

CEO COMPENSATION AND FIRM PERFORMANCE: NON-LINEARITY AND ASYMMETRY

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ABSTRACT

The study examined the relationship between CEO compensation and firm financial performance of listed oil and gas companies in Nigeria. The study was conducted for a period from 2011 to 2021. The study adopted an Ex-post facto research design. The ex-post facto research design was used because the study relied heavily on already existing secondary data of all listed oil and gas companies in Nigeria. The population of the study was all the twelve (12) oil and gas companies listed on the floor of the Nigerian Stock Exchange (NSE, 2021). The sample size of the study was eight (8) oil and gas companies listed on the Nigeria stock exchange. Based on the short-run effect, the results revealed that during the favourable period, CEO remuneration Pay-out has a positive and significant association with the firm financial performance of listed oil and gas companies in Nigeria. Also, the results revealed that during the period positive outcome, CEO Dividend has a negative and a significant relationship with the firm financial performance of listed oil and gas companies in Nigeria. Finally, in the short run, the results revealed that during the favourable period, CEO Stock has a negative and significant with the firm financial performance of listed oil and gas companies in Nigeria. the study concluded based on the asymmetry results that CEO compensation has a significant effect on the financial performance of listed oil and gas companies in Nigeria. On the basis of the findings and the conclusion made above, the study recommends that: The oil and gas companies should always consider the asymmetric effect of CEO compensation in determining the kind of incentives to be given to the CEOs

Keywords: CEO compensation, CEO remuneration Pay-out, CEO dividend and CEO stock

1.0 INTRODUCTION

Chief executive officer (CEO) compensation has been generally viewed as an important factor to mitigate the conflict of interest between shareholders and managers in a firm. It has been acknowledged by Sani (2019), that CEO compensation could play an important role to align interests. CEO is the highest position in a firm appointed by the board of directors. In view of the strategic position of CEOs, they must play a mediating role between the management and the board of directors. As the CEO's incentive schemes are usually dependent on a firm's performance, they often make short-term decisions to enhance the firm's performance mainly, in terms of Profitability.

Incentive systems are a common phenomenon among firms and can be implemented at different organizational levels within a company, but the top management of the organization generally receives the most significant bonus. The bonus is commonly a variable compensation tied to their behaviour within the firm and is intended to serve as a motivation tool to enhance firms' performance which could lead to dividend payment (Grabke, et al., 2002). Furthermore, various compensation is also considered a strategy to attract a desirable high performing top manager (Conyon, 1997). In the same vein, Chaudhri (2003) agree that higher compensation of executives increases their performance.

The substantial increase in executives' compensation has been an area of great interest to stakeholders, studies have examined the relationship between top management pay and firm performance for instance; Lilling (2006); Attaway (2010); Banker, et al (2013) conducted studies on the relationship between executive compensation and organization performance.

Despite the vast amount of research for instance Randoy & Nielsen (2002); Bhatnagar & Trimm, 2011, a number of issues still remain unresolved. The concern about the existence of asymmetries and non-linearities in the relationship between executive compensation and firm performance, in particular, appear to have been left relatively unexplored.

The purpose of this study is to gain further insights into the nature of the relationship between Chief Executive Officer (CEO) compensation and firm Financial performance by empirically examining this relatively unexplored area of asymmetry, using oil and gas companies in Nigeria spanning a period of ten years, from 2011 to 2020.

H01 Executive stock has no significant effect on the Financial Performance of listed oil and Gas Companies in Nigeria.

H02 Dividend payment has no significant effect on the Financial Performance of listed oil and Gas Companies in Nigeria.

H03 Cash Payment has no significant effect on the Financial Performance of listed oil and Gas Companies in Nigeria.

This section looked at the general overview of the relationship between CEO compensation and the financial performance of listed oil and gas companies in Nigeria. The section further discuss the gaps identified and the methods to address the gaps by formulated hypotheses.

2.0 LITERATURE REVIEW

This section focuses on the review of concepts, relevant previous empirical studies and the theoretical framework that anchors the study. These are discussed in the sub-section below.

