

## **Determinants of Chief Executive Officer Stock Options Compensation**

**Hwei Cheng Wang, CPA**

*University of Maryland Eastern Shore, U.S.A.*

E-mail: [wwang@umes.edu](mailto:wwang@umes.edu)

**Yung-I Lou, CPA**

*Providence University, Taiwan*

E-mail: [yilou@pu.edu.tw](mailto:yilou@pu.edu.tw)

**Nicole A. Buzzetto-Hollywood**

*University of Maryland Eastern Shore, U.S.A.*

E-mail: [Nabuzzetto-More@umes.edu](mailto:Nabuzzetto-More@umes.edu)

**Ladda Vatjanasaregagul**

*Sukhothai Thammathirat Open University*

E-mail: [vatjanas@gmail.com](mailto:vatjanas@gmail.com)

### **Abstract**

This study examines the determinants of CEO Stock Options compensation. Stock options are defined as the aggregate value of all options granted to the executive during the year as valued by the company. The sample was carried out on 2,448 CEO's from 1,622 firms spanning a range from 1997-2002. The determinants of CEO Stock Options compensation are international diversification, industry diversification, firm performance, investment opportunities, firm size, and stock ownership.

This study employs the concept of corporate diversification as identified by Duru and Reeb (2002) and Kim, et al. (2001) that divides corporate diversification into international diversification and industrial diversification.

This study is the first study to examine whether industrial diversification is negatively associated with stock options compensation. Our findings show that there is a negative significant relationship between industrial diversification and stock options compensation.

The results also show that the higher the degree of international diversification, investment opportunities, and firm size, the more CEOs receive in stock options. In contrast, the higher the degree of industrial diversification, the lesser CEOs receive in stock options. CEOs that have greater outstanding stock ownership make less use of CEOs stock options.

**Keywords:** CEO Compensation; Corporate Diversification; International Diversification; Industrial Diversification; Firm Performance; Investment Opportunity; Stock Ownership

## 1. Introduction

Chief executive officer (CEO) compensation and its relationship to corporate performance have become an important issue in managerial, economic, accounting, and financial circles (Pavlik, Scott, & Tiessen, 1993). In the past decade, equity-based compensation has drawn considerable public scrutiny (Cyert et al. 2002; Gaver & Gaver, 1993, 1995; Crystal, 1991; Byrne, 1996; Lublin, 1996; Lambert & Larcker, 1987). Many researchers have examined the relationship between CEOs compensation and corporate governance mechanisms (Cyert, Kang & Kumar, 2002; Sanders & Carpenter, 1998). Moreover, a growing number of researchers have found a link between incentive compensation and performance (Kaplan, 1994; Jensen & Murphy, 1990). Research has shown that CEO of larger firms receive a larger portion of their compensation from long-term incentive compensation, while those of smaller firms receive a larger portion of their pay from fixed salary. Consequently, it is important to understand the factors of CEOs Stock Options.

However, few researchers have analyzed the key factors of the impact of CEO stock options. According to Standard and Poors Research Insight (2004), stock options are defined as the aggregate value of all options granted to the executive during the year as valued by the company. In order to help decision makers, such as board of directors, investors, shareholders, and CEOs, there should be construct of optimal short-term and long-term compensation contracts that will reduce agency cost and maximize shareholder's wealth.

The U.S. Securities and Exchange Commission (SEC) requires the firms to report information on the compensation of their five most highly paid executives, which typically includes the Chief Executive Officer (CEO). According to Standard and Poors Research Insight (2004), CEO compensation is defined as follows: Total compensation for the individual year, comprised of the following: salary, bonus, other Annual, total value of restricted stocks granted, total value of stock options granted (using Black-Scholes method), long-term incentive payouts, and all other total compensation.

The rest of the paper is organized as follows. Section 2 reviews the literature and hypotheses development, section 3 outlines the research design, data and Methodology, section 4 Analysis and presentation of findings, section 5 contains the empirical results and section 6 conclusion.

## 2. Literature Review and Hypotheses Development

This study examines the determinants of stock options compensation. The determinants of stock options in this study are international diversification, industry diversification, firm performance, investment opportunities, firm size, and stock ownership.

In this study, corporate diversification is separated into international diversification and industrial diversification (Kim, et al., 2001). This study employs the concept of corporate diversification as identified by Duru and Reeb (2002) and Kim, et al. (2001) that divides corporate diversification into international diversification and industrial diversification.

In order to explore whether corporate diversification has impact on stock options, this study utilized agency theory which asserts that, the contract between the principal and the agent is outcome based, the agent is more likely to behave in the interests of the principal; thereby increasing CEO stock options will maximize shareholders wealth. This study also utilized expectancy theory which proposes that higher motivation will have higher firm performance; therefore, increasing CEO motivation will bring about better firm performance. Therefore, this study applied both agency theory and expectancy theory to become a simple combination model. As a result, agency theory and expectancy theory implies that higher CEO stock options will have higher motivation to CEO; higher motivation will have higher firm performance, accordingly, higher firm performance will maximize shareholders wealth.

This study examines the determinants of stock options compensation. The determinants of stock options in this study are international diversification, industry diversification, firm performance, investment opportunities, firm size, and stock ownership.

In this study, corporate diversification is separated into international diversification and industrial diversification (Kim, et al., 2001). This study employs the concept of corporate diversification as identified by Duru and Reeb (2002) and Kim, et al. (2001) that divides corporate diversification into international diversification and industrial diversification.

