model. The regression models for management-controlled firms are thus as follows.

$$\text{COMP}_i = b_1 + b_2 \text{CEOYEAR}_i + b_3 \text{TENURE}_i + b_4 \text{SALES}_i + e_i \quad (1)$$

$$\text{COMP}_i = b_1 + b_2 \text{CEOYEAR}_i + b_3 \text{TENURE}_i + b_4 \text{PROFIT}_i + e_i \quad (2)$$

$$\text{COMP}_i = b_1 + b_2 \text{CEOYEAR}_i + b_3 \text{TENURE}_i + b_4 \text{RETURN5}_i + e_i \quad (3)$$

$$\begin{aligned} \text{COMP}_i = & b_1 + b_2 \text{CEOYEAR}_i + \\ & b_3 \text{TENURE}_i + b_4 \text{PROFIT}_i + \\ & b_5 \text{RETURN5}_i + e_i \end{aligned} \quad (4)$$

For the owner-controlled firms, CEOYEAR and TENURE has a quite high correlation coefficient (0.404) and statistically significant at the 1% level. This suggests that CEOYEAR and TENURE variables cannot appear as the independent variables in the same regression model, because by so doing will create multicollinearity problem in the regression. The correlation coefficients also show that SALES and PROFIT as well as PROFIT and RETURN5 are statistically significantly correlated. These also suggest that the regression models should separate these variables to become independent variables in the same regression model. The regression

models for owner-controlled firms are thus as follows.

$$\text{COMP}_i = b_1 + b_2 \text{CEOYEAR}_i + b_3 \text{SALES}_i + e_i \quad (5)$$

$$\text{COMP}_i = b_1 + b_2 \text{TENURE}_i + b_3 \text{SALES}_i + e_i \quad (6)$$

$$\text{COMP}_i = b_1 + b_2 \text{CEOYEAR}_i + b_3 \text{PROFIT}_i + e_i \quad (7)$$

$$\text{COMP}_i = b_1 + b_2 \text{TENURE}_i + b_3 \text{PROFIT}_i + e_i \quad (8)$$

$$\text{COMP}_i = b_1 + b_2 \text{CEOYEAR}_i + b_3 \text{RETURN}_i + e_i \quad (9)$$

$$\text{COMP}_i = b_1 + b_2 \text{TENURE}_i + b_3 \text{RETURN}_i + e_i \quad (10)$$

$$\text{COMP}_i = b_1 + b_2 \text{CEOYEAR}_i + b_3 \text{SALES}_i + b_4 \text{RETURN}_i + e_i \quad (11)$$

$$\text{COMP}_i = b_1 + b_2 \text{TENURE}_i + b_3 \text{SALES}_i + b_4 \text{RETURN}_i + e_i \quad (12)$$

Variables used in the models are as follows.

- COMP is the total compensation received by the CEO deflated by the total assets. COMP consists of realized and deferred annual salary and bonus received, five years salaries and bonuses, stock-gains and other. Stock-gains are the difference in value between what a CEO pays to acquire shares and the value of the shares on the date of exercise. Other compensation covers miscellaneous cash and non-cash remunerations, including automobiles, company-paid health or life insurance, Country Club memberships, company contributions to savings plans and restricted stock award.
- CEOYEAR is the number of years as a CEO in the same firm. This variable is used in the models as a control variable.
- TENURE is the number of years the person is within the firm whether she/he as a CEO or not.

- SALES is defined as a firm's sales volume for a full year. To eliminate the effect of a firm's size, this variable is deflated by firm's total assets.
- PROFIT is defined as income before extraordinary items. To eliminate the effect of a firm's size, this variable is also deflated by firm's total assets.
- RETURN5 is defined as five-years average of stock returns.

RESULTS

The regression results for management-controlled firms appear in Table 5.

The multicollinearity problem is checked using a condition number as suggested by Belsley et al. (1980). The condition number is calculated as the squared root of the largest eigenvalue divided by the smallest eigenvalue. The largest and smallest eigenvalues and the condition numbers are presented in Table 5. All of these condition numbers are below the critical values (20) of potential multicollinearity problem as suggested by Belsley et al. The results suggest that multicollinearity problem does not exist in all of the four regressions.

