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**An Empirical Analysis of the Determinants of Executive Compensation in the US  
Financial, Insurance and Real Estate Sectors**

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*Abstract*

The determinants of chief executive officer (CEO) compensation have been examined in various research studies. However, to date most studies have only examined the issue over a relatively short time horizon and with respect to only individual sector at any one time. This study is the first to seek to identify the main determinants of CEO compensation over a twenty-two year period from 1992 to 2013, and with respect to three US sectors, namely the financial, real estate and insurance sectors. Companies were selected from the Execucomp database and the data were analyzed by regression analysis. The results showed that some of the statistically significant variables influencing CEO compensation were: directorship, age of CEO, return on asset, return on equity and total asset. . This study therefore adds to the existing body of literature on executive compensation as it is the first of its kind to undertake a comparative analysis of three sectors in the USA

Keywords: CEO compensation; financial sector; real estate sector; regression analysis

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## **An Empirical Analysis of the Determinants of Executive Compensation in the US Financial, Insurance and Real Estate Sectors**

### **1. INTRODUCTION**

The issue of executive compensation is one that has attracted much attention within the academic circles, but with the conclusion of each research engagement a new set of questions emerges. As a consequence, numerous theories have been advanced with each trying to solve an aspect of the puzzle (Talmor and Wallace, 2001). Therefore, it is posited that an understanding of executive compensation will be useful in several theoretical contexts such as executive mobility, executive caliber, strategy implementation, power patterns, and organizational symbols (Frinkelstein and Hambrick, 1988).

Numerous studies have examined the factors that drive executive compensation (James, 2014). However, these studies appear to have one possible weakness in that the data analysis is normally limited to a few years. For example: Talmor and Wallace (2001) examined executive compensation in the US financial sector for the period 1992 to 1997 and Kim and Tucker (2014) studied CEO compensation in the consumer staples sector for the period 2008 to 2011. Coughlan and Schmidt (1985) examined the association between executive compensation and firm performance over a three-year period 1978 to 1980 and Hartzell and Starks (2003) also examined the role of institutional investors in shaping executive compensation packages, this study was done for the period 1992 to 1997. Whether or not the results would have been different had the data analysis been done for a longer period is yet to be determined.

The purpose of the current study is to present an extension to the previous studies especially that of Talmor and Wallace (2001) and simultaneously present a comparative analysis with the study of Kim and Tucker (2014). To achieve these objectives data analysis for this study covers a twenty-two year period from 1992 to 2013. In this study, an empirical analysis of the U.S. financial, insurance and real estate sectors is undertaken with the aim of providing a better understanding of the factors that influence CEO compensation. It should be noted that with respect to the real estate sector there is a paucity of research relating to executive compensation in that sector.

The remainder of the paper is organized as follows: section 2 provides theories and literature review, economic sector and samples selection is discussed in section 3, and section 4 explains the analytical tools and hypotheses formulation. The empirical results are presented in section 5 and the paper concludes with section 6 which presents the summary and implications.

### **2. THEORIES AND LITERATURE REVIEW**

#### **2.1 Properties of CEO Compensation**

Finkelstein and Hambrick (1988) argue that CEO compensation assesses a number of interesting properties which facilitate empirical enquiry, for example, measurement of compensation is relatively unambiguous, reliability is strong, and compensation typically exhibits great variability. The concern has been expressed that even though compensation is relatively straightforward and measurable, there are factors that blur and distort it.

One issue is that CEOs receive several non-financial rewards which may carry greater meaning to the executive than income, thus the actual pay may provide an incomplete picture of the satisfaction CEOs derive from their work (Finkelstein and Hambrick 1988). Determining CEO compensation can be misleading due to the many different forms of compensation. A compensation package may comprise salary, bonus, pension contributions, stock options, deferred income, and long-term contingent compensation. This wide array and the methods of administration tend to present difficulties for researchers (Finkelstein and Hambrick 1988).

The second issue is that of trying to assign compensation to a given period especially when a CEO is given a stock option but exercises the option in subsequent years for a profit. The question then arises as to what compensation is derived from those options in a given year (Finkelstein and Hambrick, 1988). Another issue concerns the attempt to determine whether to treat certain pay as contingent or base, a distinction that is important to studies of agency theory and motivation (Finkelstein and Hambrick 1988). One of the questions that researchers have attempted to answer is what are the main factors that drive executive compensation? While several theories have been advanced, there is yet to be consensus around a core set of factors.