In order to explore whether corporate diversification has impact on stock options, this study utilized agency theory which asserts that, the contract between the principal and the agent is outcome based, the agent is more likely to behave in the interests of the principal; thereby increasing CEO stock options will maximize shareholders wealth. This study also utilized expectancy theory which proposes that higher motivation will have higher firm performance; therefore, increasing CEO motivation will bring about better firm performance. Therefore, this study applied both agency theory and expectancy theory to become a simple combination model. As a result, agency theory and expectancy theory implies that higher CEO stock options will have higher motivation to CEO; higher motivation will have higher firm performance, accordingly, higher firm performance will maximize shareholders wealth.

### **2.1. International Diversification and CEO Stock Options (H1)**

International operations are more profitable than comparable domestic operations (Fatemi, 1984). This differential provides the firms with an inducement to expand beyond national boundaries in order to maintain the competitiveness, and also diversify their international operations across multiple markets and operational units (Duru & Reeb, 2002; Kim, et al., 2001; Fatemi, 1984). When corporations diversify internationally, operations result in a more complex managerial decision-making environment (Duru & Reeb, 2002; Finkelstein & Hambrick, 1989). When the firm's diversification affects the complexity of the operating environment, it becomes more difficult for the board to directly monitor executive performance across different markets (Sanders & Carpenter, 1998; Eisenhardt, 1989; Gomez-Mejia & Balkin, 1992; Nilakant & Rao, 1994; Zajac & Westphal, 1994). Sanders and Carpenter (1998) emphasized that, subsidiary managers maybe even more difficult to monitor than domestic managers.

A portfolio of operations associated with the international dispersion of sales, assets, and personnel makes information processing more difficult for the board (Daft, 1992). This results in increased agency cost due to the increased cost and difficulty of monitoring executives from their offices (Roth & O'Donnell, 1996).

To overcome the difficulty of monitoring executives internationally, studies have found that boards and shareholders should use more incentive-based, to stronger stock options compensation, rather than fixed pay in the total pay structure to motivate CEO.

Thus, this study predicts that international diversification is positively associated with CEO stock options. Therefore, it can be expected that Hypothesis  $H_1$  : International diversification is positively associated with stock options.

### **2.2. Industrial Diversification and CEO Stock Options (H2)**

Corporate diversification into different industries creates a portfolio of operational units (Kim, Kim & Pantzalis, 2001). Industrial diversified firms are characterized by lower managerial equity ownership (Amihud, Jakov & Lev, 1981). Increasing the number of business segments can result in getting difficulties in monitoring. Consequently, managers might reduce shareholders' wealth through increase in agency cost due to overinvestment (Kim, Kim & Pantzalis, 2001).

Additionally, Denis, Densi and Yost (2002) found that global diversification has increased over time and is correlated with the decline in industrial diversification over the same period. Compared to international diversification, which is value-enhancing to compensation, industrial diversification is value-reducing to compensation (Duru & Reeb, 2002). Given that research studies have found that industrial diversification reduces shareholders wealth, this study predicts that industrial diversification results in relatively low compensation (Duru & Reeb, 2002; Denis, Densi & Yost, 2002).

Based on agency theory, the firms with more business segments; higher degree of industrial diversification may disperse optional risk, which causes the firms to pay less compensation pay to CEO, thereby, reducing agency cost.

Therefore:

Hypothesis  $H_2$  : Industrial diversification is negatively associated with stock options.

### 2.3. Firm Performance and CEO Stock Options (H3 and H4)

Researchers (Duru & Reeb, 2002; Balkin, Markman, & Gomez-Mejia, 2000; Grossman & Hoskisson, 1998) indicated that companies in different industries are likely to have different measures of company performance. Two types of company performance measures are the accounting based measure of performance and the market based measure of performance. Sanders and Carpenter (1998) pointed out that firms with high levels of performance may be able to pay more compensation than those that are performing less. International diversification is positively associated with CEOs compensation (Duru & Reeb, 2002); whereas, industry diversification is negatively associated with CEOs compensation (Duru & Reeb, 2002).

Moreover, corporate diversification is on average associated with increase in the firm's value (shareholder wealth). Therefore, this study hypothesizes that international diversification and industrial diversification affects the firm's performance, which, in turn, has effect on CEOs stock options.

This study also focuses on the effects of international and industrial diversification on the choice between market-based, and accounting-based performance measures of CEOs stock options. Thus, this study explores which of the two measures of company performance is most appropriate for CEO stock options compensation for firms with greater diversification.

Consistent with previous literature, the accounting-based measure of performance for this study is defined as annual earnings before interest and taxes (EBIT); the market-based measure of performance is defined as the common stock return at the end of the fiscal year.

#### 2.3.1. Market-based, Measures of Performance (H3)

Market-based, measures of performance are often centered around some measures of the price of a single share of a company's outstanding stock on a common stock exchange and stock return. Stock performance is usually measured by changes in stock prices or stock return

#### 2.3.2. Accounting Based Measures of Performance (H4)

Accounting-based performance measures are incrementally useful over market-based measures in the CEO compensation contracts (Duru & Reeb, 2002; Holmstrom, 1979; Banker & Datar, 1989; Bushman & Indjejikian, 1993; Baber et al., 1996). In an accounting-based measure of company performance, researchers typically use profitability or stockholders' equity as measures (Dyl, 1988; Tosi & Gomez-Mejia, 1994). Profitability is usually measured as EPS or ROA or EBIT and stockholder's equity as ROE. The measures of EBIT, ROE and ROA are easily determined, widely understood, and perceived to be objective by owners and managers alike (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 including shareholding and options. Financial ratios are widely used in accounting-based measures on firm performance.

