THE THRESHOLD EFFECT OF EXECUTIVE COMPENSATION ON ORGANISATIONAL PERFORMANCE IN THE NIGERIAN INSURANCE INDUSTRY

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Abstract

This study investigates the threshold effects of executive compensation on both financial and non-financial performance in the Nigerian insurance industry. Using panel data from 16 quoted Nigerian insurance companies (2010–2022), the study employs a dynamic panel threshold regression framework based on the generalised method of moments (GMM). The results reveal inverted U-shaped relationships across all metrics. Moderate increases in executive pay enhance profitability and market valuation, but excessive compensation leads to diminishing returns. Threshold points were identified at 202 per cent for return on assets (ROA), 273 per cent for Tobin's Q (TOQ), and 544 per cent for corporate social responsibility (CSR). The findings suggest that boards should avoid open-ended incentive structures. Regulators can use these thresholds as benchmarks for assessing corporate governance quality and preventing rent-seeking behaviour. This study provides an empirical application of dynamic panel threshold regression to analyse executive compensation in the under-researched Nigerian insurance sector. By identifying specific inflection points for financial efficiency (ROA), market valuation (Tobin's Q), and social legitimacy (CSR), the research moves beyond the traditional linear pay-performance debate. It offers a unique evidence-based framework for regulators like the National Insurance Commission (NAICOM) and corporate boards to optimize executive rewards, ensuring they incentivize performance without triggering managerial entrenchment or governance breakdown in a volatile emerging market.

Keywords: Corporate Governance, Corporate Social Responsibility (CSR), Dynamic Panel Threshold Regression, Executive Compensation, Generalised Method of Moments (GMM), Nigerian Insurance Industry

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1. INTRODUCTION

The critical role of management in the success of any organisation continues to stimulate interest in executive compensation as a consequential lever for organisational performance. An enduring contention in corporate governance research is whether the remuneration of corporate executives can be justified by the performance of the firms over which they superintend and whether their pay level is appropriate given a host of other relevant factors (Conyon et al., 2019; Edmans et al., 2023). While

there has been a lot of debate on the exact role of executive compensation, if any, on organisational outcomes, a further strand of enquiry has been to establish if the compensation of senior executives does attain a point after which it now has a deleterious, rather than positive, effect on organisational performance.

Traditional executive compensation research assumes a linear relationship between executive compensation and organisational performance. Evidence from relatively recent scholarship has, however, pointed out that this may not always hold, with the pay-performance relationship being non-linear, i.e., firm performance improves with an increase in executive compensation up to an optimal threshold, beyond which excessive pay results in diminishing or even negative returns (Pareek et al., 2026). This dynamic, which is depicted by an inverted U-shape, reflects the dual nature of compensation incentives. Moderate compensation spurs company executives to act in the long-term interest of shareholders, yet excessive compensation can engender managerial entrenchment and sub-optimal managerial decision-making arising from risk aversion (Masulis & Reza, 2015; Waseem et al., 2023).

In emerging markets, this dynamic is complicated by unique institutional pressures and regulatory frameworks (Jatana, 2023). In the Nigerian context, the National Insurance Commission (NAICOM) plays a pivotal role in shaping executive behaviour through the Code of Corporate Governance for the Insurance Industry. NAICOM's regulatory oversight through its mandates on risk management, solvency margins, and the vetting of "principal officers" creates a distinctive environment for compensation structures. However, despite these safeguards, the Nigerian insurance sector has historically grappled with issues of "weak institutional guardrails" and concentrated ownership, where executive remuneration can sometimes be divorced from actual underwriting performance or asset quality (Adegbite, 2012).

The necessity for this study arises from a critical gap in the literature. While much is known about pay-performance sensitivity in the banking sectors of developed economies, the insurance industry in Sub-Saharan Africa remains under-researched. This sector is particularly susceptible to "threshold effects" because insurance products rely heavily on public trust and long-term solvency. If executive compensation is perceived as excessive, crossing the threshold into rent-seeking, it may not only erode financial efficiency (return on assets, ROA) and market valuation (Tobin's Q) but also undermine the firm's social legitimacy (corporate social responsibility, CSR). Consequently, the research questions the paper seeks to answer is:

RQ1: Does compensation always incentivise executive performance, and therefore firm performance?