## 2.2. Determinants of CEO Compensation

Kim and Tucker (2014) examined the main factors influencing executive compensation in the consumer staples sector in the U.S. Interestingly, they found that several factors were significant in determining CEO pay, among the factors were; the number of employees, the size of the company, and return on asset. While gender has been advanced as a possible factor in determining executive compensation, Kim and Tucker (2014) found no evidence of gender being statistically significant, they found male gender to be negatively associated with pay, neither did Kim and Tucker (2014) find EPS to be a significant predictor variable in any pay component. They concluded that this was surprising given the emphasis that is attached to stock prices and net income. Against this premise, Kim and Tucker (2014) concluded that it may be reasonable to assume that the industry has a role to play in determining how sensitive an executive pay is to financial performance measures.

In general, CEO compensation package is the responsibility of the board of directors. However, answering the question as to what factors determine CEO compensation can be a difficult one. Finkelstein and Hambrick (1988) posit that the two major factors which determine CEO compensation are market factors and the power and preferences of the board and CEO. These two factors are explained in the subsequent paragraphs.

Researchers argue that when directors contemplate the CEO pay they are guided by two factors; first, pay may be the result of the function of supply and demand and second, it can be seen as a function of the contribution of the executive to the firm's performance. There is the general perception that CEO compensation can be understood as a response to the market for CEO talent. Hence, it is further argued that depending on the supply and demand of this high caliber talent, the impact is seen in the various compensation packages available to CEOs (Ciscel and Carroll, 1980).

An interesting economic theoretical perspective was presented as a method of determining CEO compensation which states that CEOs should be paid the value of their marginal product.

Marginal product is defined as the amount by which the company's production would decline if the worker were no longer employed by the company (Frank 1984).

Four factors that are closely related to the market which influence CEO compensation are: the CEO's discretion, the size of the organization, the performance of the organization, and the CEO's human capital. While it may be easy to understand three of the four factors mentioned above, the CEO's discretion is generally difficult to explain. Generally, CEO discretion is seen as what the CEO can contribute to an organization that is operating in a dynamic and unstable environment (Finkelstein and Hambrick, 1988). The general view is that bigger companies normally pay more because the CEO responsibilities extend over substantial resources rather than because of the company's ability to pay more.

Finkelstein and Hambrick (1988) argue that CEO compensation extends beyond market factors, and is influenced by a political process which is at the heart of the agency theory. The basic premise is that the separation of ownership and control that has occurred in major companies has resulted in owners with a reduced power base especially regarding information. Therefore, to address this situation, compensation packages are designed to encourage executives to manage the enterprise in the best interest of the owners. It is further suggested that the CEO's compensation may also be a function of his or her power. This could be the result of situations in which the CEO has large shareholdings, long tenure and control of the top management team, which permits the CEO to choose the compensation package that is preferred.

If CEOs are able to choose compensation packages that best represent their interest without much regard to the owners of the companies, this will lead to major agency problems. How do owners respond to this potential moral hazard issue is of material concern to researchers

### **3. ECONOMIC SECTOR AND SAMPLE SELECTION**

Companies were selected from the ExecuComp database. Both financial and non-financial company characteristics were examined based on the available data in the ExecuComp database. The compensation of a company's CEO for specific years was also examined

To avoid the inclusion of data not relevant to this study the data in the ExecuComp database were filtered. The filtering process was based on industry specific sector codes; hence only SIC codes 60 to 67 were included which represents the financial, insurance and real estate sectors. Table 1 shows the industry comprising this SIC classification.

As mentioned earlier, a number of studies that examine CEO compensation with the aim of identifying the determinants of compensation have been conducted over a relatively short period of time (four to six years). It is our view that such restricted time frame could provide results that are affected by non-recurring "one-off" variables (such as golden parachute) of extraordinary magnitude. We therefore contend that a more realistic understanding of the drivers of CEO compensation can be achieved from an analysis undertaken over an extended period which would normalize any one-off non-recurring variable.