In addition, this study is based on the expectancy theory utilizing CEO stock options as motivational strategy to motivate CEO in order to increase firm performance in an effort that is consistent with shareholders wealth maximization. The performance improved, thereby, producing the expected CEO stock options compensation reward as expectancy theory proposition asserts, that increasing motivation increased performance outcome.

Therefore, it can be expected that

Hypothesis  $H_3$  : Market-based performance is positively associated with stock options.

Hypothesis  $H_4$  : Accounting-based performance is positively associated with stock options.

#### **2.4. Investment Opportunity and CEO Stock Options (H5)**

CEO know corporate investment opportunities and are often the investment decision makers (Bryan, Hwang & Lilien, 2000). Firms with abundant investment opportunities increase the shareholders and board of directors' difficulty in monitoring their CEO, there should be a better aligning of the CEO's interests with the stockholders' interests, and increase in the CEOs stock options, the CEO is more likely to behave in the interests of the principal, thereby raising agency costs to pay higher level of compensation to their CEO (Gaver & Gaver, 1993). In order to reduce the shareholders and board of director's difficulties in monitoring the CEO, stock options compensation, motivational strategy based on expectancy theory should be utilized to motivate managers in order to increase the firm's performance and also to allow the managers make decisions that are consistent with shareholder wealth maximization, when the performance is improved and it will thereby produce the expected compensation reward.

Thus, this study predicts that investment opportunities are positively associated with CEO stock options. Hence:

Hypothesis  $H_5$  : Investment opportunities are positively associated with stock options.

#### **2.5. Firm Size and CEO Stock Options (H6)**

Firm size affect managerial compensation (Jensen & Murphy, 1990; Sanders & Carpenter, 1998). Firm size is the key determinant of CEO pay (Singh, Agarwal, 2003). Moreover, firm size have effect on firm diversification (Kim, Kim & Pantzalis, 2001). If a firm's size is positively associated with a firm's international diversification, then it should have similar implications for CEO stock options. CEO who work in large firms with a high international diversification should also be compensated for the increased work burden they carry. Empirical research found that firm size is positively associated with the level of executive compensation (Sanders & Carpenter, 1998; Finkelstein & Hambrick, 1996; Gaver & Gaver, 1995; Geomez-Mejia, 1994). 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 executives of smaller and less complex firms do, they require a higher level of compensation on the external labor market (Becker, 1964; Rosen, 1982).

Sales volume (Baker, Jensen & Murphy, 1988; Newman & Banister, 1998) and total assets (Baumol, 1959; Marris, 1963; Sridharan, 1996; Ueng et al., 2000) are two generally used measures of firm size. Firm size is generally measured by assets, but sales can also be used to determine firm size. Sales volume is also considered a measure of firm size because CEO earns profit for the company through the volume of sales; the higher the sale volume sold, the higher the firm profit.

Thus, this study predicts that firm size is positively associated with CEO stock options, where CEO's from firms with high international diversification have more complex work than domestic CEO in domestic environments. This study, thereby argues that firm size has an impact on the effect of international and industrial diversification on CEO stock options.

Hypothesis  $H_6$  : Firm size is positively associated with stock options.

## 2.6. Stock Ownership and CEO Stock Options (H7)

CEO stock ownership is strongly related to compensation (Cyert, Kang & Kumar, 2002; Sanders & Carpenter, 1998). When a CEO holds a large fraction of their firms' outstanding stock, the CEOs are acting more as owners or shareholders than employees are. Therefore it reduces the principal and agency relationship on agency theory, since the CEOs are acting as owners rather than employees, thus, the demand for further stock-based compensation is likely to be reduced, because the interests of the CEOs and shareholders are already relatively aligned (Bryan, Hwang & Lilien, 2000; Jensen & Meckling, 1976).

Moreover, international diversification firms involves more complex work than domestic firms, and industrial diversification firms also involve multi-segments business, which increases the complex work over single-segments firms. In order to give incentive to the CEO's work for shareholders' interests, higher international diversified firms and multi-segments business firms offer higher proportions of company stock, thereby making the CEO act as shareholders, meanwhile, reducing agency costs and the requirement of CEO stock options. Thus, CEO's stock ownership is negatively associated with CEO's stock options.

Thus, this study predicts that stock ownership is negatively associated with CEO stock options, when the CEO holds a large fraction of their firms' outstanding stock, thereby reducing the agency cost and CEO stock options. Therefore, it can be expected that

Hypothesis  $H_7$  : Stock ownership is negatively associated with stock options.

## 3. Research Design, 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 stock options.

Hypothesis  $H_2$  : Industrial diversification is negatively associated with stock options.

Hypothesis  $H_3$  : Market-based performance is positively associated with stock options.

Hypothesis  $H_4$  : Accounting-based performance is positively associated with stock options.

Hypothesis  $H_5$  : Investment opportunities are positively associated with stock options.

Hypothesis  $H_6$  : Firm size is positively associated with stock options.

Hypothesis  $H_7$  : Stock ownership is negatively associated with stock options.

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

CEO compensation structure  $i = f(\text{INTD, INDD, RET, ACE, IO, SIZE, OWN, Tenure, Age, Duality, Gender})$

When  $i = e$ , CEO compensation structure = stock options

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 CEO stock options; data were obtained from the ExecuComp database. The independent variables in the study are as follows: International Diversification (INTD), Industrial Diversification (INDD), Market-based measure of performance (RET), Accounting-based measure of performance (ACE), 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 that investors 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 the information in the ExecuComp database with information contained in Lexis/Nexis.