RQ2: Is there a saturation point or threshold beyond which compensation no longer motivates, and it indeed becomes negatively related to firm performance?

The study offers a threefold contribution to executive compensation literature. First, it provides empirical evidence from Nigeria's insurance industry, an under-researched segment of an emerging market economy where weak institutional guardrails and concentrated ownership structures make compensation dynamics particularly salient. Second, it advances the literature by explicitly examining the non-linear pay–performance relationship, moving beyond traditional linear models and demonstrating the existence of threshold effects that alter managerial incentives. Third, it integrates both financial performance measures (ROA and Tobin's Q) and non-financial outcomes (CSR expenditure), offering a holistic perspective on how executive pay influences organisational success across shareholder and stakeholder dimensions.

The remainder of this paper is organised as follows. Section 2 reviews the existing literature and builds the case for the hypotheses studied. Section 3 discusses the research methodology. Section 4 presents the results of the empirical data analysis. Section 5 discusses the main findings. Section 6 concludes the paper, providing the limitations and areas for future research.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

A review of executive compensation literature reveals a perceptible shift from linear models often based on agency theory to more nuanced frameworks, often non-linear, especially in emerging markets, where peculiar institutional and cultural contexts impact the pay-performance framework. This section briefly examines key theories, empirical evidence on the pay-performance dynamics, including CSR dimensions, and concludes by developing hypotheses specifically for Nigerian insurance companies.

2.1. Executive compensation theories

A central proposition of agency theory is that there is a dichotomy of interests between the owners of the firm and its agent-managers, and this divergence, otherwise known as the principal-agent problem, can be ameliorated by a variety of tools and mechanisms, one of which is executive compensation. Apart from the basic function of rewarding corporate executives for their service to the firm, executive compensation, especially performance incentive payments, motivates the executives towards achieving the profit maximisation goal of the firm. This is done by linking the growth in wealth of the executives to increases in the share price of the firm. Agency theory, therefore, postulates a linear and positive relationship between executive compensation and the financial performance of the organisation (Jensen & Meckling, 1976; Jensen & Murphy, 1990).

Stakeholder theory has grown as a rejection of the principle of shareholder primacy in corporate affairs with a consequent almost exclusive focus on firm financial performance (Bridoux & Stoelhorst, 2022). The theory sees the firm as a network of diverse contributors, workers, suppliers, regulators, and society, not just shareholders. Stakeholder theory has become more prominent as the unbridled pursuit of profitability has resulted in cases of financial collapse of firms, leading to calls for firms to reexamine their role in society. The theory calls

for the inclusion of non-financial performance indicators in the compensation contracts of executives, to ensure that incentives are provided to ensure attention to non-shareholder stakeholders (Ikram et al., 2023). According to Philip (2023), Stakeholder theory posits that firms with environmental, social, and governance (ESG) targets in their executive pay structures tend to outperform financially, have greater innovation, long-term value creation, market awareness, and enhanced reputational capital than similar firms without such targets.

2.2. Relationship of executive compensation to organisational performance

Scholars in the field of executive compensation have immersed themselves in the examination of the strength, quality, and direction of the relationship between executive compensation and the performance of the organisation. The enquiry on the validity of the pay-performance framework has been undertaken via a variety of dimensions, such as country-specific or studies based on industrial sectors. There is growing empirical evidence that some of the patterns of the relationship between executive compensation and organisational performance are non-linear, such as inverted U-shapes, where moderate remuneration increases performance via ROA and Tobin's Q up to a certain point, after which excess pay leads to diminishing or adverse returns owing to managerial entrenchment (Edmans et al., 2017; Masulis & Reza, 2015). In emerging markets, instances of threshold effects are pronounced (Pareek et al., 2026). Rasoava (2019) finds evidence that the relationship of financial performance to executive compensation is not linear. The study establishes the existence of threshold effects, with diminishing returns of financial performance to executive compensation increases, confirming that higher compensation does not necessarily translate into greater performance.

Since the turn of the century, institutional investors and academics have identified non-financial performance indices as critical for sustainable organisational success (Zhou, 2022). Traditional executive compensation contracts have been criticised for promoting short-termism and excessive risk-taking, thereby incentivising financial performance at the expense of ethical and sustainable goals (Aldogan Eklund, 2019; Petra & Spieler, 2020). Consequently, firms with socially conscious shareholders are increasingly adopting CSR contracting, especially the inclusion of ESG-related performance targets into compensation contracts (Cohen et al., 2023). These targets may include reductions in carbon emissions and environmental footprint, and improvements in energy efficiency. In emerging markets, corporate social responsibility engagements are important avenues to enhance firm reputation, reduce risk, and improve long-term sustainability (Cai et al., 2011).