Another data problem that needs to be verified is heteroscedasticity problem.² The heteroscedasticity problem is tested using Breusch-Pagan method. Breusch and Pagan utilized Lagrange multiplier to test the presence of heteroscedasticity which allows

² The problem of heteroscedasticity exists because the variance of the error term is not constant for all values of the independent variables. Even though this problem does not affect the unbiased estimators, it leads to inefficient estimates and thus makes the statistical tests incorrect. In this case, the problem of heteroscedasticity occurs because this study uses cross-section data. In cross-section data, large and small firms have a tendency to have different disturbance variances. Large firms tend to have large disturbance variance and small firms tend to have small disturbance variance. This situation makes the disturbance variance inconstant across observations.

the disturbance variance to vary with all independent variables. The values of this test are given in Table 5. The results suggest that all the regressions suffered by the heteroscedasticity problem. The problem was solved using White's procedure and the

corrected t-values are given in the parentheses in third line of each variable in Table 5. The values in the second line in the parentheses are t-values before corrected for heteroscedasticity.

Table 5. Management-controlled firm regressions (n=74).

	(1)	(2)	(3)	(4)
INTERCEPT	0.01720 ^{a)} (0.023) ^{b)} (0.018) ^{c)}	0.8305 (1.065) (0.958)	1.2078 (1.328) (0.9330)	1.2990 (1.616) (1.085)
CEOYEAR	0.1152 (1.886)* (1.203)	0.1192 (1.792)* (1.153)	0.1190 (1.589) (1.048)	0.1427 (2.148)** (1.324)
TENURE	-0.1794 (-0.913) (-0.926)	-0.0273 (-1.265) (-1.162)	-0.0129 (-0.543) (-0.506)	-0.0284 (-1.336) (-1.234)
SALES	0.1388 (5.770)*** (3.880)***	-	-	-
PROFIT	-	0.0104 (4.160)*** (5.011)***	-	0.1143 (4.538)*** (4.914)***
RETURN5	-	-	-0.0223 (-0.885) (-0.506)	-0.0434 (-1.907)* (-1.166)
R ²	0.3436	0.2234	0.0422	0.2622
F-value	12.217***	6.713***	1.027***	6.133***
Largest Eigenvalue	3.361	3.091	3.622	3.879
Smallest Eigenvalue	0.047	0.048	0.047	0.047
Condition Number	8.406	7.971	8.791	9.113
Critical value	20	20	20	20
Df	3	3	3	4
Breusch-Pagan χ^2	29.4406	37.0679	22.7558	44.8012
Critical value of χ^2	7.82	7.82	7.82	9.49

Note:

The dependent variabel is COMP.

a) Values in the first line are the regression coefficients.

b) Values in parentheses in the second line are the t-tests before corrected for heteroskedasticity.

c) Values in parentheses in the third line are the t-test after corrected for heteroskedasticity

* significant at the 10% level.

** significant at the 5% level.

*** significant at the 1% level.

The results from Table 5 show that SALES and PROFIT are statistically significant at the 1% level and RETURN5 is insignificant. The results support the first hypothesis that in the management-controlled firms, CEO tend to

focus on sales or profit but not on stock return to increase their wealth.

The regression results for owner-controlled firms appear in Table 6.

Table 6. Owner-controlled firm regressions (n=300).