CEO compensation data selected from Standard & Poor's COMPUSTAT ExecuComp (1997-2002) covers the total compensation and current compensation, such as salary and bonuses. The data also contain 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 as suggested by Lippert and Moore (1995) and further modified in this study.

Table 1 provides a list of the 1,622 firms, industry classes, and the SIC codes used in this study.

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

	SIC codes	Number of observations	%
<b>Panel A: Filing Year</b>			
1997		335	14
1998		414	17
1999		828	33
2000		438	18
2001		433	15
2002		71	3
<b>Total</b>		<b>2,448</b>	<b>100.0</b>
<b>Panel B: Type of Industry (SIC)</b>			
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

	SIC codes	Number of observations	%
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
<b>Total CEOs</b>		<b>2,448</b>	<b>100.0</b>

Data 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.

### 3.1. Multiple Regression Model

A Multiple regression model identified the determinants of CEO stock options. CEO stock options are the dependent variable (Y) predicted by the independent variables and, control variables.

The regression analysis tested the relationship between corporate diversification and CEO stock options. Therefore, the model for estimation becomes:

$$SO_{t,i} = e_0 + e_1INTD + e_2INDD + e_3RET + e_4ACE + e_5IO + e_6SIZE + e_7OWN + e_8Tenure + e_9Age + e_{10}Duality + e_{11}Gender + \varepsilon_{t,i} \quad (1)$$

Where,  $e_0$  = the constant of regression equation model 1

$e_1, e_2, e_3, e_4, e_5, e_6, e_7, e_8, e_9, e_{10}, e_{11}$  = coefficient of

$INTD$ ,  $INDD$ ,  $RET$ ,  $ACE$ ,  $IO$ ,  $SIZE$ ,  $OWN$ ,  $Tenure$ ,  $Age$ ,  $Duality$ ,  $Gender$

$SO$  denotes stock options 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 and is measured by the common stock return at the end of the fiscal year.

$IO$  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  $t$ ).



#### 4. Analysis and Presentation of Finding

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 presents 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 stock options compensation. Mean and median stock options compensations during the period (1997-2002) are \$3,144,670.00 to \$1,333,910.00.

Panel B presents the mean, median, standard deviation, and minimum and maximum for the control variables, which include 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 of 1997-2002 are within 2,947.66 and 2,192 days,. Age is the age of the CEO at the end of the fiscal year. The mean and median of age during the period of 1997-2002 is within 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 of 1997-2002 is 0.56 and 0.67. Gender is considered 1 if the CEO is male and 0 if the CEO is female. The mean and median of gender during the period of 1997-2002 is 0.96 and 1.00.

**Table 2:** Descriptive Statistic--dependent and independent variables

<b>Panel A: Variables</b>	<b>Number of Observations <sup>a</sup></b>	<b>Mean</b>	<b>Median</b>	<b>Std. Deviation</b>	<b>Minimum</b>	<b>Maximum</b>
Stock Options	2434	3,144.67	1,333.91	10,010.19	0.00	273,031.94
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
<b>Panel B: Control Variable</b>						
Tenure <sup>b</sup> (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 <sup>c</sup>	2,448	0.56	0.67	0.45	0	1
Gender <sup>d</sup>	2,448	0.96	1	0.18	0	1
<b>Panel C: Firm Characteristic (000s)</b>						
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: <sup>a</sup> n=the mean for each CEO over the six-years period (1997-2002) <sup>b</sup> days <sup>c</sup> recoded as 1=CEO and chairperson, 0= otherwise. <sup>d</sup> recoded as 0=female, 1=male. This table shows the descriptive statistics for the CEOs sample.

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 within \$4,346,940.00 and \$1,102,440.00. The mean and median of the capital expenditures during the period of 1997-2002 is within \$312,110.00 and \$59,390.00. The mean and median of EBIT/Sales during the period 1997-2002 is \$89,700.00 and \$510.00. The mean and median of R&D expense/sales during the period (1997-2002) is \$200 and \$3,. The mean and median of capital expense/Sales during the period (1997-2002) is \$13 and \$5.

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 was 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 <sup>a</sup>	1	2	3	4	5	6	7	8	9	10	11	12
1 Stock Options	1											
2 International Diversification	.144**	1										
3 Industry Diversification	.073**	.146**	1									
4 Market based Performance	-.059**	-.009	-.013	1								
5 Accounting based Performance	.262**	.080**	.327**	-.085**	1							
6 investment opportunities	.072**	.352**	.084**	-.048	-.298**	1						
7 stock ownership	-.186**	-.108**	-.149**	.029	-.188**	-.089**	1					
8. Firm size	.367**	.121**	.418**	-.052**	.751**	-.138**	-.254**	1				
9. Gender <sup>b</sup>	-.059**	.016	-.036	.012	-.008	-.017	.056**	-.025	1			
10. Age	-.077**	.002	.065*	-.019	.125**	-.007	.169**	.119**	.108**	1		
11. Duality	.062**	.039	.097**	-.022	.251**	-.003	.105**	.267**	.023	.271**	1	
12. Tenure	.014	-.046	-.034	-.047	.195**	-.120**	.341**	.089**	.127**	.369**	.297**	1

<sup>a</sup> values of n ranged from 1069 to 2448 <sup>b</sup> \*p<.01; \*\*P<.05 This table shows the correlations between variables by using Pearson Correlation Coefficients.

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<sup>2</sup> 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 the CEO stock options compensation as already explained by the control variables.