In respect of CSR performance, results are similarly in line, with positive performance outcomes when moderate ESG incentives are provided to executives, performance, however, becomes neutral or negative when these incentives are excessive, pointing to non-linearity (Cai et al., 2011; Pareek & Sahu, 2024).

2.3. Hypothesis development

2.3.1. Executive compensation and financial performance: ROA and Tobin's Q

While traditional agency theory suggests a linear alignment between executive pay and firm performance, contemporary evidence, especially in emerging markets, points towards a threshold effect where excessive remuneration eventually yields diminishing returns (Edmans et al., 2023; Pareek et al., 2026). While initial and limited increases in compensation can spur company managers to improve efficiency and align their interests with shareholders, dramatic and significant pay increases over time often lead to managerial entrenchment via empire building, or sub-optimal decision making, often to avoid risk and maintain managerial wealth (Gayle et al., 2018; Masulis & Reza, 2015; Waseem et al., 2023). However, the "inflection point" at which compensation becomes detrimental is likely to differ between accounting-based and market-based performance metrics due to the specific institutional characteristics of the Nigerian insurance sector.

Return on assets (ROA) serves as an internal measure of managerial efficiency in asset utilisation. At the initial stage, increased compensation acts as an incentive for executives to improve operational rigour and underwriting profitability (Gayle et al., 2018). This position presupposes a positive and indefinite association between executive compensation and firm performance (Gayle et al., 2018; Jensen & Murphy, 1990). According to Lee et al. (2025), organisational financial performance improves along with increases in cash bonuses, up to an optimal threshold, which was determined to be about 50% of total executive compensation. After this point, financial performance drops, an indication that excessively large bonuses may serve as demotivation or encourage inefficient behaviour. In the Nigerian context, the threshold for ROA is expected to be reached when the direct cost of executive "perks" and high salaries begins to outweigh the marginal gains in operational income. Beyond this point, excessive pay may signal managerial entrenchment, where executives prioritise short-term accounting gains or risk-averse strategies to protect their high fixed remuneration, eventually eroding the firm's internal efficiency (Edmans et al., 2023; Ben Ali & Chouaibi, 2024).

In contrast, Tobin's Q represents a market-based valuation reflecting investor perceptions of a firm's future growth and governance quality. When Tobin's Q (TOQ), the inverted U-shaped effect is also observed. Investors may initially reward competitive executive pay as a signal of a firm's ability to attract highly rated talent (Lee et al., 2025). However, the "market-perceived" threshold is triggered when the level of pay is viewed as a governance failure or a mechanism for wealth expropriation (Ben Ali & Chouaibi, 2024). Because the stock market is sensitive to external perceptions of transparency, the decline in Tobin's Q often occurs as soon as the market anticipates empire-building (Pareek et al., 2026), even if accounting-based ROA remains temporarily stable. In an inefficient market like Nigeria, where information asymmetry is high and institutional guardrails are weak, the threshold for Tobin's Q may be reached earlier or manifest differently than for ROA (Farouk & Ahmed, 2023).

Based on this reasoning, we propose the following hypotheses:

H1a: There is a nonlinear relationship between executive compensation and the ROA of Nigerian insurance companies.

H1b: There is a nonlinear relationship between executive compensation and the Tobin's Q of Nigerian insurance companies.

2.3.2. Executive compensation and corporate social responsibility

The relationship between pay and CSR performance is underpinned by stakeholder theory, which posits that non-financial outcomes are essential for long-term sustainability. Scholars have examined the link between executive compensation and CSR outcomes. Findings are mixed: some studies report positive effects when CSR incentives are embedded in pay contracts (Hong et al., 2016; Khenissi et al., 2022), while others find no significant relationship or even negative outcomes when CSR investments are excessive (Borghesi et al., 2014; Cai et al., 2011). More recent evidence suggests that the relationship is also nonlinear: While moderate incentives encourage managers to invest in reputational capital and community relations, excessive compensation can lead to a reversal of this effect (Ben Ali & Chouaibi, 2024; Pareek & Sahu, 2024). This is also supported by industry reports, which highlight the growing trend of linking executive pay to ESG outcomes (O'Connor et al., 2021).