2.1 Conceptual Issues

According to Shin, Lee and Joo (2009), Executive Compensation is composed of the financial compensation and other non-financial awards received by an executive from their firm for their service to the organization. It is typically a mixture of salary, bonuses, shares of or calls options on the company stock, benefits and perquisites, ideally configured to consider

government regulation, tax law, the desires of the organization and the executive, and rewards for performance. Executive compensation is a broad term for the financial compensation awarded to a firm's executives. Executive compensation packages are designed by a company's Board of Directors, typically by the compensation committee consisting of independent directors, with the purpose of incentivizing the executive team, who have a significant impact on company strategy, decision-making, and value creation as well as enhancing Executive Retention.

Sun et al. (2013) define executive compensation as remuneration packages paid to senior leaders in business, most commonly the CEO. Executive compensation packages differ from employee remuneration both in scale and the benefits offered. Stock options form an integral part of most executive compensation packages, as well as a large basic salary, although many will offer a low basic salary and more favourable stock options to reduce the tax burden.

This study aligns itself with the definition of Sun et al. (2013) and considers the remuneration to be both the basic benefits and other incentives.

Firm performance on the other hand could vary, depending on the context of its use (Marimuthu et al, 2009). A wide variety of firm performance definitions have been introduced in the literature (Barney, 2007). Firm financial performance is generally defined as a measure of the extent to which a firm uses its assets to run the business activities in getting revenues. It examines the overall financial health of a business over a given period of time and can be used to contrast the performance of identical firms in similar industries or between industries in general (Atrill et al. 2009). The main source of data for determining firm financial performance is the financial statement, the product of accounting which consists of the Statement of financial position which shows the assets liabilities and equities of a business, the income statement that records the revenues, expenses and profits in a particular period, the cash flow statement which exhibits the sources and uses of cash in the period, and the statement of changes in the owners' equity that represents the changes in owner's wealth. Firm financial performance is commonly reflected in the calculation of financial ratios that show the link between numbers in the financial statement. The financial ratios may include the computation of the profitability, efficiency, liquidity, gearing, and investment of a particular firm. Moreover, firm financial performance generally may also be reflected in market-based (investor returns) and accounting-based (accounting returns) measures (Griffin & Mahon, 1997).

For instance, market-based indicators are used as a measurement for firm financial performance in terms of price per share and Tobin's Q which indicate the market value or the share of the firm as well as the financial prospect of the firm in the future. Additionally, what the shareholders have perceived from the returns distributed by the firm is also the driver of the share price. This price may lead to the market value of the firm. Alternatively, accounting-based measures, including profitability, efficiency, liquidity, gearing, and investment ratios, are calculated using the figures from the financial reports and may represent a firm's financial performance. According to Atrill et al. (2009), the ratios that may be utilized to calculate the firm's profitability are the return on assets (ROA), return on equity (ROE) and return on investments (ROI). These ratios express the success of a firm in generating profits or returns from the resources owned. In contrast, the market-based measure

is believed to be more objective because it relies on one market's responses to particular decisions made by a firm (Griffin & Mahon 1997). The choice of whether to use accounting or market-based calculations for measuring a firm's financial performance depends upon the specific aims of the research.

2.2 Empirical Review

Campbell (2015) examined the complex relationship between compensation levels of the top management team (TMT) and firm performance. A core objective of the study was the comparison of executive compensation and company performance for United States-based companies. For the study, the value of the options granted was determined using the Modified Black Scholes method. The statistical procedure employed in the study was ordinary least squares (OLS) regression analysis. OLS regression analysis for the study utilized SPSS 22.0. Findings from the study revealed that a significant relationship exists between CEO compensation and the accounting-based measure of performance which accounted for 11.4% of the variance observed in the accounting-based measure of performance. The results also showed that levels of Vice President Compensation have a stronger direct relationship with firm performance than CEO compensation.