Table 4 reports the results of the hierarchical regression for stock options compensation in full model, which examined hypotheses H1, H2, H3, H4, H5, H6, and H7

$$\begin{aligned}
 SO_{t,i} = & b_0 + b_1INTD + b_2INDD + b_3RET + b_4ACE + b_5IO + b_6SIZE + \\
 & b_7OWN + b_8Tenure + b_9Age + b_{10}Duality + b_{11}Gender + \varepsilon_{t,i} \\
 SO_{t,i} = & b_0 + b_1INTD + b_2INDD + b_3RET + b_4ACE + b_5IO + b_6SIZE + \\
 & b_7OWN + b_8Tenure + b_9Age + b_{10}Duality + b_{11}Gender + \varepsilon_{t,i}
 \end{aligned}$$

**Table 4:** Hierarchical Regression of Determinants of Stock Options

Variables		Stock Options Compensation <sup>a</sup>			
		$\beta$	$t$	$\Delta R^2$	$\Delta F$
Step 1:	Control Variables			.011	7.076***
	Tenure	.019	.967		
	Age	-.064**	-3.372		
	Duality	-.019	-.953		
	Gender	-.048	-2.610		
Step 2:	Predictor Variables			.167	70.608***
	International Diversification	.088***	4.512		
	Industrial Diversification	-.116***	-5.674		
	Market-based Performance	-.032†	-1.707		
	Accounting-based Performance	.010	.337		
	Investment Opportunities	.076***	3.755		
	Firm Size	.395***	13.279		
	Stock Ownership	-.079***	-3.923		
Overall $R^2$ and $F$				.178	48.019***
Adjusted $R^2$				.175	

<sup>a</sup>  $n = 2445$  <sup>b</sup> Beta weights and  $t$ -values reflect results for the full model and subsequent models

†  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

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

Hypothesis  $H_1$ : International diversification is positively associated with stock options.

Hypothesis  $H_2$ : Industrial diversification is negatively associated with stock options.

Hypothesis  $H_3$ : Market-based performance is positively associated with stock options.

Hypothesis  $H_4$ : Accounting-based performance is positively associated with stock options.

Hypothesis  $H_5$ : Investment opportunities are positively associated with stock options.

Hypothesis  $H_6$ : Firm size is positively associated with stock options.

Hypothesis  $H_7$ : Stock ownership is negatively associated with stock options.

**Table 5:** Results of Regression Equations Model 1 Analysis for Stock Options Compensation

$$SO_{t,i} = e_0 + e_1INTD + e_2INDD + e_3RET + e_4ACE + e_5IO + e_6SIZE + e_7OWN + e_8Tenure + e_9Age + e_{10}Duality + e_{11}Gender + \varepsilon_{t,i} \quad \dots \quad (1)$$

Variable	Model 1	Model 2
$e_1$ International Diversification( $INTD$ )		.088*** (4.512)
$e_2$ Industry Diversification ( $INDD$ )		-.116*** (-5.674)
$e_3$ Market based Performance( $RET$ )		-.032† (-1.707)
$e_4$ Accounting based Performance( $ACE$ )		.010 (.337)
$e_5$ Investment Opportunities ( $IO$ )		.076*** (3.755)

Variable	Model 1	Model 2
$e_6$ Firm Size ( <i>SIZE</i> )		.395*** (13.279)
$e_7$ Stock Ownership ( <i>OWN</i> )		-.079*** (-3.923)
$e_8$ Tenure	.005 (.244)	.019 (.967)
$e_9$ Age	-.059** (-2.974)	-.064** (-3.372)
$e_{10}$ Duality	.075*** (3.610)	-.019 (-.953)
$e_{11}$ Gender	-.059** (-2.937)	-.048** (-2.610)
Adjusted $R^2$	.011	.167
Change in adjusted $R^2$	.010***	.175***

Note.<sup>a</sup>  $n = 2445$  <sup>b</sup> Beta weights and  $t$ -values reflect results for the full model †  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$   
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

An examination of the zero-order correlations ( Table 3 pearson correlation coefficient matrix) reveals that stock options compensation was significantly correlated with the six measures of the predictor variables except market-based performance (international diversification  $r = .144$ ; industrial diversification  $r = .073$ ; market-based performance  $r = -.059$ ; accounting based performance  $r = .262$ ; stock ownership  $r = .072$ ; firm size  $r = -.186$ ) and except investment opportunities  $r = .367$ . To test the relationship between the seven independent variables and stock options compensation as a whole, a hierarchical regression model was created by entering the control variables in step 1 and the seven independent variables measured in step 2 as discussed above. Results of the regression are shown in

Table 4. Standardized regression weights (beta) are reported for ease in comparing the strength of the relationship between stock options compensation and the various predictor variables in the regression model.

As indicated by the significant overall F score (48.019,  $p < .001$ ), the total set of predictor variables was significantly related to stock options compensation. In addition, the set of predictor variables explained 17.5 % (adjusted  $R^2$ ) of the variance in the dependent variable of stock options compensation. This variable is indicated by the change in  $R^2$ , as shown in Table 4. The set of predictor variables explained an additional 16.7 % of variance in stock options compensation beyond the 1.1 % already explained by the control variables.

For the hypothesis  $H_1$ : International diversification is positively associated with stock options. The results of international diversification ( $\beta = .088$ ,  $t = 4.512$ ,  $p = .000$ ) shows that there is a positive significant relationship between international diversification and stock options compensation. Thus, the results supported hypothesis  $H_1$  that international diversification is positively associated with CEO stock options. The results demonstrated that the higher the degree of international diversification, the more stock options compensation is paid to CEO.