Table 1: SIC Classification

<b>Primary SIC (beginning with)</b>	<b>SIC Description</b>	<b># of Companies</b>
60	Depository intuitions	134
61	Non-depository institutions	26
62	Security brokers, dealers & floatation (exchange & services)	56
63	Life insurance	111
64	Insurance agents, brokers and services	19
65	Real estate operators (except developers) and lessors	2
67	Holding companies, investment companies, investment trusts	107
<b>GRAND TOTAL</b>		<b>455</b>

It is against this premise that this study is conducted over a twenty-two year period, 1992 to 2013. It is the hope that a better understanding of the main determinants of CEO compensation based on the indentified SIC classification will be achieved.

#### 4. ANALYTICAL TOOLS and HYPOTHESES

Multiple regression analysis was used to analyze the relationship between the dependent variable – CEO compensation- and other independent variables. The independent variables are: AGE, ROA, ROE, EMPL, EPSEX, TOTAL ASSET, EPSIN, and DIRECTOR.

*The Null Hypothesis:* the regression coefficients of AGE, ROA, ROE, EMPL, EPSEX, TOTAL ASSET, EPSIN, and DIRECTOR are all equal to zero.

$$H_0 = \beta_{AGE}, \beta_{ROA}, \beta_{ROE}, \beta_{EMPL}, \beta_{EPSEX}, \beta_{TOTAL\ ASSET}, \beta_{DIRECTOR}, \text{ and } \beta_{EPSIN} = 0$$

*The Alternative Hypothesis:* the regression coefficients of AGE, ROA, ROE, EMPL, EPSEX, TOTAL ASSET, EPSIN, and DIRECTOR are not equal to zero.

$$H_1 = \beta_{AGE}, \beta_{ROA}, \beta_{ROE}, \beta_{EMPL}, \beta_{EPSEX}, \beta_{TOTAL\ ASSET}, \beta_{DIRECTOR}, \text{ and } \beta_{EPSIN} \neq 0$$

##### 4.1. Regression Models

The regression model used to test the hypothesis is shown below:

$$Pay(TOTAL) = a + \beta_1 (AGE) + \beta_2 (ROA) + \beta_3 (ROE) + \beta_4 (EMPL) + \beta_5 (EPSEX) + \beta_6 (TOTAL\ ASSET) + \beta_7 (DIRECTOR) + \beta_8 (EPSIN) + \epsilon_i$$

The components of total CEO pay were analyzed as dependent variables as shown in the models below:

$$Pay(SAL) = a + \beta_1 (AGE) + \beta_2 (ROA) + \beta_3 (ROE) + \beta_4 (EMPL) + \beta_5 (EPSEX) + \beta_6 \text{ TOTAL ASSET} + \beta_7 (\text{DIRECTOR}) + \beta_8 (\text{EPSIN}) + \varepsilon_i \quad (1.a)$$

$$Pay(BONUS) = a + \beta_1 (AGE) + \beta_2 (ROA) + \beta_3 (ROE) + \beta_4 (EMPL) + \beta_5 (EPSEX) + \beta_6 \text{ TOTAL ASSET} + \beta_7 (\text{DIRECTOR}) + \beta_8 (\text{EPSIN}) + \varepsilon_i \quad (1.b)$$

$$Pay(STCK) = a + \beta_1 (AGE) + \beta_2 (ROA) + \beta_3 (ROE) + \beta_4 (EMPL) + \beta_5 (EPSEX) + \beta_6 \text{ TOTAL ASSET} + \beta_7 (\text{DIRECTOR}) + \beta_8 (\text{EPSIN}) + \varepsilon_i \quad (1.c)$$

$$Pay(OPT) = a + \beta_1 (AGE) + \beta_2 (ROA) + \beta_3 (ROE) + \beta_4 (EMPL) + \beta_5 (EPSEX) + \beta_6 \text{ TOTAL ASSET} + \beta_7 (\text{DIRECTOR}) + \beta_8 (\text{EPSIN}) + \varepsilon_i \quad (1.d)$$

$$Pay(NONEQ) = a + \beta_1 (AGE) + \beta_2 (ROA) + \beta_3 (ROE) + \beta_4 (EMPL) + \beta_5 (EPSEX) + \beta_6 \text{ TOTAL ASSET} + \beta_7 (\text{DIRECTOR}) + \beta_8 (\text{EPSIN}) + \varepsilon_i \quad (1.e)$$

$$Pay(PENSCHG) = a + \beta_1 (AGE) + \beta_2 (ROA) + \beta_3 (ROE) + \beta_4 (EMPL) + \beta_5 (EPSEX) + \beta_6 \text{ TOTAL ASSET} + \beta_7 (\text{DIRECTOR}) + \beta_8 (\text{EPSIN}) + \varepsilon_i \quad (1.f)$$

#### 4.2. Explanation of the Variables

The variables used in the models and their definitions are shown below in Table 2.