In the Nigerian insurance industry, where CSR is a critical tool for building public trust, a high threshold is anticipated (Amaeshi et al., 2016). However, beyond an optimal point, managers may engage in "symbolic" CSR or over-expenditure on social projects to deflect attention from excessive personal remuneration (Pareek & Sahu, 2024), a phenomenon that eventually depletes corporate resources and harms organisational standing (Tsang et al., 2021).

Accordingly, we propose:

H2: There is a non-linear relationship between executive compensation and the CSR performance of Nigerian insurance companies.

3. RESEARCH METHODOLOGY

3.1. Research design

This study investigates the existence and impact of a non-linear relationship between executive compensation and the firm performance of quoted Nigerian insurance companies. To accomplish this, we have adopted a dynamic panel threshold regression framework based on the generalised method of moments (GMM). Following Lee et al. (2025), the paper first tests the linear relationship between the two constructs using GMM, and before extending to a non-linear specification using dynamic panel threshold regression, this allows for the identification of threshold points, after which executive compensation may negatively impact organisational outcomes.

The choice of GMM as the baseline estimator is informed by its suitability in dealing with potential endogeneity, autocorrelation, and unobserved heterogeneity common in panel data. The adoption of lagged dependent variables captures temporal persistence in firm outcomes, while GMM estimation mitigates simultaneity bias. The methodological approach aligns with Seo and Shin (2016), who developed a dynamic panel threshold model that accommodates endogenous regressors and lagged variables.

The GMM model is expressed as follows:

$$y_{it} = \alpha y_{it-1} + \beta x_{it} + \gamma z_{it} + \eta_i + \varepsilon_{it} \quad (1)$$

where y_{it} is the dependent variable, y_{it-1} is the lagged dependent variable (endogenous), β represents the coefficient of the lagged dependent variable, x_{it} and z_{it} are independent variables, η_i represents the heterogeneous effects across individual units, and ε_{it} is the error term. The lagged dependent variable y_{it-1} is likely correlated with the error term ε_{it}, which violates the assumption of exogeneity in traditional ordinary least squares.

To test the non-linear relationship, the dynamic panel threshold regression is expressed as follows:

$$y_{it} = \beta_i + \beta_0 y_{it-1} + \beta_1 LNEXC_{it} + \beta_2 LNEXC_{it}^2 + \beta_3 LNFRS_{it} + \beta_4 LEV_{it} + \beta_5 LIQ_{it} + \varepsilon_{it} \quad (2)$$

The threshold effect is estimated by differentiating the quadratic equation and solving for the turning point (Pareek et al., 2026).

3.2. Measurement and variable specification

3.2.1. Dependent variables

The study adopted a comprehensive set of organisational performance indices. Financial performance is represented by two measures, ROA and Tobin's Q. ROA is the ratio of income (excluding extraordinary items) to the firm's total assets (Liu et al., 2015). ROA is perceived to be more representative of business performance than stock measures and provides an internal perspective on corporate governance measures within the firm. Tobin's Q is a measure of the efficiency of company management in creating long-term value for shareholders using company assets. It provides an external view of how corporate governance impacts the firm (Marashdeh, 2014). It is measured as the market value of the company's equity stock divided by its replacement cost (Yermack, 1996), with replacement cost proxied by the value of total assets (Khaled et al., 2020).

Non-financial performance is represented by the annual CSR performance of the firm. The importance of the consideration of non-financial performance is driven by stakeholder theory, which asserts that a company should not be solely focused on profit maximisation but should also fulfil its obligations to society (Pareek & Sahu, 2024). While ESG indices have been the main measures of non-financial performance in previous studies (Ben Ali & Chouaibi, 2024; Pareek & Sahu, 2023), resort has been made to annual CSR performance expenditure owing to the lack of ESG data for the whole period of the study. This follows the pattern of prior studies (Garg et al., 2021; Garg & Gupta, 2020).

3.2.2. Independent variable

Executive compensation is proxied by the logarithm of the total remuneration of the highest-paid director. This is the most consistently disclosed form of information about executive remuneration in the annual accounts of Nigerian companies and has been used in prior studies (Farouk & Ahmed, 2023; Odewale & Kamardin, 2015).