For the hypothesis  $H_2$ : Industrial diversification is negatively associated with stock options. The results of industrial diversification ( $\beta = -.116$ ,  $t = -5.674$ ,  $p = .000$ ) shows that there is a negatively significant relationship between industrial diversification and CEO stock options. Thus, the results supports hypothesis  $H_2$  that industrial diversification is negatively associated with stock options compensation. The results demonstrated that the firms with more business segments; higher degree of industrial diversification might disperse optional risk, which causes the firms to pay lesser stock options compensation pay to CEOs, thereby, reducing agency cost.

For hypothesis  $H_3$ : Market-based performance is positively associated with stock options. The market-based performance analysis ( $\beta = -.032$ ,  $t = -1.707$ ,  $p < .10$ ) shows that market-based performance is negatively and significantly associated with CEO stock options. As with hypothesis  $H_3$ , the predicted sign was the opposite. Thus, ultimately no support was provided for hypothesis  $H_3$ .

For hypothesis  $H_4$ : Accounting-based performance is positively associated with stock options. The accounting-based performance analysis ( $\beta = .010$ ,  $t = .337$ ,  $p > .1$ ) indicates that accounting-based performance is not significantly related to stock options compensation. Therefore, the null hypothesis cannot be rejected; the findings show that accounting-based performance is not significantly associated with stock options compensation. Thus, hypothesis  $H_4$  was not supported.

For hypothesis  $H_5$ : Investment opportunities are positively associated with stock options. The investment opportunities analysis ( $\beta = .076$ ,  $t = 3.755$ ,  $p = .000$ ) shows that there is a positive significant relationship between investment opportunities and stock options compensation. Thus, the results support hypothesis  $H_5$  that investment opportunities are positively associated with stock options compensation. The results demonstrated that the more investment opportunities firms have, the higher stock options compensation CEO's receive.

For hypothesis  $H_6$ : Firm size is positively associated with stock options.

The firm size analysis ( $\beta = .395$ ,  $t = 13.279$ ,  $p = .000$ ) shows that there is a positive significant relationship between firm size and stock options compensation. Thus, the results support hypothesis  $H_6$  that firm size is positively associated with CEO stock options.

For hypothesis  $H_7$ : Stock ownership is negatively associated with CEO stock options. The stock ownership analysis ( $\beta = -.079$ ,  $t = -3.923$ ,  $p = .000$ ) shows that there is a negatively significant relationship between stock ownership and CEO stock options. Thus, the results support hypothesis  $H_7$  that stock ownership is negatively associated with CEO stock options.  $H_1, H_2, H_3, H_4, H_5, H_6, H_7$

Taken together, these results provide support for hypotheses

$H_1, H_2, H_5, H_6, H_7$ . The data did not support hypothesis  $H_3, H_4$ .

## 5. The Results of Hypotheses Testing

This study examines the determinants of stock options compensation. The independent variables in the study are as follows: International Diversification (INTD), Industrial Diversification (INDD), Market-based measure of performance (RET), Accounting-based measure of performance (ACE), Investment Opportunity (IO), Firm Size (SIZE), and Stock Ownership (OWN). The Control variables are CEO position, tenure, age, duality, and gender.

The effects of international diversification, industrial diversification, market-based performance, accounting-based performance, investment opportunity, firm size, and stock ownership were examined in relation to CEOs stock options.

Table 5 presents the regression results of regression equations model 1 analysis for CEOs stock options.

### Effect of CEOs Stock Options

The results show that the higher the degree of international diversification, investment opportunities, and firm size, the more CEOs receive in stock options. In contrast, the higher the degree of industrial diversification, the lesser CEOs receive in stock options. CEOs who has greater outstanding stock ownership make less use of CEO stock options. Contrary to this findings in prior studies, there is little

evidence to support using CEO stock options to increase stock return performance, as traditionally measured. We will explain as follows:

### **5.1. Results of Testing International Diversification (Hypothesis 1)**

For hypothesis  $H_1$ : International diversification is positively associated with stock options. The results support hypothesis  $H_1$  that international diversification is positively associated with stock options compensation. The results demonstrated that the higher the degree of international diversification, the higher the stock options compensation paid to CEO. This is the first study to examine if international diversification is positively associated with CEO stock options. Duru and Reeb (2002) found that international diversification is positively associated with incentive compensation. Sanders and Carpenter (1998) found that the degree of internationalization is positively associated with CEO compensation paid in long-term forms and in total.

### **5.2. Results of Testing Industrial Diversification (Hypothesis 2)**

For hypothesis  $H_2$ : Industrial diversification is negatively associated with stock options. The results support hypothesis  $H_2$ , that industrial diversification is negatively associated with stock options compensation. The results demonstrated that the firms with more business segments; higher degree of industrial diversification may disperse optional risk, which causes the firms to pay less stock options compensation to CEOs, thereby, reducing agency cost. This is the first study to examine whether industrial diversification is associated with stock options compensation. Previous research, by Duru and Reeb (2002) found that industrial diversification is negatively associated with total compensation and positively related to incentive compensation. This study extends their research to explore in more detail, whether industrial diversification is associated with CEO stock options.

#### **5.3.1. Results of Testing Market-based Performance (Hypothesis 3)**

For hypothesis  $H_3$ : Market-based performance is positively associated with stock options. The results supports hypothesis  $H_3$  that market-based performance is negatively associated with stock options compensation. As with hypothesis  $H_3$ , this was an opposite of the predicted sign. Thus, ultimately no support was provided for hypothesis  $H_3$ . This result is inconsistent with that of Singh and Agarwal (2002) stating that market-based performance is positively associated with long-term incentive compensation, which mainly includes stock options.