CEO salary is the dollar value of the base salary (cash and non-cash) earned by the CEO during the fiscal year.

CEO bonus is the dollar value of a bonus (cash and non-cash earned by the CEO during the fiscal year.

Total compensation for the individual year, comprised of the following: salary, bonus, total value of restricted stock granted, total value of stock options, long-term incentive payouts and all other payments.

Non-equity incentive compensation is similar to bonus, but may be conditional on the individual's performance and is paid under a written plan.

Option-based awards is the estimated grant-date value of stocks options or similar trust unit rights awarded.

CEO pension value is the additional annual value of the pension benefit earned the CEO in the year.

Age: is the CEO's age as reported in the annual proxy statements.



Table 2: Variables used in Model

<b>Variable</b>	<b>Label</b>	<b>Definition</b>
<b>Dependent variables</b>		
CEO salary	Pay(SAL)	Value of base pay
CEO bonus	Pay(BONUS)	CEO bonus
CEO stock award	Pay(STCK)	Value of stock award
CEO option award	Pay(OPT)	Value of option award
CEO non-equity incentives	Pay(NONEQ)	Value of non-equity incentives
Change in CEO pension value	Pay(PENSCHG)	Value of net change in pension value
Total CEO compensation	Pay(TOTAL)	Total CEO pay
<b>Financial Variables</b>		
ROA	ROA	Return on assets
ROE	ROE	Return on equity
TOTAL ASSETS	TOTAL ASSETS	Value of total assets
EPSEX	EPSEX	Earnings per share excluding extraordinary items & discontinued operations
EPSIN	EPSIN	Earnings per share including extraordinary items and discontinued operations
<b>Non-Financial Variables</b>		
Executive director	DIRECTOR	1 if CEO serve as director, 0 if not
AGE	AGE	Age of CEO
<b>Non-Financial Variable</b>		
Total # of employees	EMPL	Number of total company employees

## 5. EMPIRICAL RESULTS

### 5.1. Financial Sector

#### Total salary regression model

Table 3 presents the results of the regression analysis for the relationship between selected variables and total salary. It can be seen that the age of the CEO and whether the CEO served as director were statistically significant in determining CEO salary. These results are in contrast to the study by Kim and Tucker (2014) as they concluded that number of employees and size were significant predictors of CEO salary.

Table 3: Salary Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		3.244	.001
AGE	.105	5.172	.000
EPSEX	.045	.469	.639
EPSIN	-.060	-.641	.522
ROE	-.015	-.584	.559
ROA	.050	1.802	.072
EMPL	-.019	-.505	.614
TOTAL ASSETS	-.037	-.974	.330
DIRECTOR	.202	9.943	.000

Dependent variable: Salary (\$)

#### Total bonus regression model

Table 4 presents the results of the regression analysis for the relationship between selected variables and CEO bonus. It is observed that CEO who serve as director is statistically significant in determining bonus level ( $p = 0.000$ ). This result is in contrast to that of Kim and Tucker (2014) who found that the CEO who served as director had a negative effect on bonus pay. Executive age has a negative impact on bonus (beta = -0.013) and is not statistically significant ( $p = 0.528$ ) this results departs from Kim and Tucker (2014) findings for consumer staples sector.

Table 4: Bonus Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		1.713	.087
AGE	-.013	-.630	.528
EPSEX	-.084	-.858	.391
EPSIN	.070	.735	.462
ROE	.005	.171	.864
ROA	.019	.659	.510
EMPL	.009	.235	.814
TOTAL ASSETS	-.047	-1.206	.228
DIRECTOR	.150	7.188	.000

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Dependent variable: Bonus (\$)

### Stock award regression model

Table 5 presents the results of the regression analysis for the relationship between the selected variables and the value of stock awards. Executive age, earnings per share, and return on equity all have a negative effect on the value of stock awards (beta = -.047, -.052, -.002 respectively). The CEO who served as director has the largest positive impact (beta= 0.174) on the value of stock awards and is also statistically significant (p = 0.000).

