DETERMINANTS OF CHIEF EXECUTIVE OFFICER COMPENSATION

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ABSTRACT

This study examines the level and structure of CEO compensation of 2,448 CEO's from 1,622 firms spanning a range extending from 1997 through 2002. Based on agency and expectancy theories, this study tests the hypotheses that corporate diversification is associated with CEO compensation. The results found that the higher degree of international diversification, higher accounting earning performance, higher investment opportunities, and larger firm size, resulted in CEO's receiving higher levels of compensation. In contrast, the higher the degree of industrial diversification, the fewer levels of total compensation, long-term compensation, and stock options corporate CEO's received.

In addition, this study finds that both international and industrial diversification is associated with a greater use of current compensation, as well as a greater reliance on accounting-based, rather than stock return earning (market-based measures) of firm performance.

JEL: M4, M12

KEYWORDS: CEO Compensation, Corporate Divisification, International Divisification, Industrial Diversification, Firm Performance, Investment Opportunity, Stock Ownership

INTRODUCTION

International operations are more profitable than comparable domestic operations (Fatemi, 1984). This belief provides firms with an incentive to expand beyond national boundaries to remain competitive. Firms, therefore, diversify their international operations across different multiple national markets and maintain portfolios of operational units (Duru & Reeb, 2002; Kim, Kim & Pantzalis, 2001; Fatemi, 1984). When a firm's diversification affects the complexity of the operating environment, it is more difficult for boards to monitor executive performance across different markets (Sanders & Carpenter, 1998; Nilakant & Rao, 1994; Zajac & Westphal, 1994). To solve the problem of monitoring executives; boards' configure executive compensation packages to provide incentives for maximizing shareholder wealth. Research has shown that international firms are more effective than domestic firms when motivating employees with compensation other than fixed pay (Sanders & Carpenter, 1998; Eisenhardt, 1989; Jensen & Murphy, 1990). To overcome the task of international monitoring, evidence has shown that boards and shareholders possess the ability to increase incentive based upon long-term compensation than fixed pay to motivate executives (Cyert, Kang & Kumar, 2002; Duru & Reeb, 2002; Kim, Kim & Pantzalis, 2001; Sanders & Carpenter, 1998; Gaver & Gaver, 1995). In contrast, domestic firms may offer a larger portion of pay from fixed salaries (Gaver & Gaver, 1995).

Corporate diversification divided into different industries creates a portfolio of operational units (Kim, Kim & Pantzalis, 2001). Industrial diversification can benefit corporate managers by providing them with more power through compensations (Denis, Densi & Yost, 2002; Stulz, 1990). According to agency theory, increasing the number of business segments can pose executive monitoring difficulties, increase operational complexity and business risk, and thereby reduce shareholder profit. Thus, managers may

reduce shareholders' wealth by increasing agency cost due to overinvestment and higher business risk (Duru & Reeb, 2002; Kim, Kim & Pantzalis, 2001). Denis, Densi and Yost (2002) also find that global diversification has increased over time and correlates with the decline in industrial diversification. In making a comparision between international diversification, and industrial diversification they explain that industrial diversification is "value-reducing" to compensation; whereas, international diversification is "value-enhancing" to compensation (Duru & Reeb, 2002; Kim, Kim & Pantzali, 2001).

This study will investigate the relationship between international diversification, industrial diversification, and CEO compensation. The purpose is to help decision makers, such as board of directors, investors, shareholders and CEOs, construct optimal short-term and long-term compensation contracts that reduce agency cost and maximize shareholder wealth. Research has shown that CEOs of growth firms receive a larger portion of their compensation from long-term incentive compensation, while those of non-growth firms receive a larger portion of their pay from fixed salary. Consequently, it is important to distinguish between the different types and forms of CEO compensation in understanding international diversification and industrial diversification affects on CEO compensation.

LITERATURE REVIEW

When corporations diversify internationally, operations result in a more complex managerial decision-making environment. This complexity, seen through differing operational units, customers, suppliers, types of labor, cultures, laws, rules, regulations, and capital markets (Duru & Reeb, 2002), requires enhanced information processing and specialized knowledge of competitiors' operations as well as the firm's own operations across boundries (Sanders & Carpenter, 1998; Nohria & Ghoshal, 1994). When the firm's diversification affects the complexity of the operating environment, it becomes more difficult for boards to monitor executive performance across different markets (Gomez-Mejia & Balkin, 1992; Nilakant & Rao, 1994; Zajac & Westphal, 1994). Sanders and Carpenter (1998) emphasize that the performance of subsidiary managers may be more difficult to monitor than domestic.

