

## Evaluating Determinants of Audit Fees of Quoted Non-Financial Firms in Nigeria

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### Abstract

Determination of audit pricing has become very critical after the corporate and audit failure experienced by many organisations in United States of America and Nigeria. It is paramount to emphasize that majority of these prior studies were done in the developed country without recourse to less developed nations like Nigeria. This could be as a result of differences in socio-economic contexts, infrastructure, cultural norms, and policy environments. Nevertheless, related studies have been conducted using Nigerian data, but remarkably these studies have been focused on health care, consumer goods, and banking industries without considering non-financial firms holistically. Therefore, this study provides a more comprehensive understanding of audit pricing dynamics, offering generalizable insights that transcend sector-specific peculiarities. We exploited the Nigerian institutional setting, audit pricing of 50 selected non-financial firms in Nigeria for the period of 10-years spanning from 2015 to 2024. The study adopts ex-post facto and cross-sectional research design to examine the relationship between

audit fee and its determinants such as firm operating risk, firm complexity, board independence and ownership structure. Data were obtained from 50 non-financial firms out of a population of 103 firms that were listed on the Nigeria Exchange Group from 2015-2024 spanning a period of 10 years. Secondary data collection method was employed in this study to obtain data from annual report within the study period. The data were subjected to some preliminary data tests such as descriptive analysis, correlation and variance inflation factor and was analyzed using linear regression after taking cognizance of hausman effect tests. Findings of the study indicated that ownership structure has a positive and significant effect on audit pricing of selected non-financial firms in Nigeria which was statistically significant at 1% level of significance while board independence showed a negative and significant effect on audit pricing which was also statistically significant at 10% level of significance. Conversely, firm operating risk and firm complexity showed a non-statistically significant effect on audit pricing of non-financial firms in Nigeria. Following the findings of this study, we therefore recommend that institutional ownership should be encouraged to assist in regulating audit pricing while operating risks should be cushioned to improve audit fees of non-financial firms in Nigeria. Finally, regulatory agencies should consider mandating more frequent audits or disclosures for highly complex firms to ensure that stakeholders are fully informed about the financial health of these entities.

**Key words:** Audit pricing, firm operating risk, firm complexity, board independence and ownership structure

## 1 Introduction

Auditing is a vital component of corporate governance, as it provides stakeholders with an independent opinion on the fairness and accuracy of a company's financial statements. However, the determination of audit pricing has become very critical after the corporate and audit failure experienced by Enron in the United States of America and Cadbury Plc in Nigeria (Onyeogubalu, Orjinta & Ofor, 2022; Abubakar, 2016; Emeka-Nwokeji, Nangih, Chiedu, Chendo & Eboatu, 2001). The pricing of audit work has been a central issue, and previous studies were motivated to examine the determinants of audit fees (Lai et al. 2020, Al-Harshani, 2008). Chersan (2019) maintained that the amount paid for audits is questioned as the audit quality provided by the financial auditors has become a growing issue over the last few years, especially due to the financial scandals, where the role of auditors has sometimes been direct. Audit pricing has a direct impact on the financial reporting of non-financial firms in Nigeria. The fees payable for audit services could influence the extent to which these firms invest in financial reporting systems, internal controls, and compliance with regulations. Firms with higher audit fees may be more inclined to invest in better financial reporting systems to minimize the costs associated with audit procedures.

It is worthy to note that extant literature revealed that the determinants of audit pricing have been extensively explored in developed countries. For instance, Xue and O'Sullivan, (2023) used UK data; Larbi, Mandzila, Meniaoui, and Moor, (2024) employed French data; Almeida & Silva, 2020 deployed Spanish data; Pronobis and Schaeuble, (2022) gathered data from the German stock exchange; Ruan & Zhang, 2021 examined Chinese data, while Lee, Khalaf,

Farag and Gomaa, (2024) investigated US data. However, Ileagu and Orjinta (2025) quoting Akosu, et al. (2024) argued that when audit service supply outweighs the available audit assignments, the audit fee tends to fall, which aligns with the laws of demand and supply. In consideration of the potent factors that might influence audit pricing, Orjinta & Emeka-Nwokeji (2016) cited by Ezinando (2020) documents that audit complexity and audit tenure, among others, are the likely factors that might determine audit fees. Yeboah, et al., (2023) document that high audit pricing is associated with auditors with a reasonable level of expertise in information processing and knowledge of the client industry conditions.