	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
INTERCEPT	0.7354 ^{a)} (0.517) ^{b)} (0.585) ^{c)}	5.7717 (3.183) ^{***} (3.826) ^{***}	-0.6073 (-0.496) (-0.482)	3.8552 (2.362) ^{**}	-0.6765 (-0.482) (-0.323)	2.1362 (1.066) (0.982)	-3.4060 (-2.189) ^{**} (-1.443)	-0.6211 (-0.297) (-0.259)
CEOYEAR	0.1952 (2.522) ^{**} (1.990) ^{**}	-	0.1666 (2.332) ^{**} (1.771) [*]	-	0.1604 (2.113) ^{**} (1.823) [*]	-	0.1513 (2.036) ^{**} (1.775) [*]	-
TENURE	-	-0.0920 (-1.559) (-2.055) ^{**}	-	-0.0846 (-8.097) ^{***} (-2093) ^{**}	-	-0.0269 (-0.460) (-0.587)	-	-0.0320 (-0.577) (-0.725)
SALES	0.0022 (3.088) ^{***} (4.418) ^{***}	0.0023 (3.185) ^{***} (4.189) ^{***}	-	-	-	-	0.0026 (5.449) ^{***} (4.521) ^{***}	0.0026 (3.793) ^{***} (4.339) ^{***}
PROFIT	-	-	0.0738 (7.984) ^{***} (4.814) ^{***}	-0.7511 (8.097) ^{***} (4.842) ^{***}	-	-	-	-
RETURNS5	-	-	-	-	0.2174 (5.009) ^{***} (2.381) ^{**}	0.2232 (5.036) ^{***} (2.320) ^{**}	0.2326 (5.449) ^{***} (2.548) ^{***}	0.2374 (5.455) ^{***} (2.469) ^{**}
R ²	0.0519	0.0394	0.1944	0.1863	0.0977	0.0847	0.1383	0.1272
F-value	8.128 ^{***}	6.097 ^{***}	35.830 ^{***}	33.993 ^{***}	16.075 ^{***}	13.753 ^{***}	15.841 ^{***}	14.378 ^{***}
Largest Eigenvalue	2.502	2.584	2.389	2.450	2.577	2.608	0.454	3.215
Smallest Eigenvalue	0.127	0.007	0.138	0.007	0.128	0.059	0.110	0.056
Condition Number	4.432	5.964	4.165	5.782	4.485	6.601	5.371	7.539
Critical value	20	20	20	20	20	20	20	20
Df	2	2	2	2	2	2	3	3
Breusch-Pagan χ^2	93.5261	24.6399	292.137	187.971	459.436	403.791	499.083	450.271

Note:

The dependent variabel is COMP.

a) Values in the parentheses in the first line are the regression coefficients.

b) Values in the parentheses in the second line are the t-tests before Corrected for Heteroskedasticity.

c) Values in the third line are the t-test after Corrected for Heteroskedasticity

* significant at the 10% level.

** significant at the 5% level.

*** significant at the 1% level.

The multicollinearity problem is again checked using a condition number as suggested by Belsley et al. (1980). All of these condition numbers are below 20, suggesting that the multicollinearity problem does not exist in all of the eight regressions.

The heteroscedasticity problem is also tested again using Breusch-Pagan method. The results in Table 6 suggest that all the regressions suffered by the heteroscedasticity problem. The problem was solved using White's procedure and the corrected t-values are given in the parentheses in the third line of each variable in Table 6.

The results from Table 6 show that all the three performance measures, SALES, PROFIT and RETURN5, are all statistically significant at the 1% and 5% levels. The results support the second hypothesis that in the owner-controlled firms, CEOs tend to focus on sales, profit and stock return to increase their wealth.

CONCLUSION

This study examines the relationship between firm performance and CEO compensation and hypothesizes that the conflict of interest problem exists in management-controlled firms, while in owner-controlled firms, the problem do not exist. The results of this study support the two hypotheses.

In management-controlled firms, sales and profit performance measures are the determinant of CEO compensation. Increasing sales or profit does not always increase the wealth of the shareholders. But, increasing stock returns does increase the wealth of the shareholders. Therefore, increasing stock returns is consistent with the objective of shareholders. Since CEO compensation is positively related to sales and profit, it can be concluded that in management-controlled firms, the conflict of interest between CEO and shareholders still exists.

In owner-controlled firms, all performance measures, sales, profit and stock returns, are the determinant of CEO compensation. Since increasing stock returns does increase the wealth of the shareholders, it therefore can be concluded that in owner-controlled firms, the conflict of interest between CEO and shareholders does not exist.

The results of this study suggest several things. First, even though CEOs have been compensated, the conflict of interest problem still exists in the management-controlled firms. Second, ownership plays a key role in overcoming the conflict of interest problem. Third, executive compensation must be designed not only to answer how much CEOs have to be paid but rather how they are paid. They should be paid in form of stock options or corporate stocks to increase their ownership in the firm. The results also show that the majority of the U.S. firms in the sample are aware of this problem and they solved the problem by increasing their managers' ownership. As seen in the sample that more than 80% of the 300 firms, that are 374 firms are owner-controlled firms.

This study has several limitations. The first limitation is the data used. This study only uses one year period of data. The second limitation of this study is the definition of the compensation, which is defined as total compensations received by the CEO. Future studies should decompose the total compensation into long-term and short-term compensations. By segregating into short- and long-term components of the total compensation, future studies can examine not only the conflict of interest problem, but also the horizon problem. The horizon problem occurs if managers emphasize only on the short term performance in the expense of long-term performance.

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