A portfolio of operations associated with the international dispersion of sales, assets, and personnel makes information processing more difficult for boards (Daft, 1992). This results in increased agency costs due to the increased cost and difficulty of monitoring executives from the home office (Roth & O'Donnell, 1996). Moreover, based on expectancy theory, higher executive motivation results in higher firm performance (Vroom, 1964). Under the expectancy theory, individuals will tend to perform in ways that maximize executive rewards and shareholders wealth, minmizing the costs and difficulty of monitoring performance (Hahn & Kleiner, 2002). Meanwhile, Gerhart and Milkovich (1990) found that the higher one's position in the organization's hierarchy, the greater impact it has on organizational performance. Therefore, organizations should provide more bonuses and long-term incentives to high-level managers. Studies have also shown that international diversification is positively associated with executive compensation (Sanders & Carpenter, 1998; Henderson & Fredrickson, 1996). Board of directors offering CEO compensation packages aligned with the maximization of shareholder wealth can resolve problems associated with monitoring executives (Sanders & Carpenter, 1998; Eisenhardt, 1989; Jensen & Murphy, 1990). To overcome the difficulty of monitoring executives internationally, studies have found that boards and shareholders should use more incentive-based, long-term compensation rather than fixed pay to motivate CEOs (Cyert, Kang & Kumar, 2002; Duru & Reeb, 2002; Kim, Kim & Pantzalis, 2001).

Managerial compensation is associated with a firm's size (Jensen & Murphy, 1990). Industrial diversified firms exhibit lower managerial equity ownership (Amihud, Jakov & Lev, 1981). Market disciplinary forces, such as corporate control threats (Denis, Denis, & Sarin, 1997), often precipitate decreases in industrial diversification. Increasing the number of business segments can pose difficulties in monitoring. Consequently, managers might reduce shareholders' wealth through increases in agency cost due to overinvestment (Kim, Kim & Pantzalis, 2001). Additionally, Denis, Densi and Yost (2002) found a

correlation between the increases in global diversification with the decline in industrial diversification. Given that research studies have found that industrial diversification reduces shareholder wealth, this study predicts that industrial diversification results in relatively low compensation (Duru & Reeb, 2002; Denis, Densi & Yost, 2002).

Researchers (Duru & Reeb, 2002) have indicated that companies in different industries are likely to have different measures of company performance. Two types of company performance measures are accounting based measure of performance and market based measure of performance. Stock performances is usually measured by changes in stock prices or stock return.Therefore, firms in industries experiencing rapid growth, or involve rapid product cycles, may benefit from aligning their executives' compensation plans with market-based measures of performance (Grossman & Hoskisson, 1998).

Accounting-based performance measures are incrementally useful over market-based measures in CEO compensation contracts (Duru & Reeb, 2002). In an accounting-based measure of company performance, researchers typically use profitability or stockholders equity (Tosi & Gomez-Mejia, 1994). Profitability measurments are earnings per share (EPS), return on assets (ROA), earnings before interest and taxes (EBIT), and stockholder's equity as return on equity (ROE). The measures of EBIT, ROE and ROA are easily determined, perceived to be objective, and widely understood by owners and managers (Grossman & Hoskisson, 1998). According to Pavlik, Scott and Tiessen (1993), accounting performance is more important than stock performance with respect to cash compensation, while stock return appears to be more important when compensation includes shareholding and options. Financial ratios are widely used in accounting-based measures of firm performance. Some researchers have relied on an internal performance measure, such as profit (Deckop, 1988), return on equity (Redling, 1981), change in shareholder return (Platt, 1987), or a combination of nine measures of performance, including sales, profit, return on equity, and earnings per share (Gomez-Mejia et al., 1987).

When accounting returns are less informative with respect to the executive's actions, there is a greater reliance on market-based measures than on accounting-based measures (Bryan, Hwang, & Lilien, 2000). Executives have discretion in choosing among various accounting or reporting alternatives, which can be used to manipulate accounting earnings. Because of the ability and incentive of executives to arbitrage differing accounting and tax regimes, international settings have a higher likelihood of earnings manipulation than domestic settings (Duru & Reeb, 2002). Moreover, the potential for imperfect hedging on foreign exchange exposure suggests that accounting-based performance measures are more useful than market-based performance measures when there is international diversification (Duru & Reeb, 2002).