In the same trend, Nulla (2014) in his study investigated the effect of CEO roles on the performance of the New York Stock Exchange (NYSE) companies from the period 2005 to 2010. This study selected one hundred and twenty companies through a stratified sampling method. This study demanded the characteristics of numerical and objectivity as such the quantitative research methodology was applied. It was found that there was the relationship between CEO salary, CEO bonus, CEO total commendation, and accounting firm performance, under both roles.

Olalekan and Bodunde (2015) examined the impact of CEO pay on the performance of 11 selected Nigerian quoted banks between 2005 and 2012, using a dynamic Generalized Method of Moments (GMM). The study revealed that CEO pay exerts a significant but negative influence on bank performance in Nigeria. This study, therefore, concludes that rather than being an important corporate governance mechanism to align the interests of the CEO with those of shareholders, the CEO pay of Nigerian quoted banks is indeed part of the agency problem in the industry.

Ayodele (2012) in his paper examined the effect of executive compensation of ownership structure on firm performance of commercial Banks in Lagos State, Nigeria. A simple random sampling technique was used to sample 240 personnel from a cross-section of banks in Lagos State, Nigeria. A structured questionnaire consisting of 25 items as an instrument for data collection was employed. The data were analyzed using the chi-square technique. The results of the analysis revealed that there is a significant relationship between management ownership and a bank's market value. However, the finding shows that executive compensation structure does not affect a bank's market value. The paper also revealed that among larger commercial banks, size is a key criterion in determining executive compensation as it is significantly but negatively related to compensation.

Bhatnagan and Trimm (2011) in a study explored the Agency managerial power theories to explain the relationship among the various components of executive compensation, firm

performance and unsystematic risk in the US financial sector. Institutions in the financial sector listed on the NASDAQ that have been in existence from the pre-financial crisis period January 03, 2006, to the post-financial crisis December 27, 2009, are examined. We find that the Agency theory does not fully explain the behaviour of executives and their risk appetite. Managerial power theory fares better in this regard, as managers are focused mostly on their base salary. The data analysis shows that stock options are not significantly influenced by unsystematic risk; instead, the base salary of executives has been significantly influenced by market risk and firm performance.

Ozkan (2011) examined the link between CEO pay and performance employing a data set of 390 UK nonfinancial firms from the FTSE All-Share Index for the periods 1999-2005. He included cash and equity-based components of CEO compensation in his analysis. The results indicated a positive and significant link between CEO cash compensation and performance; however, the link between total compensation and performance was positive but not significant. The findings from the study also suggested that larger firms pay their CEOs higher compensation, which one can interpret as reflecting their demand for higher quality CEO talent. Further, he noted that firms with larger board size pay their CEOs a higher level of total compensation and moreover, the proportion of non-executive directors on board do not have a significant impact on CEO cash compensation, while non-executive directors share ownership has a significant impact suggesting that ownership can provide incentives for non-executive directors to be more active in monitoring for CEO compensation packages.

2.3 Theoretical Framework

For this study, two theories anchored the framework of this paper. For instance, the Agency theory suggests that compensation policy makes executives pay attention to corporate performance or shareholder wealth. Incentives for executives make them exert appropriate efforts on behalf of shareholders. There are many mechanisms through which compensation policy can provide value-increasing incentives (McKnight & Tomkins, 1999). Executive compensation is one of those internal control mechanisms. Performance-based bonuses, share options and share ownership schemes are examples of incentive compensation schemes (Jensen & Meckling, 1976; Jensen & Murphy, 1990). Murphy (1996) argued that the quantum of compensation determines where executives work, and the compensation structure determines how hard they work. Shareholders who are well-diversified and risk-neutral are more likely to prefer a compensation package with maximum variability based on corporate performance. However, a risk-averse executive's natural tendency is to desire a compensation package with maximum certainty. Therefore, in deciding the extent to which the compensation is contingent on corporate performance, a balance must be struck between the interests of both shareholders and executives (Mehran, 1995). Innovations in compensation policy have received considerable attention in the past decade. These innovations have frequently sought to adjust the balance between long-term and more immediate forms of compensation, or between certain performance contingent elements. Although many different kinds of compensation schemes have been developed to mitigate the agency problem, this paper focuses on CEO cash compensation only.