3.2.3. Control variables

To isolate the effect of executive compensation on organisational performance, we control for firm size, leverage, and liquidity. Firm size is measured as the natural logarithm of total assets. Agency theory suggests that firm size positively impacts compensation and organisational performance, as larger firms can afford higher-quality managers (Acero & Alcalde, 2019; Omoregie & Kelikume, 2019). Leverage is measured as total liabilities divided by total assets and reflects the firm's capital structure. Leverage plays a role both in the size and composition of executive compensation as well as the ability of the firm to engage in CSR (Erhemjamts et al., 2013; Maaloul et al., 2023). Liquidity is measured as current assets divided by current liabilities and has implications for both executive compensation and organisational performance. Firms with high liquidity can offer executives higher pay, though high liquidity could come at the price of loss of profit from possible investment opportunities (Nguyen et al., 2018). With respect to CSR, firms with poor liquidity may find it difficult to expend resources to CSR projects, negatively impacting their non-financial performance (Tsang et al., 2021).

Table 1. Summary of variables

Variable	*Operational definition*	*Source*
Dependent variables		
Return on assets (*ROA*)	Net profit before tax divided by the total assets	Liu et al. (2015)
Tobin's Q (*TOQ*)	The market capitalisation of the firm divided by total assets	Khaled (2020), Yermack (1996)
CSR performance (*LNCSR*)	Log of annual CSR expenditure	Garg and Gupta (2020), Garg et al. (2021)
Independent variable		
Executive compensation (*LNEXC*)	Log of remuneration of the highest-paid director	Farouk and Ahmed (2023), Odewale and Kamardin (2015)
Control variables		
Firm size (*LNFRS*)	Log of total assets	Acero and Alcalde (2019), Omoregie and Kelikume (2019)
Leverage (*LEV*)	The total liabilities divided by the total assets	Erhemjamts et al. (2013), Maaloul et al. (2023)
Liquidity (*LIQ*)	Current assets divided by current liabilities	Nguyen et al. (2018), Tsang et al. (2021)

Source: Author's elaboration.

3.3. Sample selection and data collection

The sample comprises 16 quoted Nigerian insurance companies operating across life, general, and composite categories. The sample is restricted to quoted companies to ensure data consistency and allow the use of market-based performance measures. Further screening excluded quoted companies that did not have annual reports for any year from 2010 to 2022 or that did not provide the required executive compensation and organisational performance data in their reports. Applying these criteria resulted in a final sample of 16 insurance companies.

The final panel dataset spans 13 years (2010–2022) and includes the following firms: African Alliance Insurance Company, AIICO Insurance, AXA Mansard Insurance, Consolidated Hallmark Insurance, Cornerstone Insurance, Coronation Insurance, Guinea Insurance, LASACO Assurance, Linkage Assurance, Mutual Benefit Assurance, NEM Insurance, Prestige Assurance, Royal Exchange, Sovereign Trust Insurance, SUNU Assurances Nigeria, and Veritas Kapital Assurance. The sampled companies collectively comprise the most significant proportion of the market in terms of total assets and gross premium collected.

4. RESEARCH RESULTS

4.1. Descriptive statistics

Table 1 below highlights a summary of the descriptive statistics of the variables contained in the study.

Table 2. Descriptive statistics

Variable	*Mean*	*SD*	*Min*	*Max*
ROA	0.022750	0.066240	-0.229937	0.222840
TOQ	0.350614	0.205287	0.036889	1.023463
CSR	5297.346	9554.480	0.000000	63937.00
EXC	31838.95	21081.66	3956.000	128883.0
FRS	7.194463	0.344457	6.540091	8.387440
LEV	0.475972	0.216206	0.097556	1.280912
LIQ	1.698676	1.464251	0.027551	12.18822