CEO's are aware of corporate investment opportunities and are often the investment decision makers (Bryan, Hwang & Lilien, 2000). It is difficult for shareholders to alleviate this information asymmetry without having specialized knowledge. Therefore, such firms are likely to rely on incentive compensation, including stock options (Bryan, Hwang & Lilien, 2000). Shareholder wealth depends upon the successful exploitation of investment opportunities (Myers, 1977). Cyert, Kang and Kumar (2002) found that investment opportunities not only affect CEO effort, but also make the firm more attractive for takeovers; therefore influencing compensation in a complex way (Smith &Watts, 1992).

Duru and Reeb (2002) found a positive relationship between investment opportunities, total compensation and incentive compensation. Smith and Watts (1992) and Kole (1997) demonstrate a strong association between investment opportunities and the use of incentive compensation plans. However, Clinch (1991) and Gaver & Gaver (1993) found no significant relationship between the incidence of a formal restricted stock plan and investment opportunities. Yermack (1995) also finds no evidence that firms with valuable growth opportunities use stock options to provide CEO incentives. Bryan, Hwang, and Lilien (2000) present mixed results for the association between equity-based compensation and firm investment

opportunities. They find that option compensation increases with investment opportunities, while restricted stock grants decrease with a firm's investment opportunities.

Firms with abundant investment opportunities increase the shareholder and board of directors' difficulty in monitoring their CEO. The CEO is more likely to behave in the interest of the principal; thereby raising agency costs to pay higher levels of compensation if the CEOs' interests are better aligned with stockholder interests (Gaver & Gaver, 1993).

Another important element to CEO pay is firm size (Singh, Agarwal, 2003). Firm size also affects firm diversification (Kim, Kim & Pantzalis, 2001). Empirical research finds that firm size is positively associated with the level of executive compensation (Sanders & Carpenter, 1998). Higher levels of compensation are expected to be paid to executives in larger firms (Gaver & Gaver, 1995) because the larger the scope of operations, the greater the demands on top executive. Moreover, since executives who manage larger and more complex firms require greater knowledge and ability than do executives of smaller and less complex firms, they require a higher level of compensation on the external labor market (Rosen, 1982). Ueng, Wells, and Lilly (2000) examined the determinants of CEO pay for small as well as large firms. They found that firm size is a primary factor in determining CEO pay within small firms. Researchers suggest that firm size is positively associated with long-term incentive pay (Cyert, Kang, & Kumar, 2002).

Sales volume (Newman & Banister, 1998) and total assets (1996; Useng et. at., 2000) are two methods generally used to measure firm size. CEO's earn profit for the company through the volume of sales: the higher the sales volume the higher the firm's profit. Due to the small number of units sold in a small firm, even a big increment in managerial efficiency does not yield a large increase in total profits. Conversely, in a large firm, a small increase in profits per unit will result in a large increase in total profits. Thus, large firms with high sales volume are able to compensate CEOs with higher based salaries.

Lastly, CEO stock ownership is another contributing factor that positively correlates with compensation (Cyert, Kang & Kumar, 2002; Sanders & Carpenter, 1998). The level of a CEO's stock ownership is associated with the proportion of pay they receive (Sanders & Carpenter, 1998; Zajac & Westphal, 1994). When CEOs hold a large percentage of their firms' outstanding stock, the CEO is acting more as owner or shareholder than employee is. Consequently, the demand for further stock-based compensation is likely to be diminshed, since the interest of the CEO and shareholders are already relatively aligned (Bryan, Hwang & Lilien, 2000). In order to align the CEO with shareholder interests, international diversified and multi-segment business firms offer higher proportions of company stock, prompting the CEO to act as shareholder, meanwhile, reducing agency costs and CEO compensation.

Yermack (1995) and Kole (1997) found that managerial stock ownership is unrelated to stock option compensation and documents a negative relationship. However, Mehran (1995) and Kole (1997) found no evidence of a negative relationship with managerial stock ownership and restricted stock.