#### **5.3.2. Results of Testing Accounting-based Performance (Hypothesis 4)**

For hypothesis  $H_4$ : Accounting-based performance is positively associated with stock options. Because the results cannot reject the null hypothesis, the results report that hypothesis  $H_4$  was not supported. However, this result is consistent with Singh, Agarwal, (2002) that accounting-based performance is not significant to long-term incentive compensation, which is mainly composed of stock option.

### **5.4. Results of Testing Investment Opportunities (Hypothesis 5)**

For hypothesis  $H_5$ : Investment opportunities are positively associated with stock options. The results support hypothesis  $H_5$  that investment opportunities are positively associated with stock options compensation. The results demonstrated that firms with more investment opportunities will pay their CEO higher stock options compensation. Bryan, Hwang, and Lilien (2000) found that stock options compensation increased with investment opportunities; whereas, restricted stock grants decreased with a firm's investment opportunities. Smith and Watts (1992) found that firms with more growth options have greater use of stock options. Smith and Watts (1992) demonstrated a strong association between

investment opportunities and the use of incentive compensation plans. Duru and Reeb (2002) found a positive relationship between investment opportunities, total compensation, and incentive compensation.

### 5.5. Results of Testing Firm Size (Hypothesis 6)

For the hypothesis  $H_6$ : Firm size is positively associated with stock options.

The results supported hypothesis  $H_6$  that firm size is positively associated with stock options compensation. The results demonstrated that CEOs in larger firms will receive higher stock options compensation. This result is consistent with that of Singh and Agarwal (2002) they found that firm size is positively associated with long-term incentive compensation, which mainly includes stock options.

### 5.6. Results of Testing Stock Ownership (Hypothesis 7)

For hypothesis  $H_7$ : Stock ownership is negatively associated with stock options. The results support hypothesis  $H_7$  that stock ownership is negatively associated with stock options compensation. The results demonstrated that CEOs who own more of the outstanding stock of the firms receive lesser stock options pay from firms. This result is consistent with the findings of Grace (2004) and Mehran (1995) that stock ownership is negatively associated with stock options compensation. However, the research results are ambiguous. Some researchers have found that stock ownership is unrelated to stock options compensation. Lewellen et al. (1987); Yermack (1995) found no evidence of a negative relationship with managerial stock ownership.

## 6. Summary and Concluding Remarks

This study found that international diversification is positively related to stock options. This study is also the first study to examine whether industrial diversification is negatively associated with stock options compensation. Duru and Reeb (2002) found that industrial diversification is negatively associated with total compensation and positively related to incentive compensation. This study extends its research to test whether industrial diversification is associated with stock options compensation. The results show that there is a negative significant relationship between industrial diversification and stock options compensation.

In conclusion, this study examined CEO stock options for 2448 CEOs. The determinants of CEOs stock options in this study are international diversification, industry diversification, firm performance, investment opportunities, firm size, and stock ownership. The results show that the higher the degree of international diversification, investment opportunities, and firm size, the more CEO receive in stock options. In contrast, the higher the degree of industrial diversification, the less CEO receive in stock options. The CEO who has greater outstanding stock ownership make less use of CEO stock options. Contrary to findings in prior studies, there is little evidence to support CEOs stock options in order to increase stock return performance, as traditionally measured.

## References

- [1] Amihud, Jakov, and Lev, B. (1981). Risk reduction as a managerial motive for conglomerate mergers. *Bell Journal of Economics*, 12(1), 605-617.
- [2] Baber, W. R., Janakiraman, S. N., and Kang, S. (1996). Investment opportunities and the structure of executive compensation. *Journal of Accounting and Economics*, 21(1), 297-318.
- [3] Baker, G. P., Jensen, M. C., and Murphy, K. J. (1988). Compensation and incentives: Practice vs. theory. *Journal of Finance*, 43(1), 595-616.
- [4] Banker, R. D. and Datar, S. M. (1989). Sensitivity, precision, and linear aggregation of signals