It is paramount to emphasize that majority of these prior studies were done in the developed country without recourse to less developed nations like Nigeria. This could be as a result of differences in socio-economic contexts, infrastructure, cultural norms, and policy environments. Nevertheless, related studies, which include those of Orjinta and Anichebe (2016) Ilaboya, et al, (2017); Iechukwu, (2017); Onaolapo, et al., (2017); Ibrahim & Ali, (2018); Alajo & Nzewi, (2020); Osevwe-Okoroyibo, Ofor and Orjinta, (2021); Musa, et al., (2021); Okoli, (2021); Lawal & Ibrahim, (2022); Olusola, (2022); Egiyi, (2022); Temitope, Anichebe and Orjinta, (2023); Orjinta and Akwuobi, (2023) have been conducted using Nigerian data, but remarkably these studies have been focused on health care, consumer goods, and banking industries without considering non-financial firms holistically. Therefore, this study provides a more comprehensive understanding of audit pricing dynamics, offering generalizable insights that transcend sector-specific peculiarities.

Additionally, the inclusion of firm complexity as a determinant of audit pricing introduces a novel proxy that captures the intricacies of organizational structure, operations, and reporting requirements, which are critical yet unexplored factors in the Nigerian context. In light of the above, the study investigated whether firm operating risk, firm complexity, board independence, and ownership structure have any effect on audit pricing of listed non-financial firms in Nigeria. This however form the significant reasons and justification for this publishable paper, hence the need to x-ray the effect of firm determinant factors on audit pricing. Therefore, this paper is subdivided into five sections including this introduction. Section 2 covers the review of the related literature, section 3 concentrates on the methodology adopted while in section 4 we present and discuss the results of the analysis. Lastly in section 5, we draw the conclusion and proffer our recommendation for policy implementation.

## **2. Literature Review**

### **Audit Pricing and Its Determinant Factors**

Audit pricing is defined as the sums payable to the auditor, for carrying out audit services offered to the client (company) (Akrawah & Akhor, 2016). Ohidoa and Okun (2018) also see audit pricing as the amount of fees received by an auditor for carrying out an audit assignment on the accounts of the client firm. The size of the audit fee is a major explanatory factor for the ability of the auditor to resist the pressure of management to issue misleading reports, regardless of the provision of advisory services. structure of the firm concerned and other professional considerations (Onyeogubalu, Orjinta & Ofor, 2022).

The determination of audit pricing has become very critical after the corporate and audit failures experienced by Enron and Cadbury Plc in Nigeria (Abubakar, 2016). Onyeogubalu, Orjinta and Ofor, (2022) quoting Musa, et al. (2021) study in Nigeria, explored the following variables, auditee size, risk, auditor size, reputation, engagement lag, and International Financial Reporting Standards (IFRS) implementation as the determinants of audit fees. According to Apadore and Letchumanan (2016), the determinants of audit pricing include profitability, corporate size, complexity, audit client risk and status of audit firm. Several factors determine audit pricing as used by previous studies. For instance, Xiong, et al. (2024) asserted that clients consider the reputation and brand value of the audit firms for negotiating the price of audit services. According to Kajola (2022) board independence, board size and firm leverage had a significant positive effect on audit pricing. Hossain and Sobhan (2019) affirmed that firm risk and company size a fundamental determinants of audit fees. Kimeli (2016) observed that audit pricing is determined by auditor size, auditor reputation, auditor experience, competition and auditor industry specialization. Bedard and Johnstone (2010) revealed that company size, complexity of the firm, auditee firm operating risk, and firm profitability are critical factors that determine audit pricing. Therefore, the pricing of an audit depends on various determinants factors, including type and complexity of the audit, size and industry of the organization, location and geographical scope, auditor's expertise and qualifications, time and resources required, level of risk involved, regulatory requirements, competition and market rates. But the determinants we studied in juxtaposition with its effect with audit pricing is stated below as follows:

#### **Firm Operating Risk and Audit Pricing**

Firm operating business risk is any factor, pressure or force that may prevent an entity from achieving its objectives, operating profitably and surviving. Risk assessment is the identification and analysis of risks relevant to the achievement of corporate objectives, determination of how such risk should be managed and implementation of a process to address such risks (Eke, 2018). Factors which may pose risk to the firm and which serve as bases for the measurement of risk include: incompetent management and staff; legislation; poor strategy and financial structure; political changes; competition; technological changes; accounting pronouncements; natural disaster; etc. Client operating risk has been a paramount factor that might influence on audit pricing. It gives odds of issuing an unqualified report on otherwise significantly misstated accounts by an auditor. Ashibogwu and Ogbolu (2020) affirmed that risk of audit is determined from inherent and control risks. The risk of audit that the auditor is exposed to were financial loss or damage to his reputation from litigation, sales in cash, the cash balance at bank, correction of the value of doubtful and disputed receivables, the calculated depreciation.