DATA AND METHODOLOGY

This study identified seven hypotheses associated as determinants of chief executive officer compensation. They are listed as follows:

Hypothesis: H_1 *International diversification is positively associated with total compensation.*

Hypothesis: H_2 *Industrial diversification is negatively associated with total compensation.*

Hypothesis: H_3 *Market-based performance is positively associated with total compensation.*

Hypothesis: H_4 *Accounting-based performance is positively associated with total compensation.*

Hypothesis: H_5 *Investment opportunities are positively associated with total compensation.*

Hypothesis: H_6 *Firm size is positively associated with total compensation.*

Hypothesis: H_7 *Stock ownership is negatively associated with total compensation.*

To test hypotheses 1 through 7, hierarchical regression was employed. The regression model to test CEO compensation structure is shown below.

CEO compensation structure *i* = f (INTD, INDD, RET, ACE, IO, SIZE, OWN, Tenure, Age, Duality, Gender)

When *i*=a CEO compensation structure = total compensation

INTD	International Diversification
INDD	Industrial Diversification
RET	Market-based measure of performance
ACE	Accounting-based measure of performance
IO	Investment Opportunities
SIZE	Firm Size
OWN	Stock Ownership
Tenure	CEO tenure position
Age	CEO age
Duality	CEO duality
Gender	CEO gender

The dependent variable in this model is the level and structure of CEO compensation, including Total Compensation designated as (TC). ExecuComp database was the source for the data. The independent variables in the study are as follows: International Diversification (INTD), Industrial Diversification (INDD), Firm performance (FP), Investment Opportunity (IO), Firm Size (SIZE), and Stock Ownership (OWN). COMPUSTAT's Geographic Segment File, COMPUSTAT's Industry Segment File, COMPUSTAT's database, and the CRSP database obtained the data for the independent variables.The Control variables are CEO position, tenure, age, duality, and gender.

The sample consisted of secondary data selected from three databases and supplemented with additional data from the Security and Exchange Commission (SEC). Company stock-return data from the Center for Research in Security Prices (CRSP) along with financial statement data made available from Standard & Poor's Research Insight was included. The ExecuComp database, based on the S&P 400, S&P 500, and S&P 600 indexes that comprise large, mid, and small-cap firms was selected for use because it reduces the time investment required to extract data from proxy statements and alleviates the difficulty of extracting specific information from individual company reports. However, there is often missing data, particularly relating to age and employment starting dates.Thus, it was necessary to supplement information in the ExecuComp database with information contained in Lexis/Nexis.

CEO compensation data selected from Standard & Poor's COMPUSTAT ExecuComp (1997-2002) covers total compensation and current compensation, such as salary and bonuses. The data also contains long-term compensation, such as long-term incentive plans, restricted stocks, stock appreciation rights,

and stock options granted. Most studies of CEO compensation rely upon secondary data from filings with the Securities and Exchange Commission (Miller, 1995). International diversification data obtained from COMPUSTAT's Geographic Segment File classified firms as multinational, if firms report any foreign sales on COMPUSTAT's Geographic Segment File; otherwise, they are domestic firms. COMPUSTAT limits the number of global segments to five. Industrial diversification data obtained from COMPUSTAT's Industry Segment File classified firms as multi-segment if they report more than one business segment; otherwise, they are single-segment firms. COMPUSTAT limits the number of industrial segments to ten.

This study classified each firm's primary Standard Industrial Classification (SIC) Code according to the 10-K product breakdown (SIC), and classified each firm according to the industry classification scheme suggested by Lippert and Moore (1995) and further modified in this study. Table 4 provides a list of the 1,622 firms, industry classes, and the SIC codes used in this study.

A multiple regression model identified the determinants of CEO compensation. CEO compensation was the dependent variable (Y) predicted by the independent variables, control variables, and moderator variables. The first series of regression analyses tested the relationship between corporate diversification and various components of compensation.Therefore, the model for estimation became:

$$TC_{t,i}=a_0+a_1INTD+a_2INDD+a_3RET+a_4ACE+a_5IO+a_6SIZE+a_7OWN+a_8Tenure+a_9Age+a_{10}Duality+a_{11}Gender+\varepsilon_{t,i} \quad (1)$$

Where,

a_0= the constant of regression equation model 1

$a_1, a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9, a_{10}, a_{11}$ = coefficient of *INTD,INDD,RET,ACE,IO,SIZE,OWN,Tenure,Age,Duality,Gender*

TC	denotes total compensation for firm i at time period t; it is a dependent variable in equation 1.
INTD	denotes international diversification.
INDD	denotes industrial diversification.
ACE	denotes accounting-based performance and is measured by annual earnings before interest and taxes (EBIT).
RET	denotes market-based performance measured by end of the fiscal year common stock return.
IO	denotes investment opportunities and is measured by R & D expenditures scaled by the market value of the firm.
SIZE	denotes firm size and is measured by total assets.
OWN	denotes stock ownership and is measured by the percentage of the company's shares owned by the named CEO officer.