Executive compensation (*EXC*) exhibits wide variation (mean of N31.84 million per annum; SD = N21.08 million), ranging from N3.96 million to N128.88 million per annum, an indication of the existence of significant disparities in managerial pay practices across insurance companies in Nigeria. Return on assets (*ROA*) has a relatively low mean of 0.023 with moderate dispersion (SD = 0.066), ranging from -0.230 to 0.223, an indication of the presence of both loss-making and strongly profitable firms in the industry. Tobin's Q (*TOQ*) averages 0.351 (SD = 0.205), with values spanning 0.037 to 1.023, reflecting considerable heterogeneity

in market valuation relative to asset replacement costs. Corporate social responsibility (*CSR*) expenditures are highly skewed, with a mean of N5.30 million and a large standard deviation (N9.55 million), extending up to N63.94 million, suggesting that while many firms invest little or nothing in CSR (owing to years of loss-making), a subset commit substantial resources. The descriptive statistics highlight notable differences across the dependent and independent variables. These results suggest that profitability and market valuation exhibit moderate variability, though CSR performance and executive compensation display extreme dispersion, pointing to divergent strategic priorities and governance structures within the study sample.

4.2. Results of threshold analysis

The regression results provide evidence of non-linear dynamics between executive compensation and organisational performance.

Table 3. Threshold point of executive compensation on the financial performance of Nigerian insurance companies

Variable	*Coefficient*	*Standard error*	*t-statistic*	*p-value*
L.ROA	-0.7506	0.1337	-0.56	0.58
LNEXC	-1.0447	1.8056	-0.58	0.57
LNEXCSQ	0.0984	0.1758	0.56	0.58
LNFRS	0.8121	0.8143	1.00	0.33
LEV	-0.3078	0.3853	-0.80	0.44
LIQ	-0.0061	0.0145	-0.42	0.68
CONSTANT	4.0861	8.6915	0.47	0.64
F(5,15)	2.65			0.06*
AR(1)	-2.07			0.0488
AR(2)	-0.70			0.48
Sargan test	16.12			0.06*
Hansen test	7.20			0.62

*Note: Dependent variable: ROA. ***, **, * indicates 1%, 5%, and 10% significance levels, respectively.*

For financial performance measured by ROA, the coefficients of executive compensation (negative) and its squared term (positive) suggest an inverted U-shaped relationship, although statistical significance is weak. This implies that moderate increases in compensation may enhance efficiency, but excessive pay erodes profitability.

The threshold point is determined as follows:

$$ROA_{it} = 4.0861 - 0.7506ROA_{it-1} - 1.0447LNEXC_{it} + 0.0984LNEXC_{it}^2 + 0.8121LNFRS_{it} - 0.3078LEV_{it} - 0.0061LIQ_{it} \quad (3)$$

Taking the partial of Eq. (3) and setting it equal to zero:

$$\frac{\partial ROA}{\partial LNEXC} = -1.076 + 2(0.0984)LNEXC_{it} = 0$$

Taking the second order derivative yields:

$$\frac{\partial^2 ROA}{\partial^2 LNEXC} < 0$$

$$LNEXC = \frac{1.0447}{2(0.0984)} = 5.31 \quad (4)$$

$$EXC = e^{5.31}$$

$$EXC = 202.35\%$$

The threshold point of approximately 202% indicates the level beyond which compensation becomes detrimental to ROA.

For Tobin's Q, the results similarly suggest a non-linear relationship, with compensation positively associated at lower levels but turning negative beyond a threshold of 273%. Neither is statistically significant. This finding aligns with market-based perspectives: investors reward firms that incentivise executives appropriately, but discount those where pay appears excessive, interpreting it as a signal of weak governance or entrenchment.

Table 4. Threshold point of executive compensation on the financial performance of Nigerian insurance companies

Variable	*Coefficient*	*Standard error*	*t-statistic*	*p-value*
L.TOQ	0.6734	0.1795	3.75	0.00***
LNEXC	0.3219	2.4760	0.13	0.90
LNEXCSQ	-0.0287	0.2051	-0.14	0.89
LNFRS	1.5990	2.0628	0.78	0.45
LEV	-0.9794	0.7629	-1.28	0.22
LIQ	-0.0445	0.0417	-1.07	0.30
CONSTANT	-4.4543	19.7795	-0.23	0.82
F(5, 15)	9.19			0.00
AR(1)	-2.69			0.00***
AR(2)	-0.16			0.87
Sargan test	16.03			0.06
Hansen test	12.74			0.15

*Note: Dependent variable: TOQ. ***, **, * indicates 1%, 5%, and 10% significance levels, respectively.*

The threshold point is determined as follows:

$$TOQ_{it} = -4.4543 + 0.6734TOQ_{it-1} + 0.3219LNEXC_{it} - 0.0287LNEXC_{it}^2 + 1.5990LNFRS_{it} - 0.9794LEV_{it} - 0.0445LIQ_{it} \quad (5)$$