#### **Firm Complexity and Audit pricing**

Complexity is a firm specific characteristic that determine audit pricing. Alajo and Nzewi (2020) posited that the complexity of the firm attracts higher audit fees as it is depended on how long auditors had stayed in the audit engagement. Apadore and Letchumanan (2016) argued that firm complexity is a system that contains multiple entities that brings about high level of non-linear relationship. According to Okoli (2021), firm complexity is the structure of

the audit work that may enhance the level of auditee complexity. However, complexity had been measured in terms of number of subsidiaries, number of industries the firm engages, the number of different company locations and number of receivables relating to asset composition. Firm complexity relates to the sum of accounts receivables and inventory as a proportion of total assets. Client firm is said to be complex when there is many branches and subsidiaries both locally and internationally (Alajo & Nzewi, 2020).

### **Board Independence and Audit Pricing**

Board independence and audit pricing nexus has been subject to varying interpretations across both theoretical and practical perspectives. Some scholars argue that higher board independence tends to increase audit fees due to the demand for higher audit quality. Independent directors are seen as more likely to enforce strict monitoring mechanisms, ensuring that the audit is thorough to minimize the risk of financial misstatements. This demand for a high-quality audit often leads to longer audit engagements and more complex procedures, thus increasing audit fees. In contrast, another school of thought proposes that independent boards might lead to lower audit fees. This perspective hinges on the argument that independent directors improve internal controls, thereby reducing the auditor's perceived audit risk. With a reduced audit risk, auditors can adjust the scope and intensity of their procedures, leading to lower fees.

### **Ownership Structure and Audit Pricing**

The relationship between ownership structure, particularly board ownership, and audit pricing has been the subject of varying theoretical interpretations. One school of thought supports a positive relationship. This perspective is rooted in the agency theory, which suggests that when board members hold significant ownership stakes, they may demand higher quality audits to protect their investments and ensure effective monitoring. Since board members are both owners and managers, they have a vested interest in reducing information asymmetry between themselves and external stakeholders. This could lead to more stringent auditing processes and consequently higher audit fees, as auditors would need to invest more time and resources to meet heightened expectations (Hay, Knechel, & Wong, 2006).

Conversely, another school of thought posits that higher board ownership may lead to lower audit fees. This argument is often grounded in the alignment of interests between owners and managers, which reduces the need for external monitoring. With higher board ownership, the incentives of shareholders and managers are aligned, reducing the likelihood of agency conflicts that necessitate extensive auditing (Nelson & Mohamed-Rusdi, 2015). Consequently, companies with higher board ownership may perceive less need for comprehensive audits, leading to reduced audit fees. Lin and Liu (2009) find that firms with concentrated ownership structures, including board ownership, are less reliant on extensive auditing as a governance mechanism, leading to lower audit costs.

### **Theoretical Foundation: Agency Theory by Jensen and Meckling (1976).**

This paper is anchored on Agency theory that was developed by Alchain and Demsetz in (1972) and was extended by Jensen and Meckling in (1976). Agency theory addresses the inherent conflicts that arise from the principal-agent relationship, where principals (shareholders) delegate decision-making authority to agents (managers). This theory serves as a robust

theoretical framework for examining the determinants of audit pricing, particularly in relation to firm-specific characteristics and corporate governance mechanisms. The foundational assumption of agency theory is that agents are self-interested and may act opportunistically, potentially prioritizing personal benefits over the welfare of principals (Bendickson, Muldoon, Liguori & Davis, 2016). Consequently, agency problems emerge, necessitating monitoring mechanisms to align the interests of both parties. Audit pricing can be linked to this theory because external audits are a critical monitoring tool used to reduce information asymmetry and ensure that agents' actions are transparent and aligned with principals' expectations. The cost of audits, or audit fees, is therefore influenced by the severity of agency conflicts, which are shaped by firm-specific factors such as complexity, and risk profile, as well as the strength of corporate governance mechanisms like board independence and ownership structure.

### **Empirical Studies**

Xiong, et al. (2024) studied the connection between international accounting network memberships and audit fees in China. The study used secondary data collected from the Global Survey Report published by the International Accounting Bulletin from 2011 to 2019 analysed by employing descriptive statistics, correlation and regression techniques. The result showed that audit firms with international networks have a significant positive relationship with audit fees. This indicates that larger audit firms charged higher fees for audit engagement.