Tenure denotes CEO's tenure and is the number of years that the CEO had held his/her current position at the end of the fiscal year.

Age denotes CEO's age and is the age of the CEO at the end of the fiscal year

Duality denotes CEO's duality and refers to the situation in which a CEO holds both the CEO and chairperson of the board positions.

Gender denotes CEO's gender and is the proxy gender of CEO, dummy variables, 1= male; 0= female

$\varepsilon_{t,i}$ is the error term (all measured for firm i at time period t).

Table 1 Frequency statistics for CEOs (N=2,448)

	SIC codes	Number of Observations	%
Panel A: Filing Year			
1997		335	14
1998		414	17
1999		828	33
2000		438	18
2001		433	15
2002		71	3
Total		2,448	100.0
Panel B: Type of Industry (SIC)			
0 = aerospace and shipbuilding	3720-3829	96	3.9
1= agriculture and metal	0000-1099, 1400-1499	34	1.4
2= cars	3711-3716	42	1.7
3= chemical, tire, and leather	2800-2821, 3011-3199	73	3.0
4= commodity	4812-4899	47	1.9
5= computer and software	3570-3579, 7370-7389	299	12.2
6= construction, wood, furniture and house	1500-1799, 2400-2599, 2840-2844, 3200-3299	86	3.5
7= electric	3661-3699	161	6.6
8= entertainment	7000-7369, 7400-7999	93	3.8
9= finance	6000-6799	190	7.8
10= food and tobacco	2000-2199	69	2.8
11= health, education and law	8000-9999	93	3.8
12= machinery	3510-3569, 3580-3652	138	5.6
13= medical, photo and other	3841-3999	81	3.3
14= paper and publish	2600-2673, 2711-2780	81	3.3
15= petroleum and refinery	1220-1389, 2911-2999	87	3.6
16= retail and wholesale	5000-5999	306	12.5
17= steel	3300-3496	102	4.2
18= textile	2200-2399	34	1.4
19= transportation	4011-4799	61	2.5
20= utility	4911-4991	160	6.5
21=others	2833-2836, 2851-2891	115	4.7
Total CEOs		2,448	100.0

Note. Data are comprised of 2,448 CEOs observations with the mean for each CEO over the six-year period from 1997-2002. This table shows the Frequency statistics for CEOs.

RESULTS

This study extracts each firm's primary SIC code according to a 10-K product breakdown (SIC). Each firm is classified according to the industry classification scheme suggested by Lippert and Moore (1995), which was modified for this study. Table 2 present descriptive statistics for the CEOs sample.

Panel A presents the mean, median, standard deviation, and minimum and maximum for dependent and independent variables, as well as information on total CEO compensation. Mean and median total compensations during the period (1997-2002) are $5,198,947.00 and $2,354,788.00, respectively.

Panel B presents the mean, median, standard deviation, and minimum and maximum for the control variables, which included tenure, age, duality, and gender. Tenure is the number of days that a CEO has held his or her current position at the end of the fiscal year. The mean and median of tenure during the period 1997-2002 are 2,947.66 and 2,192 days, respectively. Age is the age of the CEO at the end of the fiscal year. The mean and median of age during the period 1997-2002 is 56.91 years and 57 years. Duality is considered 1 if the CEO is the Chairman, otherwise it is 0. Mean and median of duality during the period 1997-2002 is 0.56 and 0.67, respectively. Gender is considered 1 if the CEO is male and 0 if CEO is female. The mean and median of gender during the period 1997-2002 is 0.96 and 1.00 respectively.

Panel C presents the mean, median, standard deviation, and minimum and maximum for the firm characteristic variables, which include total assets, sales, capital expense, EBIT/sales, R&D/sales, capital expense/sales, and market value/capital expense.The mean and median of assets during the period 1997-2002 is $7,994,000.00 and $1,199,900.00, respectively. The mean and median of sales during the period 1997-2002 is $4,346,940.00 and $1,102,440.00 respectively. The mean and median of capital expense during the period 1997-2002 is $312,110.00 and $59,390.00 respectively. The mean and median of EBIT/Sales during the period 1997-2002 is $89,700.00 and $510.00 respectively. The mean and median of R&D expense/sales during the period (1997-2002) is $200 and $3, respectively. The mean and median of capital expense/Sales during the period (1997-2002) is $13 and $5, respectively.