Table 5: Stock Awards Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		3.645	.000
AGE	-.047	-1.552	.121
EPSEX	-.052	-.148	.882
EPSIN	-.032	.093	.926
ROE	-.002	-.060	.952
ROA	.049	1.026	.305
EMPL	.028	.708	.479
TOTAL ASSETS	-.068	-1.709	.088
DIRECTOR	.174	5.759	.000

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Dependent variable: Value of Stock Awards

### Value of options granted regression model

Table 6 presents the results of the regression analysis for the relationship between the selected variables and the value of options granted. ROE, ROA, and the number of employees all

had negative impact on the value of option granted and were not statistically significant ( $p = .469, .089, .415$  respectively). The CEO who served as director was statistically significant.

Table 6: Options Granted Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		.540	.589
AGE	.010	.470	.638
EPSEX	.182	1.859	.063
EPSIN	-.094	-.984	.325
ROE	-.019	-.724	.469
ROA	-.049	-1.704	.089
EMPL	-.032	-.816	.415
TOTAL ASSETS	.020	.508	.611
DIRECTOR	.170	8.178	.000

Dependent variable: Options Granted

#### **Non-equity incentive plan compensation regression model**

Table 7 presents the results of the regression analysis for the relationship between the selected variables and non-equity incentive compensation. The results are very similar to that of value of options granted and this could be due to the influence of the CEO who is also a director who can determine the award of non-equity compensation. Hence, the CEO who also served as director was statistically significant in determining non-equity compensation.

Table 7: Non-equity Incentive Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		1.156	.248
AGE	-.014	-.466	.641
EPSEX	.206	.591	.555
EPSIN	-.197	-.569	.570
ROE	-.009	-.223	.823
ROA	.004	.092	.927
EMPL	.022	.571	.568
TOTAL ASSETS	.015	.372	.710
DIRECTOR	.170	5.609	.000

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Dependent variable: Non-Equity Incentive Plan Compensation

### Change in pension value regression model

Table 8 presents the results of the regression analysis for the relationship between the selected variables and CEO change in pension value. Both CEO age and CEO directorship were statistically significant. These results were not similar to those of Kim and Tucker (2014). The difference could be due to the different sectors under examination sector.

Table 8: Change in Pension value Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		-2.787	.005
AGE	.108	3.647	.000
EPSEX	.273	.798	.425
EPSIN	-.236	-.695	.487
ROE	-.005	-.123	.902
ROA	-.031	-.648	.517
EMPL	-.004	-.115	.908
TOTAL ASSETS	.003	.075	.940
DIRECTOR	.189	6.344	.000

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Dependent variable: Change in Pension Value

### Total compensation regression model

Table 9 presents the results of the regression analysis for the relationship between the selected variables and total compensation. Total compensation includes salary, bonus, other annual benefits, restricted stock grants, all value options, other forms of compensations- this list is not exhaustive. CEO age, ROA, total assets and EPS (excluding EI) all had negative impact on total compensation. The CEO who served as director had a positive significant effect on total

compensation. Kim and Tucker (2014) study of the consumer staples sector found that ROA, the number of employees, and size of company were all significant in determining total CEO compensation.

Table 9: Total Compensation Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		3.463	.001
AGE	-.020	-.944	.345
EPSEX	-.015	-.157	.875
EPSIN	.026	.272	.786
ROE	.050	1.877	.061
ROA	-.032	-1.100	..272
EMPL	.033	.845	.398
TOTAL ASSETS	-.067	-1.725	.085
DIRECTOR	.198	9.544	.000

Dependent variable: Total compensation (salary +bonus + other annual +restricted grants etc)

## 5.2. Insurance Sector

### Total salary regression model

Table 10 presents the results of the regression analysis for the relationship between selected variables and CEO salary. ROA and EPS (including EI) have negative effect on salary and are not statistically significant. The number of employees and CEO directorship have a positive effect and are statistically significant. Kim and Tucker (2014) found that the number of employees was significant; however, unlike this study they found that ROE was also statistically significant.