- F. *Journal of Accounting Research*, 27(1), 21-40.
- [5] Baumol, W. J. (1959). Business behavior, value and growth. *New York: MacMillan*, 164.
  - [6] Becker, G.S. (1964). Human capital: A theoretical and empirical analysis: With special Reference to Education. New York, NY: *National Bureau of Economic Research*, 187.
  - [7] Bryan, S., Hwang, L. and Lilien, S. (2000). CEO stock-based compensation: An empirical analysis Of incentive-intensity, relative mix, and economic determinants. *The Journal of Business*, 73(4), 661-694.
  - [8] Bushman, R., and Indjejikian, R. (1993). Accounting income, stock price, and managerial compensation. *Journal of Accounting and Economics*, 16(1), 1-23.
  - [9] Cyert, R. M., Kang, S., and Kumar, P. (2002). Corporate governance, takeovers, and top-management compensation: *Theory and evidence. Management Science*, 48(4), 453-470.
  - [10] Daft, R. (1992). Organization theory and design. St. Paul: West Publishing.
  - [11] Duru, A. and Reeb, D. M. (2002). Geographic and industrial corporate diversification: The level and structure of executive compensation. *Journal of Accounting, Auditing & Finance*, 17(1), 1-24.
  - [12] Dyl, E.A. (1988). Corporate control and management compensation: Evidence on the agency problem, *Management and Decision Economics*, 9(1), 21-26.
  - [13] Eisenhardt, K.M. (1989). Agency theory: Assessment and review. *Academy of Management Review*, 14(1), 57-74
  - [14] Fatemi, A.M. (1984). Shareholder benefits from corporate International diversification. *The Journal of Finance*, XXXIX (5), 1325-1344.
  - [15] Finkelstein, S., & Hambrick, D. C. (1989). Chief executive officer compensation: A study of the intersection of markets and political processes. *Strategic Management Journal*, 10, 121-134.
  - [16] Finkelstein, S. and Hambrick, D.C. (1996). Strategic leadership: Top executives and their effects on organizations. Minneapolis/St Paul, MN: West Publishing.
  - [17] Gander, J. P. (1997). Gender-based faculty-pay differences in academe: A reduced-form approach. *Journal of Labor Research*, 18(3), 451-61.
  - [18] Gaver, J.J. and Gaver, K. M. (1993). Additional Evidence on the Association between the investment opportunity set and corporate financing, dividend and compensation policies. *Journal of Accounting and Economics*, 16(3), 125-160.
  - [19] Gaver, J.J. and Gaver, K. M. (1995). Compensation policy and the investment opportunity set. *Financial Management*, 24(1), 19-33.
  - [20] Gomez-Mejia, L. R., and Balkin, D. B. (1992). Compensation, organizational strategy, and firm performance. Cincinnati, OH: South-Western Publishing.
  - [21] Grossman, W. and Hoskisson, R. E. (1998). CEO pay at the crossroads of Wall Street and Main: Toward the strategic design of executive compensation. *The Academy of Management Executive*, 12(1), 43-58.
  - [22] Gujarati, D. N. (1988). Basic econometrics. International second edition. Burr Ridge, IL, Irwin, Inc.
  - [23] Holmstrom, B. (1979). Moral hazard and observability. *Journal of Economics*, 10(1), 74-91.
  - [24] Jensen, M. C., and Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
  - [25] Jensen, M. C., and Murphy, K. J. (1990). Performance pay and top management incentives. *Journal of Political Economy*, 98(1), 225-264.
  - [26] Kim, C., Kim, S. and Pantzalis. (2001). Firm diversification and earnings volatility: An empirical analysis of U.S.-based MNCs. *American Business Review*, 19(1), 26-39. :
  - [27] Lambert, R.A. and Larcker, D. F. (1987). An analysis of the use of accounting and market measures of performance in executive compensation contracts. *Journal of Accounting Research*, 25(1), 85-125.
  - [28] Lewellen, W. G., Loderer, C., and Martin, K. (1987). Executive compensation and executive incentive problems: An empirical analysis. *Journal of Accounting and Economics*, 9(3), 287-310.
  - [29] Lippert, R., and Moore, W. (1995). Monitoring versus bonding: shareholder rights and



- management compensation. *Financial Management*, 24(3), 5461.
- [30] Marris, R. (1963). A model of the managerial enterprise. *Quarterly Journal of Economics*, 77(1), 185-209.
  - [31] Mehran, H. (1995). Executive compensation structure, ownership and firm performance. *Journal of Financial Economics*, 38(1), 163-184.
  - [32] Miller, D. J. (1995). CEO salary increases may be rational after all: Referents and contracts in CEO pay. *Academy of Management Journal*, 38(5), 1361-1386.
  - [33] Newman, H. A., and Bannister, J. W. (1998). Cross-sectional difference in corporate compensation structure. *Journal of Managerial Issues*, 10(2), 223-239.
  - [34] Nilakant, V., and Rao, H. (1994). Agency theory and uncertainty in organizations: A evaluation. *Organization Studies*, 15(1), 649-672.
  - [35] Pavlik, E.L., Scott, T. W. and Tiessen, P. (1993). Executive compensation: Issues and research. *Journal of Accounting Literature*, 12(1), 131.
  - [36] Rosen, S. (1982). Authority, control and the distribution of earnings. *Bell Journal of Economics*, 13(1), 311-323.
  - [37] Roth, K., and O'Donnell, S. (1996). Foreign subsidiary compensation strategy: An agency theory perspective. *Academy of Management Journal*, 39, 678-703.
  - [38] Sanders, W. G., and Carpenter, M.A. (1998). Internationalization and firm governance: The roles of CEO compensation, top team composition, and board structure. *Academy of Management Journal*, 41(2), 158-179
  - [39] Singh, P., and Agarwal, N. C. (2002). The effects of firm strategy on the level and structure of executive compensation. *Canadian Journal of Administrative Sciences*, 19(1), 42-57.
  - [40] Singh, P., and Agarwal, N. C. (2003). Executive compensation: Examining an old issue from new perspectives. *Compensation and Benefits Review*, 35(2), 48-55.
  - [41] Smith, C.W., and Watts, R. L. (1992). The investment opportunity set and corporate financing, dividend and compensation policies. *Journal of Financial Economics*, 32(3), 263-292.
  - [42] Sridharan, U. C. (1996). CEO influence and executive compensation. *The Financial Review*, 31, 51-66.
  - [43] Tosi, H. L. and Gomez-Mejia L. R. (1994). CEO compensation monitoring and firm performance. *Academy of Management Journal*, 37(1), 1002-1016.
  - [44] Ueng, C. J., Wells, D. W., and Lilly, J. D. (2000). CEO influence and executive compensation: Large firms vs. small firms. *Managerial Finance*, 26(8), 3-13.
  - [45] Yermack, D. Do corporations award CEO stock options effectively? *Journal of Financial Economics*, Vol.39,1995,pp.237-69.
  - [46] Zajac, E.J., and Westphal, J.W. (1994).The costs and benefits of managerial incentives and monitoring in large U.S. corporations: When is more not better? *Strategic Management Journal*, 15,121-142.