Table 2. Descriptive Statistic- Dependent and Independent Variables

Panel A: Variables	**Number of Observations** [a]	**Mean**	**Median**	**Std. Deviation**	**Minimum**	**Maximum**
Total Compensation	2,434	5,198.95	2,354.79	11,795.97	0	273,415.47
International Diversification	2,448	3.29	3	1.11	0	5
Industrial Diversification	2,448	2.55	2.33	1.57	1	10
Market-based Performance	2,448	0.01	0	0.04	-0.13	1.03
Accounting- based Performance	2,448	525.29	99.47	2,140.96	-10,537	39,093.5
Investment Opportunities	1,465	0.05	0.02	0.1	0	1.82
Firm size(Assets)	2,448	7,994	1,199.97	35,813.94	8.66	692,789
Stock Ownership	2,448	8,984.05	0.28	444,303.97	0	21,982,950.44
Panel B: Control Variable						
Tenure [b] (day)	1,069	2,947.66	2,192	2,774.43	13	19,935
Age	1,288	56.91	57	7.75	36	89
Duality [c]	2,448	0.56	0.67	0.45	0	1
Gernder [d]	2,448	0.96	1	0.18	0	1
Panel C: Firm Characteristic (000s)						
Assets	2,448	7,994	1,199.97	35,813.94	8.66	692,789
Sales	2,448	4,346.94	1,102.44	11,799.42	0	180,041.33
Capital Exp	2,426	312.11	51.39	1,270.14	0	31,672.5
EBIT/Sales	2,445	89.7	0.51	796.75	-10,537	30,877
R&D/Sales	1,464	0.22	0.03	2.7	0	96.1
Capital Exp/ Sales	2,423	0.13	0.05	1.75	0	85.68
Market Value/ Capital Exp	2,364	64.27	24.1	264.19	0.05	10996.64

Note. [a] *n=the mean for each CEO over the six-years period (1997-2002)* [b] *days* [c] *recoded as 1=CEO and chairperson, 0= otherwise.* [d] *recoded as 0=female, 1=male. This table shows the descriptive statistics for the CEOs sample.*

Since multicollinearity between independent variables causes large variances and covariances for the estimators of the regression coefficients, it becomes difficult to distinguish their relative influences. This problem addressed by deriving the correlation coefficient matrix shown in Table 3.The correlations between variables were computed by using Pearson Correlation Coefficients.

The correlation matrix in Table 3 shows that the strongest correlation coefficient among the independent variables was 0.751 between firm size and accounting-based performance. The second highest correlation coefficient was 0.418 between firm size and industrial diversification. Gujarati (1988) suggests that simple correlations between independent variables should not be considered “harmful” unless they exceed

0.80 or 0.90. The Pearson correlations coefficient suggests that multicollinearity is not severe for the independent variables in this study.

Table 3 Pearson Correlation Coefficient Matrix

Variables [a]	1	2	3	4	5	6	7	8	9	10	11	12
1.Total Compensation	1											
2.International Diversification	0.85**	1										
3.Industry Diversification	0.07**	0.15**	1									
4.Market based Performance	-0.06**	-0.01	-0.01	1								
5.Accounting based Performance	0.26**	0.08**	0.33**	-0.09**	1							
6.Investment opportunities	0.02**	0.35**	0.08**	-0.05	-0.30**	1						
7.Stock ownership	-0.19**	-0.11**	-0.15**	0.03	-0.19**	-0.09**	1					
8.Firm size	0.37**	0.12**	0.428**	-0.05**	0.75**	-0.14**	-0.25**	1				
9.Gender [b]	-0.06**	0.02	-0.04	0.01	-0.01	-0.02	0.06**	-0.03	1			
10.Age	-0.08**	0	0.07*	-0.02	0.13**	-0.01	0.17**	0.12**	0.11**	1		
11.Duality	0.06**	0.04	0.10**	-0.02	0.25**	0	0.11**	0.27**	0.02	0.27**	1	
12.Tenure	0.01	-0.05	-0.03	-0.05	0.20**	-0.12**	0.34**	0.09**	0.13**	0.37**	0.30**	[1]