On the other hand, the Expectancy theory which was first developed by Vroom (1964) and explicates the relationship between incentives and the motivation of the individual.

Expectancy theory is built on three assumptions regarding behaviour: an individual's perception that effort is linked to performance, the individual's expectation that received compensation is linked to his or her performance, and that the motivation of the individual depends on how the individual values a received reward (Lawler, 2000). By strengthening an employee's or other executive's perception of these relations, the motivation can be increased and thereby, the person's performance which will also increase dividend payment (Sloof&Praag, 2007). In resemblance with Agency theory, Expectancy theory thus supports the argumentation behind incentive systems when applied to the context of pay for performance and has gained support by amongst others Kominis and Emmanuel (2007).

3.0 METHODOLOGY

For the purpose of this research, this study adopted an Ex-post facto research design. The ex-post facto research design was used because the study relied heavily on already existing secondary data of all listed oil and gas companies in Nigeria.

The population of the study was all the twelve (12) oil and gas companies listed on the floor of the Nigerian Stock Exchange (NSE, 2021) The total numbers of firms were derived from the Nigerian Stock Exchange (NSE) factbook as at 2021. The sample size of the study was eight (8) oil and gas companies listed on the Nigeria stock exchange. The eight (8) oil and gas companies selected for the study are selected on the basis of availability of data and are also listed and remain listed on Nigerian Stock Exchange throughout the period under study. The companies include Mobil Plc, Total Nigeria Plc, Forte Oil Plc, Japaul Oil Plc, Amino International Plc, Rai Unity Pet Plc, Internal Plc and MRS Oil Nigeria Plc. The oil and gas companies selected are believed to be listed and remain listed on Nigerian Stock Exchange throughout the period under study and their data are available for the periods under study.

The study used a secondary source of data collection. The data was collected from the annual reports and accounts of the sampled oil companies, listed on the Nigerian Stock Exchange factbook and other relevant sources for a period of ten (10) years (2011 to 2021). The firms are public limited companies listed on the Nigerian Stock Exchange. By virtue of being public limited companies and as a requirement of being listed, an annual financial report has to be made available to the Nigerian Stock Exchange.

The study used the panel regression technique of data analysis. The technique was used to examine whether each independent variable is associated with the dependent variable. The various hypotheses and variables are combined into a functional equation to explain the relationship between performance and explanatory variables.

For the purpose of the study a model is specified and estimated was adapted. The study was adopted because of the nature of the analysis the study applied.

$$ROA = f(\text{CSHDPO}, \text{CSHDIV}, \text{CEOST})$$

$$ROA = \beta_0 + \beta_1\text{CSHDPO}_{it} + \beta_2\text{CSHDIV}_{it} + \beta_3\text{CEOST}_{it} + \varepsilon_{it}$$

Where:

ROA = Return on Asset, CSHDPO= CEO Remuneration Pay out, CSHDIV = CEO Dividend, CEOST =CEO Stock.

β =constant

β_0 = coefficient of the parameter estimate.

ϵ_t = Error term of company i in time t

4.0 RESULT AND DISCUSSION

This subsection discusses the analysis of the data obtained. The section contains the descriptive analysis and regression analyses adopted.

Descriptive analyses

Table 1: Descriptive Statistics

	ROA	CSHDPO	CSHDIV	CEOST
Mean	1.457824	44.44436	1469837.	5.689569
Median	3.285626	22.81340	597484.0	0.018286
Maximum	50.83441	1566.600	9019998.	40.87591
Minimum	-71.35736	-494.3724	0.000000	0.000000
Std. Dev.	13.71198	179.4764	1856208.	12.24365
Skewness	-1.738011	6.591392	1.527906	1.868767
Kurtosis	13.17486	59.75247	5.484188	4.797170
Jarque-Bera	433.5393	12729.86	58.15941	64.49616
Probability	0.000000	0.000000	0.000000	0.000000
Sum	131.2042	3999.992	1.32E+08	512.0612
Sum Sq. Dev.	16733.65	2866848.	3.07E+14	13341.71
Observations	90	90	90	90

Source: Eview 2022

The table above indicates that return on asset, CEO Salary Payout, CEO Dividend, and CEO Stock mean are 1.457824, 44.44436, 1469837 and 5.689569 respectively.