Table 10: Salary Regression Results

Model	Standardized coefficient – Beta	t	Sig.
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(Constant)		5.215	.000
AGE	.063	1.909	.057
EPSEX	.062	.413	.680
EPSIN	-.073	-.478	.633
ROE	.046	1.028	.304
ROA	.000	-.002	.999
EMPL	.121	2.802	..005
TOTAL ASSETS	-.029	-.656	.512
DIRECTOR	.267	8.113	.000

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Dependent variable: Salary (\$)

### Bonus regression model

Table 11 presents the results of the regression analysis for the selected variables and CEO bonus. ROA, EPS (excluding EI) and ROE all had a negative effect on CEO bonus. A CEO who served as director had a positive effect on bonus and was statistically significant.

Table 11: Bonus Regression Results

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Model	Standardized coefficient – Beta	t	Sig.
(Constant)		-.203	.839
AGE	.019	.566	.572
EPSEX	-.006	-.039	.969
EPSIN	.022	.137	.891
ROE	-.035	-.770	..442
ROA	-.007	-.176	.860
EMPL	.017	.376	.707
TOTAL ASSETS	.012	.265	.791
DIRECTOR	.162	4.757	.000

---

Dependent variable: Bonus (\$)

### Stock award regression mode

Table 12 presents the results of the regression analysis between the selected variables and the value of stock awards. ROA, ROE and CEO directorship are statistically significant. These results contrast with those of Kim and Tucker (2014) in their study of consumer staples sector.

Table 12: Stock Award Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		.416	.678
AGE	.030	.570	.569
EPSEX	.070	.419	.675
EPSIN	-.111	-.669	.504
ROE	.240	2.973	.003
ROA	-.189	-2.264	.024
EMPL	.042	.844	.399
TOTAL ASSETS	-.115	-2.203	.028
DIRECTOR	.166	3.191	.002

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Dependent variable: Value of Stock Awards

### Option awards regression analysis

Table 13 presents the results of the regression of analysis between the related variables and annual value of CEOs option awards granted. The number of employees and CEO directorship were statistically significant with positive beta values. ROE, EPS (excluding EI) and total assets were not statistically significant and had negative impact on option awards. These results were slightly different from that of Kim and Tucker (2014) who found that ROA, number of employee and company size were significant in determining option awards in the consumer staples sector.

Table 14 presents the results of the regression analysis between the selected variables and the value of CEO's non-equity incentives. CEO age, total assets, ROA, the number of employees and CEO who serve as director are all statistically significant. These findings were different from that of Kim and Tucker (2014) based on the consumer staples sector.



Table 13: Options Award Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		-.951	.342
AGE	.082	1.653	.099
EPSEX	-.028	-.178	.859
EPSIN	.032	.202	.840
ROE	-.036	-.471	.638
ROA	.037	.469	.640
EMPL	.210	4.394	.000
TOTAL ASSETS	-.091	-1.830	.068
DIRECTOR	.266	5.364	.000

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Dependent variable: Value of Option Awards

#### **Non-equity incentive regression model**

Table 14: Non-equity Incentive Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		-1.524	.128
AGE	.149	3.292	.001
EPSEX	-.173	-1.198	.232
EPSIN	.167	1.157	.248
ROE	-.127	-1.807	.072
ROA	.220	3.043	.002
EMPL	.321	7.365	.000
TOTAL ASSETS	-.101	-2.232	.026
DIRECTOR	.295	6.546	.000

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Dependent variable: Non-Equity Incentive compensation

#### **Change in pension value regression model**

Table 15 presents the results of the regression analysis between the selected variables and the change in CEO's pension value. Only ROE, ROA and CEO who serve as director are statistically significant.

Table 15: Pension Value Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		-543	.588
AGE	.075	1.479	.140
EPSEX	-.080	-.494	.621
EPSIN	.088	.549	.583
ROE	-.184	-2.345	.020
ROA	.0279	3.457	.001
EMPL	-.032	-.649	.517
TOTAL ASSETS	-.080	-1.583	.114
DIRECTOR	.226	4.486	.000

Dependent variable: Change in Pension Value

#### Total compensation regression model

Table 16 presents the results of the regression analysis between the selected variables and total annual compensation. Statistically significant variables were total assets, number of employees and CEO who served as directors.