*This table shows the correlations between variablesby using Pearson Correlation Coefficients. Note. values [a] of n ranged from 1,069 to 2,448 [b] *p<0.01; **P<.05.*

To test hypotheses 1 through 7, hierarchical regression was employed. The first step was to enter the control variables (tenure, age, duality and gender) into the equations. The second step was to enter the various independent variables representing international diversification, industrial diversification, investment opportunities, firm size, firm performance, and stock ownership. The significance of the change in R^2 from steps 1 and 2 provides a test of whether the set of predictor variables in step 2 explain a significant amount of the variance in CEO compensation beyond that already explained by the control variables.

Table 4 reports the results of the hierarchical regression for total compensation in full model, which examined hypotheses H_1, H_2, H_3, H_4, H_5, H_6, and H_7

Table 5 reports the results of the estimated two models (controls variables only and a full model, which includes control variables plus the main effects of independent variables) to examine hypotheses H_1, H_2, H_3, H_4, H_5, H_6, and H_7

Hypothesis H_1 **:** International diversification is positively associated with total compensation.
Hypothesis H_2**:** Industrial diversification is negatively associated with total compensation.
Hypothesis H_3**:** Market-based performance is positively associated with total compensation.
Hypothesis H_4**:** Accounting-based performance is positively associated with total compensation.
Hypothesis H_5: Investment opportunities are positively associated with total compensation.
Hypothesis H_6**:** Firm size is positively associated with total compensation.
Hypothesis H_7**:** Stock ownership is negatively associated with total compensation.

Table 4: Hierarchical Regression of Total Compensation on International Diversification and Industrial Diversification (Hypothesis H_1, H_2, H_3, H_4, H_5, H_6, and H_7) Model 1

Variables	Total Compensation[a] β	t	Δ R^2	Δ F
Step 1:			0.041	24.548***
Control Variables				
Tenure	0.058**	3.414		
Age	-0.053**	-3.179		
Duality	0.031**	1.770		
Gender	-0.049**	-3.001		
Step 2:			0.33	181.37***
Predictor Variables				
International Diversification	0.085***	4.981		
Industrial Diversification	-0.084***	-4.678		
Market-based Performance	-0.003	-0.160		
Accounting-based Performance	0.063**	2.443		
Investment Opportunities	0.067***	3.782		
Firm Size	0.546***	20.930		
Stock Ownership	-0.053**	-3.026		
Overall R^2 and F			0.37	129.879***
Adjusted R^2			0.37	

This table reports the results of the hierarchical regression for total compensation in full model, which examined hypotheses H_1, H_2, H_3, H_4, H_5, H_6, *and* H_7. [a]*n*= 2,435 [b]Beta weights and *t*-values reflect results for the full model and hieratical models † *p<0.10; *p<0.05; **p<0.01; ***p<0.001. T*

Table 5: Results of Regression Equations Model 1 Analysis for Total Compensation

$$TC_{t,i}=a_0+a_1INTD+a_2INDD+a_3RET+a_4ACE+a_5IO+a_6SIZE+a_7OWN+a_8Tenure+a_9Age+a_{10}Duality+a_{11}Gender+\varepsilon_{t,i} \quad ...(1)$$

Variable	Model 1	Model 2
a_1 International Diversification (INTD)		0.085***
		(4.981)
a_2 Industry Diversification (INDD)		-0.084***
		(-4.678)
a_3 Market based Performance(RET)		-0.003
		(-0.160)
a_4 Accounting based Performance(ACE)		0.063**
		(2.443)
$a5$ Investment Opportunities (IO)		0.067***
		(3.782)
a_6 Firm Size (SIZE)		0.546***
		(20.930)
a_7 Stock Ownership (OWN)		-0.053**
		(-3.026)
a_8 Tenure	0.056**	0.058**
	(2.766)	(3.414)
a_9 Age	-0.040*	-0.053**
	(-1.983)	(-3.179)
a_{10} Duality	0.180***	0.031**
	(8.717)	(1.770)
a_{11} Gender	-0.064**	-0.049**
	(-3.192)	(-3.001)
Adjusted R^2	0.040	0.368
Change in adjusted R^2	0.041***	0.330***