Indriasih et al. (2023) examine the relationship between audit complexity, company size, audit risk, company risk and audit fee in Indonesia. The ex-post facto research design was used to sample 16 companies of trading, service and investment listed on the Indonesia Stock Exchange from 2017 to 2021 through a purposive sampling technique. Descriptive statistics and multiple regressions were used in the analysis of data. The results showed that audit complexity and audit risk had a significant negative relationship with audit fees while auditee size had a significant positive relationship with audit fees.

Lawal and Ibrahim (2022) conducted a study on the determinants of audit fees among listed insurance companies in Nigeria. The study made use of correlational research design to sample 26 listed insurance companies covering the period of 2011 to 2020 through judgmental sampling technique. The data were analysed using random effect Generalized Least Square (GLS) regression technique. The results showed that audit firm size and client size has a significant effect on audit fees while client profitability, client complexity, client underwriting risk, and client liquidity risk has no significant negative effect on audit fees.

Alajo and Nzewi (2020) examined the effect of external audit fees determinants on audit fees in Nigeria. The aim of the study is to examine the effect of client complexity and board size on audit fees. They made use of ex-post facto research design to sample 15 deposit money banks for the period of 2009 to 2018 and analysed using descriptive statistics and multiple regression technique. The findings revealed that client complexity and board size has a significant positive effect on audit fees

Hossain and Sobhan (2019) conducted a study on the determinants of audit fees in Bangladesh. Ex-post facto research was employed to sample some selected firms from pharmaceutical and chemical industries. Descriptive statistics, correlation matrix and least square regression techniques was used to analysed the data. The result showed that client operating risk and firm

size has a significant impact on audit fees while firm profitability has no significant impact on audit fees.

Apadore and Letchumanan (2016) examined the impact of the determinants of audit fees among listed manufacturing companies in Nigeria. The aim of the study is to investigate the influence of firm profitability, corporate size, complexity, status of audit firm and audit client's risk on audit fees. The ex-post facto research design to sample 15 companies and analysed using multiple regressions technique. The findings revealed that firm profitability, corporate size, status of audit firm exert a significant influence on audit fees while complexity and client risk exert no significant influence on audit fees.

Orjinta and Anichebe (2016) examined the factors influencing the pricing of audit services among quoted financial firms in Nigeria. Secondary data sourced from annual reports of selected financial firms in Nigeria for a period of 2006 to 2016 was analysed using Ordinary Least Square (OLS) multiple regression. Pearson correlation matrix was used to check for multi co-linearity presence in the model and to explore the relationship between the explanatory variables and the dependent variable. The findings of the study revealed that audit risk has positive and statistical significant influence on audit fee which means that the higher the audit risk involved, the higher the audit fee charged. In addition, audit profitability (APROF) was found to have a positive effect on audit fee charged by auditing firms and this was statistically significant at 1%. The findings of the study revealed that audit risk has positive and statistical significant influence on audit fee which means that the higher the audit risk involved, the higher the audit fee charged.

The above scholars attempted to study determinants of audit pricing but none of them created a study in Nigeria using non-financial firms sector. However, none of these studies considered all the determinants factors affecting audit fees/pricing such as firm operating risk, firm complexity, board independence and ownership structure of non-financial sector in Nigeria and extended the study for a long period of time (10years) spanning from 2015 to 2024. This is the knowledge gap this study intends to address therefore contributing to the existing literature. Given the mixed results reported by the related literature reviewed on the association between audit fees and its determinant factors in various contexts and the study objectives, the study suggests the following hypothetical framework in Figure 1.



Source: Researchers' Theoretical Constructs (2025)

### 3 Methodology

In other to accomplish the aim of this paper, the study predominantly adopted ex-post facto research design and embraces the panel least regression so as to properly find out about the determinant factors of audit fees as well as audit pricing of 50 selected non-financial firms in Nigeria for the period of 10-years spanning from 2015 to 2024. The secondary data are obtained from the corporate annual report of the sampled companies on the Nigeria Exchange Limited for the period ending 2015 to 2024 financial year. The researcher utilizes only corporate annual reports because they are readily available and accessible. The sample of this study is basically made up of 50 companies from the non-financial sector of the economy. The proposed analytical framework in figure 1 above shows the schematic diagram of the causal relations with that of the dependent variable that is represented by audit fees and explanatory variables (determinants of audit fees) which consists of firm operating risk, firm complexity, board independence and ownership structure. We anchored this study on agency theory. Also, the schematic framework culminates into the required model specifications. The model adopted in this study assumed a linear relationship between determinants of audit fees and audit fees itself and panel least square was adopted for the purpose of hypothesis testing and was guided by the following linear model:

$$AUDFE_{it} = \beta_{0it} + \beta_1 FORSK_{it} + \beta_2 FCOMP_{it} + \beta_3 BIND_{it} + \beta_4 OWNST_{it} + \mu$$

Where:

AUDFE stands for Audit Fee used as the dependent variable, measured as the natural logarithm value of audit fees. FORSK connotes Firm Operating Risk computed as operating cost divided by total revenue. FCOMP represents Firm Complexity measured as the sum of account receivables and inventory divided by total assets. BIND means Board Independence measured in percentage as the ratio of non-executive director to total board size and finally OWNST which stands for Ownership Structure that is captured in percentage as the proportion of shares held by institutional investors to the total number of shares issued.