Taking the partial of Eq. (5) and setting it equal to zero:

$$\frac{\partial TOQ}{\partial LNEXC} = 0.3219 + 2(0.0287)LNEXC_{it} = 0$$

Taking the second order derivative yields:

$$\frac{\partial^2 TOQ}{\partial^2 LNEXC} < 0$$

$$LNEXC = \frac{0.3219}{2(0.0287)} = 5.61 \quad (6)$$

$$EXC = e^{5.61}$$

$$EXC = 273.14\%$$

Table 5. Threshold point of executive compensation on the non-financial performance of Nigerian insurance companies

Variable	*Coefficient*	*Standard error*	*t-statistic*	*p-value*
L.LNCSR	0.3593	0.1546	2.32	0.03**
LNEXC	3.7654	8.5577	0.44	0.67
LNEXCSQ	-0.2989	0.7116	-0.42	0.68
LNFRS	5.9489	6.7887	0.88	0.39
LEV	-0.6463	2.5819	-0.25	0.81
LIQ	-0.0913	0.0790	-1.17	0.27
CONSTANT	-32.7676	63.0746	-0.52	0.61
F(5, 15)	19.56			0.00***
AR(1)	-2.41			0.02***
AR(2)	0.33			0.74
Sargan test	27.21			0.00
Hansen test	12.78			0.24

*Note: Dependent variable: LNCSR. ***, **, * indicates 1%, 5%, and 10% significance levels, respectively.*

CSR performance also exhibits an inverted U-shaped relationship, with executive pay positively associated at moderate levels but declining beyond a threshold of 544%. This supports stakeholder theory, which posits that well-structured incentives can encourage socially responsible behaviour, but excessive pay may divert managerial focus toward wealth preservation rather than broader stakeholder obligations.

The threshold point is determined as follows:

$$LNCSR_{it} = -32.7676 + 0.3593LNCSR_{it-1} + 3.7654LNEXC_{it} - 0.2989LNEXC_{it}^2 + 5.9489LNFRS_{it} - 0.6463LEV_{it} - 0.0913LIQ_{it} \quad (7)$$

Taking the partial of Eq. (7) and setting it equal to zero:

$$\frac{\partial LNCSR}{\partial LNEXC} = 3.765 + 2(0.2989)LNEXC_{it} = 0$$

Taking the second order derivative yields:

$$\frac{\partial^2 LNCSR}{\partial^2 LNEXC} < 0$$

$$LNEXC = \frac{3.7654}{2(0.2989)} = 6.30 \quad (8)$$

$$EXC = e^{6.30}$$

$$EXC = 544.57\%$$

5. DISCUSSION

The findings of this study provide nuanced insights into the pay–performance relationship in Nigerian insurance firms; however, it is necessary to situate the mathematical evidence of the inverted U-shape against the observed "p" values. While the empirical analysis shows a clear mathematical inverted U-shaped relationship between executive compensation and firm performance, the coefficients for the quadratic terms do not reach standard levels of statistical significance ($p > 0.05$). Several factors intrinsic to the Nigerian insurance industry and the study's design may account for this lack of statistical "power".

First, the sample size of 16 quoted insurance companies, though longitudinal over 13 years, is relatively small for a dynamic panel threshold model. In GMM and threshold estimations, the degrees of freedom are quickly consumed by lagged variables and instruments, which can inflate standard errors and reduce the likelihood of achieving significance, even when a clear economic trend is visible. Second, the high volatility and idiosyncratic shocks within the Nigerian insurance sector during the study period (2010–2022), including recapitalisation exercises and currency devaluations, introduce "noise" into financial reporting. This dispersion, evidenced by the high standard deviation in ROA and CSR expenditure in the descriptive statistics, makes it difficult for the model to isolate a precise "turning point" with high confidence.

Lastly, the choice of a 10% significance level as a benchmark reflects the exploratory nature of this study in an emerging market segment where data transparency is limited. In such contexts, a mathematical trend that aligns with theoretical expectations (agency and entrenchment theories) holds substantive economic significance, even if it falls short of rigid conventional thresholds. This suggests that while a threshold exists mathematically at approximately 202% and 273%, the precise timing of the performance decline varies considerably across firms due to varying corporate governance quality.