Table 16: Total Compensation Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		.630	.529
AGE	.063	1.863	.063
EPSEX	-.018	-.116	.908
EPSIN	.024	.155	.877
ROE	-.014	-.301	.764
ROA	.031	.773	.440
EMPL	.206	4.618	.000
TOTAL ASSETS	-.135	-2.999	.003
DIRECTOR	.146	4.330	.000

Dependent variable: Total compensation (salary +bonus + other annual +restricted stock grants

### 5.3. Real Estate Sector

#### Total salary regression model

Table 17 presents the results of the regression analysis between the selected variables and CEOs salary. CEO age and CEO directorship were all statistically significant with positive beta effect. EPS (including EI), ROA, and the number of employees all had negative effect on CEO base salary.

Table 17: Salary Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		2.909	.011
AGE	.112	2.327	.034
EPSEX	.525	.511	.617
EPSIN	-.538	-.524	..608
ROE	.255	1.461	.165
ROA	-.198	-1.171	.260
EMPL	-.055	-.618	.546
TOTAL ASSETS	.035	.640	-.532
DIRECTOR	.926	18.113	.000

Dependent variable: Salary (\$)

#### Bonus regression model

Table 18 presents the results of the regression analysis between the selected variables and CEO bonus. Interestingly, the results show that none of the selected variables was statistically significant in determining CEO bonus in the real estate sector. One possible explanation is that bonus could be linked to the dollar value of a properties sold in a given period which was not one of the variables under examination in this study.

#### Stock awards regression model

Table 19 presents the results of the regression analysis between the selected variables and CEO stock awards. The CEO who served as director and the number of employees were statistically significant. A possible explanation for this is that CEOs who were also directors could influence the award of stocks in their favour.

Table 18: Bonus Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		-.617	.127
AGE	.272	1.278	.221
EPSEX	.497	.110	.914
EPSIN	-.496	-.109	.914
ROE	.106	.138	.892
ROA	-.309	-.413	.685
EMPL	.786	1.992	.065
TOTAL ASSETS	-.421	-1.753	.100
DIRECTOR	.192	.851	.408

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Dependent variable: Bonus (\$)

Table 19: Stock Award Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		2.103	.053
AGE	-.163	-.928	.368
EPSEX	3.592	.959	.353
EPSIN	-3.202	-.856	.405
ROE	-.369	-.580	.571
ROA	.346	.561	.583
EMPL	-.812	-2.493	.025
TOTAL ASSETS	.233	1.174	.259
DIRECTOR	.463	2.484	.025

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Dependent variable: Value of Stock Awards

### Option rewards regression model

Table 20 presents the results of the regression analysis between the selected variables and the value of option awards to CEOs. The results were similar to that of the bonus where none of the selected variables was statistically significant at the 5 percent level in influencing the value of option awards granted to CEOs.

### Non-equity incentive compensation regression model

Table 21 presents the results of the regression analysis between the selected variables and CEOs non-equity incentive compensation. Total assets and the number of employees were

statistically significant. EPS (excluding EI) was not significant, but had the largest positive beta value of 4.295.

Table 20: Option Awards Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		.787	.444
AGE	-.152	-.674	.511
EPSEX	-1.260	-.262	.797
EPSIN	1.715	.357	.726
ROE	1.040	1.270	.223
ROA	-1.335	-1.685	.113
EMPL	-.272	-.651	.525
TOTAL ASSETS	.298	1.171	.260
DIRECTOR	.501	2.090	.054

Dependent variable: Value of Option Awards

Table 21: Non-equity Incentive Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		2.299	.036
AGE	-.141	-.721	.482
EPSEX	4.295	1.031	.319
EPSIN	-3.444	-.828	.421
ROE	-.532	-.251	.465
ROA	-.220	-.320	.753
EMPL	-1.075	-2.967	.010
TOTAL ASSETS	.522	2.368	.032
DIRECTOR	.169	.815	.428

Dependent variable: Non-Equity incentive compensation

### Total compensation regression model

Table 22 presents the results of the regression analysis between the selected variables and CEO total compensation. Total assets, the number of employees and CEO who serve as director were statistically significant in determining CEOs total compensation. One aspect of this result should be expected because the real estate sector is underpinned by a large asset base. Therefore, the value of asset under management could be a possible variable in determining total compensation.