The table also shows that the standard deviation of return on asset is 13.71198, this suggests that the data are widely dispersed from the mean because the standard deviation is more than the mean value. The minimum and maximum values are -71.35736 and 50.83441 respectively.

The descriptive statistics indicate that the standard deviation of CEO Salary Pay-out is 179.4764, this suggests that the data are widely dispersed from the mean because the standard deviation is more than the mean value. The minimum and maximum values of -494.3724 and 1566.600 respectively.

The result revealed that the standard deviation of CEO Dividends 1856208, suggests that the data are widely dispersed from the mean because the standard deviation is more than the mean value. The minimum and maximum values of 0.000000 and 9019998 respectively.

From the descriptive analysis, the result indicates that the standard deviation of CEO Stock is 12.24365, this suggests that the data are widely dispersed from the mean because the standard deviation is more than the mean value. The minimum and maximum values of 0.000000 and 40.87591 respectively.

From the descriptive statistics table, the probability value of the Jarque-Bera test of ROA, CSHDPO, CSHDIV and CEOST is less than 5%. It indicates that they are not normally distributed. While FAGE has a probability, the value of 0.373283, indicates that FAGE is normally distributed. However, the Gaussian theorem (1929) and Shao (2003) suggest that the normality of data does not in any way affect the inferential statistics estimate to the BLUE.

Table 2: Regression Analysis Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ROA(-1)	0.086474	0.104201	0.829875	0.4091
CSHDPO	0.021031	0.008721	2.411451	0.0182
CSHDIV	-1.71E-08	8.32E-07	-0.020550	0.9837
CSHDIV(-1)	3.42E-06	8.79E-07	3.896215	0.0002
CSHDIV(-2)	-2.32E-07	9.07E-07	-0.255742	0.7988
CSHDIV(-3)	-3.00E-06	8.78E-07	-3.413958	0.0010
CEOST	-0.037137	0.111388	-0.333407	0.7397
C	0.501391	2.270984	0.220781	0.8258
R-squared	0.269688	Mean dependent var		1.939248
Adjusted R-squared	0.204977	S.D. dependent var		13.57417
S.E. of regression	12.10328	Akaike info criterion		7.912278
Sum squared resid	11572.67	Schwarz criterion		8.139029
Log likelihood	-336.1841	Hannan-Quinn criter.		8.003584
F-statistic	4.167569	Durbin-Watson stat		1.952948
Prob(F-statistic)	0.000597			
*Note: p-values and any subsequent tests do not account for model selection.				

Source: Eview 2022

Table 3:ARDL Cointegrating And Long Run Form

ARDL Cointegrating And Long Run Form	
Dependent Variable: ROA	
Selected Model: ARDL(1, 0, 0, 4, 2, 0, 0)	
Date: 10/12/21 Time: 06:53	
Sample: 1 90	