The evidence of inverted U-shaped dynamics across financial and non-financial performance measures suggests that executive compensation operates effectively only within an optimal range. Beyond this threshold, excessive remuneration undermines organisational outcomes. From an agency theory perspective, the results partially validate the traditional view that compensation aligns managerial and shareholder interests. However, the observed decline in performance at higher pay levels highlights the limitations of agency theory's linear assumptions. This supports the argument that excessive compensation fosters managerial entrenchment and risk aversion, consistent with Masulis and Reza (2015). The stakeholder theory dimension is evident in the CSR results. Moderate compensation appears to encourage socially responsible behaviour, but excessive pay diverts managerial focus away from stakeholder obligations. This aligns with recent scholarship (Cohen et al., 2023) that emphasises the importance of embedding ESG-linked incentives into pay structures.

Comparatively, the Nigerian thresholds (202% for ROA, 273% for Tobin's Q, and 544% for CSR) are relatively high compared to studies in other emerging markets (Pareek et al., 2026; Jatana, 2023). This may reflect weaker institutional guardrails and disclosure practices in Nigeria, which allow compensation levels to escalate further before performance declines.

Practically, the findings underscore the need for boards to design compensation frameworks that balance financial incentives with CSR-linked targets, while regulators should strengthen disclosure requirements to prevent excessive pay. The results also highlight the importance of contextualising compensation studies within specific institutional environments, as threshold effects may vary across countries and industries.

6. CONCLUSION

This study examined the threshold effects of executive compensation on organisational performance in Nigerian insurance companies, using dynamic panel threshold regression with GMM. The results reveal that compensation has an inverted U-shaped effect: moderate pay enhances both financial and non-financial performance, while excessive remuneration undermines efficiency, market valuation, and CSR outcomes.

In conclusion, this study makes several important contributions to the executive compensation literature. First, it extends existing scholarship by providing rare empirical evidence from Nigeria's insurance industry, an under-researched segment of an emerging market economy where weak institutional guardrails and concentrated ownership structures make compensation dynamics particularly salient. Second, it advances theoretical understanding by moving beyond traditional linear models and demonstrating that the pay–performance relationship is non-linear, with threshold effects that alter managerial incentives once compensation exceeds optimal levels. Finally, the study enriches empirical analysis by integrating both financial indicators, such as ROA and Tobin's Q, and non-financial outcomes, specifically CSR expenditure, thereby offering a more holistic perspective on organisational performance that captures both shareholder and stakeholder dimensions. Taken together, these contributions position the paper as a meaningful extension of global corporate governance debates while also providing insights that are directly relevant to regulators, boards, and policymakers in emerging economies.

While the methodological approach adopted in this study is robust, some limitations should be acknowledged. First, as earlier stated, the sample size is relatively small, comprising 16 quoted insurance firms over 13 years. Second, the study relies on proxy measures due to disclosure constraints. Executive compensation is proxied by the remuneration of the highest-paid director, which, while consistently reported, does not capture the full structure of compensation packages such as bonuses, stock options, or long-term incentive plans. Similarly, CSR performance is measured by annual CSR expenditure, which may not fully reflect the quality or impact of CSR initiatives. These proxies, though practical, introduce potential measurement bias.

Third, the focus on quoted firms ensures data consistency and allows the use of market-based measures such as Tobin's Q, but it excludes unlisted insurers. This may bias results toward firms with stronger governance and disclosure practices, limiting the applicability of findings to the broader insurance sector.

Finally, while the dynamic panel threshold regression and GMM estimators are well-suited to addressing endogeneity and heterogeneity, the study does not incorporate additional robustness checks such as alternative model specifications, subsample analysis, or sensitivity tests.

A major challenge of executive compensation studies is the lack of granular executive compensation data. As more data repository firms become established, it is expected that they will have access to data on performance bonuses, long-term incentive plan, pensions, and other aspects of compensation that are presently not available via annual reports. The use of more granular compensation details instead of the highest-paid director proxy will lead to more nuanced outcomes. Another area of future research which can be pursued is the utilisation of alternative performance measures which look at other aspects of firm performance, indeed in this area, specific insurance industry ratios can be adopted. The study has relied completely on secondary data sources; more in-depth information and understanding of the drivers of performance can be obtained via interviews with firm executives and board directors.

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