Table 22: Total Compensation Regression Results

Model	Standardized coefficient – Beta	t	Sig.
(Constant)		2.644	1.018
AGE	-.173	-.964	.351
EPSEX	3.176	.829	.420
EPSIN	-2.171	-.567	.579
ROE	-.249	-.382	.708
ROA	-.506	-.802	.435
EMPL	-1.073	-3.220	.006
TOTAL ASSETS	.447	-2.205	.043
DIRECTOR	.510	2.673	.017

Dependent variable: Total compensation (salary +bonus + other annual +restricted stock grants)

## 6. Summary and Implications

This study presents very interesting results when analyzed against the premise that it is the first of its kind to examine the drivers of CEO compensation in three sectors over a twenty two year period (1992 – 2013). Table 23 provides a comprehensive summary of the results across the three sectors- financial, insurance and real estate

Table 23 Comprehensive Summary of the Results

<b>FINANCIAL SECTOR</b>		
<b>Pay Component</b>	<b>Adjuster R Square for the model</b>	<b>Significant Predictors at 5%</b>
SALARY	0.067	AGE, DIRECTOR
BONUS	0.020	DIRECTOR
STOCK AWARDS	0.025	DIRECTOR
OPTION AWARDS	0.032	DIRECTOR
NON-EQUITY INCENTIVE	0.022	DIRECTOR
CHANGE IN PENSION	0.057	AGE, DIRECTOR
TOTAL COMPENSATION	0.036	DIRECTOR
<b>INSURANCE SECTOR</b>		
SALARY	0.089	EMPL, DIRECTOR
BONUS	0.021	DIRECTOR
STOCK AWARDS	0.045	ROE, ROA, ASSETS, DIRECTOR
OPTION AWARDS	0.134	EMPL, DIRECTOR
NON-EQUITY INCENTIVE	0.283	AGE, SAAETS, ROA, EMPL, DIRECTOR
CHANGE IN PENSION	0.104	ROE, ROA, DIRECTOR
TOTAL COMPENSATION	0.045	ASSETS, EMPL, DIRECTOR

**REAL ESTATE SECTOR**

SALARY	0.959	DIRECTOR, AGE
BONUS	0.195	NONE
STOCK AWARDS	0.452	DIRECTOR, EMPL
OPTIONS AWARDS	0.094	NONE
NON-EQUITY INCENTIVE	0.321	ASSETS, EMPL
TOTAL COMPENSATION	0.426	ASSETS, EMPL, DIRECTOR

One dominant factor driving CEO compensation in the financial sector (i.e. banking industry) was CEO who also serves as director. While another study by Talmor and Wallace (2002) has found ROE to be a significant variable and independent director to be a neutralizing factor against excessive CEO compensation, one concern with that study is the relatively short period of time over which it was carried out that is, 1992 to 1997. Given that CEOs who serve as directors are normally able to exert influence over their compensation packages, it is not surprising why the variable “director” was statistically significant.

The results in the insurance sector did not show any single dominant variable. Interestingly however, CEO salary and bonus were influenced largely by CEOs who served as directors. Stock options and change in pension schemes were mostly driven by ROE and ROA. However, only non-equity incentive compensation in the insurance sector was influenced by CEO age.

One important observation was that EPS was not a significant variable in determining CEO compensation in any of the three sectors examined. This supports the findings of Kim and Tucker (2014) in their study of the consumer staples sector. Based on this study period covering 22 years, it can be concluded that EPS may be an over-rated financial measure whose substantive function is to aid in financial analysis rather than to influence executive compensation.

The real estate sector presented unique results. Bonus and option awards were not influenced by any of the selected variables. This result is not entirely surprising because bonus in the real estate sector appears to be driven by the dollar value of assets disposed of rather than the value of asset under management. While the number of employees was significant in the real estate sector, it contrasts with the financial banking sector where the number of employees was not significant. Therefore, while the null hypothesis for all the other pay components in the other sectors have been rejected, an acceptance of the null for bonus and option awards in the real estate sector would be possible.

In concluding, this study provides the opportunity for a better understanding of the drivers of CEO compensation over an extended period. The relative strength of analyzing data over an extended time horizon cannot be over emphasized as it allows for the effects of short-term seasonal effects and temporary shocks to be fully accounted for in the data analysis over time. It would be interesting to see what the results of prior studies would be if they were to be extended over a time period similar to this study. It would provide the opportunity for us to get a better understanding of CEO compensation; this could be fertile ground for future research.

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