Included observations: 85				
Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CSHDPO_POS)	0.037280	0.009163	4.068518	0.0001
D(CSHDPO_NEG)	0.038358	0.009077	4.225659	0.0001
D(CSHDIV_POS)	-0.000001	0.000001	-0.778928	0.4386
D(CSHDIV_POS(-1))	-0.000004	0.000002	-2.780164	0.0070
D(CSHDIV_POS(-2))	0.000006	0.000002	3.780652	0.0003
D(CSHDIV_POS(-3))	-0.000003	0.000001	-2.448849	0.0168
D(CSHDIV_NEG)	0.000002	0.000002	0.936789	0.3520
D(CSHDIV_NEG(-1))	0.000006	0.000002	3.081341	0.0029
D(CEOST_POS)	-0.077439	0.102705	-0.754001	0.4533
D(CEOST_NEG)	-0.043674	0.123560	-0.353469	0.7248
CointEq(-1)	-0.885387	0.099898	-8.862903	0.0000
Cointeq = ROA - (0.0421*CSHDPO_POS + 0.0433*CSHDPO_NEG + 0.0000				
*CSHDIV_POS + 0.0000*CSHDIV_NEG -0.0875*CEOST_POS -0.0493				
*CEOST_NEG + 3.7472)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CSHDPO_POS	0.042105	0.011822	3.561534	0.0007
CSHDPO_NEG	0.043324	0.011585	3.739483	0.0004
CSHDIV_POS	0.000004	0.000002	1.791909	0.0774
CSHDIV_NEG	0.000004	0.000003	1.657769	0.1018
CEOST_POS	-0.087464	0.117393	-0.745051	0.4587
CEOST_NEG	-0.049328	0.140256	-0.351701	0.7261
C	3.747154	3.445746	1.087472	0.2805

Source: Eview 2022

DISCUSSION OF FINDINGS

From the results of the ARDL analysis presented above, the findings revealed that CEO Salary Pay-out has a positive coefficient of 0.021031 and a significance level of 0.0182. This indicates that a one unit increase in CEO salary will lead to a 0.021031 increase in the financial performance of listed oil and gas companies in Nigeria.

Also, the analysis revealed that CEO Dividend has a negative coefficient of -1.7108 and a significance level of 0.9837. This indicates that a one-unit increase to CEO Dividend will lead to 1.7108 decrease in the financial performance of listed oil and gas companies in Nigeria.

Finally, the findings revealed that CEO Stock has a negative coefficient of -0.037137 and a significance level of 0.7397. This indicates that a one-unit increase in CEO Stock will lead to 0.037137 decrease in the financial performance of listed oil and gas companies in Nigeria.

Factoring the asymmetry effect of the CEO compensation on the financial performance: based on the short-run effect, the results revealed that during the favorable period, CEO

Salary Pay-out has a positive coefficient of 0.037280 and a significant of 0.0001. This indicated that if CEO Salary Pay-out increases, the financial performance of listed oil and gas will decrease at 0.037280 and the result revealed a significant effect at a 5% level of significance. But at the negative periods, the result revealed a positive coefficient of 0.038358 and a significant of 0.0001. This indicates that if CEO Salary Pay-out increases there will be an increase in the financial performance of listed oil and gas companies in Nigeria.

Also, the results revealed that during the period positive outcome, CEO Dividend has a negative coefficient of -0.000001 and a significant of 0.4386. This indicated that if the CEO Dividend decreases, the financial performance of listed oil and gas will increase at 0.000001 and the result revealed an insignificant effect at a 5% level of significance. But at the negative periods, the result revealed a positive coefficient of 0.000006 and a significant of 0.0029. This indicates that if the CEO Dividend increases there will be an increase in the financial performance of listed oil and gas companies in Nigeria.

Finally, at the short run, the results revealed that during the favorable period, CEO Stock has a negative coefficient of -0.077439 and a significant of 0.4533. This indicated that if CEO Stock decreases, the financial performance of listed oil and gas will increase at 0.077439 and the result revealed an insignificant effect at a 5% level of significance. Also, at the negative periods, the result revealed a negative coefficient of -0.043674 and an insignificant of 0.7248. This indicates that if CEO Stock decreases there will be a decrease in the financial performance of listed oil and gas companies in Nigeria even though the result revealed an insignificant relationship.

5.0 CONCLUSION AND RECOMMENDATIONS

The study examined the effect of executive compensation on the financial performance of listed oil and gas companies in Nigeria. The result of the analysis revealed that CEO compensation has a significant effect on the financial performance of listed oil and gas companies in Nigeria. Therefore, the study concluded based on the asymmetry results that CEO compensation has a significant effect on the financial performance of listed oil and gas companies in Nigeria.

On the basis of the findings and the conclusion made above, the study recommends that:

1. The oil and gas companies should always consider the asymmetric effect of CEO compensation in determining the kind of incentives to be given to the CEOs

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