When the predicted sign is either (+) or (-), then the p value is a one-tailed test; when the predicted sign is (?), then the p value is a two-tailed test. This table shows the Results of Regression Equations Model 1 Analysis for Total Compensation. Note. [a]n= *2,435,* [b]*Beta weights and* t-*values reflect results for the full model. † p*<0.10; **p*<0.05; ***p*<0.01; ****p*<0.001

An examination of the zero-order correlations reveals that total compensation was correlated with all seven measures of predictor variables (international diversification r = 0.116; industrial diversification = 0.283; market-based performance = -0.053; accounting based performance = 0.612; investment

opportunities = -0.113; stock ownership = -0.118; and firm size = 0.617). To test the relationship between the seven independent variables as a whole and total compensation, a hierarchical regression model was created by entering the control variables in step 1 and the seven independent variables in step 2, as discussed above. Standardized regression weights (beta) were reported for ease in comparing the strength of the relationship between total compensation and the various predictor variables in each regression model.As indicated by the significant overall F score (129.879, p<.001), the total set of predictor variables was significantly related to total compensation. In addition, the set of predictor variables explained 37.1 % (adjusted R^2) of the variance in the dependent measure of total compensation.

Hypothesis H_1: International diversification is positively associated with total compensation. The result of international diversification (β =0.085, t =4.981, p<.001) shows there is a positive significant relationship between international diversification and total compensation. Thus, the result supports hypothesis H_1 that international diversification is positively associated with total compensation. This result demonstrates that the higher the degree of international diversification, the higher the total compensation paid to CEOs.

Hypothesis H_2: Industrial diversification is negatively associated with total compensation. The result of industrial diversification (β =-0.084, t=-4.678, p<.001) shows there is a negative significant relationship between industrial diversification and total compensation. Thus, the result supports hypothesis H_2 that industrial diversification is negatively associated with total compensation. The results demonstrate that the higher the number of business segments with the higher dispersion of optional risk, the less total compensation paid to CEOs.

Hypothesis H_3**:** Market-based performance is positively associated with total compensation. The result of market-based performance (β =-0.003, t =-160, p>0.1) indicated that the null hypothesis cannot be rejected; therefore, this study concludes that market-based performance is not significantly associated with total compensation. Thus, hypothesis is rejected.

Hypothesis H_4**:** Accounting-based performance is positively associated with total compensation. The result supports hypothesis H_4 that accounting-based performance is positively associated with total compensation. The results demonstrate that the higher the earnings of firms, the higher the total compensation paid to CEOs.

Hypothesis H_5: Investment opportunities are positively associated with total compensation. The investment opportunities result (β =0.067, t =3.782, p<.001) shows a positive significant relationship between investment opportunities and total compensation. Thus, the results support hypothesis H_5 that investment opportunities is positively associated with total compensation. The results demonstrate that the more investment opportunities firms have, the higher the total compensation paid to CEOs.

Hypothesis H_6**:** Firm size is positively associated with total compensation. The result of firm size (β =0.546, t =20.930, p<.001) shows that there is a positive significant relationship between firm size and total compensation. Thus, the result supports hypothesis H_6 that firm size is positively associated with total compensation. The results demonstrate that CEOs in larger firms receive more total compensation than CEOs in small firms.

Hypothesis H_7**:** Stock ownership is negatively associated with total compensation. The stock ownership results (β =-0.053, t =-3.026, p<.01) show that there is a negative significant relationship between stock ownership and total compensation. Thus, the results support hypothesis H_7 that stock ownership is

negatively associated with total compensation. The results demonstrate that when CEOs own more of the outstanding stock of the firm, they receive less total compensation pay.

Taken together, these results provide support for hypotheses H_1, H_2, H_4, H_5, H_6, and H_7. The results did not support hypothesisH_3. The findings also lead support to the existing literature on corporate diversification and CEO compensation by showing that stock ownership is an important factor influencing corporate diversification and CEO compensation.

CONCLUSIONS

This study examined CEO compensation of 2,448 CEOs from 1997 through 2002. Based on agency and expectancy theories, this study tests and hypotheses related to corporate diversification being associated with CEO compensation. The results show that the higher the degree of international diversification, and the higher accounting earnings performance, investment opportunities, and firm size, the more CEOs receive in compensation. In contrast, the higher the degree of industrial diversification, the less CEOs receive in total compensation. CEOs owning greater outstanding stock make less use of CEO compensation.

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