### 4. ESTIMATION RESULTS AND DISCUSSION OF FINDINGS

The study investigated the empirical effect that exists between determinants of audit pricing and audit fees of selected 50 non-financial firms for a period of 10 years spanning 2015 to 2024. The study carried out some preliminary data tests like descriptive statistics, correlations and variance inflation factor (VIF) analysis. The table below shows the descriptive statistics of the 50 selected non-financial firms that make up our sample.

#### Descriptive Statistics

The aim of the descriptive statistics was to describe the general distributional properties of the data, to identify any unusual observations or any unusual patterns of observations that may cause problems for later analyses to be carried out on the data.

**Table 1** Descriptive Statistics Analysis

	AUDFE	FORSK	FCOMP	BIND	OWNST
Mean	4.075681	0.543198	0.330194	69.58080	46.35471
Median	4.125000	0.258000	0.277000	70.00000	53.00000
Maximum	5.731000	38.36700	9.156000	100.0000	98.00000

Minimum	2.301000	0.011000	0.000000	25.00000	0.000000
Std. Dev.	0.607151	2.166655	0.449716	12.85218	25.75495
Skewness	-0.068534	13.63239	15.23628	-0.524642	-0.354812
Kurtosis	3.001852	212.8924	298.5945	3.235188	2.162991
Jarque-Bera	0.390702	931429.3	1836001.	24.04166	25.03627
Probability	0.822546	0.000000	0.000000	0.000006	0.000004
Sum	2033.765	271.0560	164.7670	34720.82	23131.00
Sum Sq. Dev.	183.5791	2337.809	100.7179	82258.91	330332.2
Observations	499	499	499	499	499

*Source: researchers' summary of descriptive result (2025)*

The descriptive statistics results in Table 1 above show the mean values for each variable, as well as their maximum and minimum values, standard deviation, and Jarque-Bera values, which indicate the data's normalcy and nature. The study analyzed data from 500 firm year observations of annual reports from the Nigeria Exchange Limited from 2015 to 2024. The study's findings provide some insight into the characteristics of the selected listed non-financial firms from Nigeria. The researcher intended to determine the central tendency and distribution of determinant factors and audit pricing among chosen Nigerian listed firms.

Generally, the Jarque Bera (JB) test which test for normality or existence of outliers among the variables shows that the all the determinant factors assessed in this paper are normally distributed at 1% level of significance except audit fee that is not normally distributed which indicates that the variables follow the Gaussian standard distribution. This means that there are no variables with outlier that are likely to distort the conclusion and therefore are reliable for drawing generalization.

### **Pearson Correlation Matrix**

Pearson's correlation matrix was applied to check the degree of association between audit pricing and its determinant factors of quoted non-financial firms in Nigeria so as to determine the nature or degree of association i.e. positive or negative correlation and the magnitude of the correlation between dependent variable (audit pricing) and independent variables with other explanatory variables.

**Table 2: Correlation Analysis Result**

	AUDFE	FORSK	FCOMP	BIND	OWNST
AUDFE	1.000000				
FORSK	-0.125133	1.000000			
FCOMP	-0.010675	-0.090475	1.000000		
BIND	0.009149	-0.117293	0.035782	1.000000	
OWNST	0.423205	-0.181300	-0.070017	0.221489	1.000000

*Source: Researchers' summary of correlation result (2025).*

The use of correlation matrix is to check for multi-collinearity and to explore the relationship between each explanatory variable and the dependent variable. Generally, the strength of the relationship between variables measured by the Pearson product-moment correlation showed that the association between the variables is relatively mild and average but was below the threshold of 0.80, suggesting the absence of the problem of multi-collinearity in the predictor variables. In this section we present and discuss the Pairwise correlations among the variables of audit pricing and its determinant factors. The result of the correlation coefficient above showed mixed correlation. This association identified buttresses the point that our variables have a linear relationship with varying degrees of direction. The findings from the correlation matrix table, shows that there exist a very weak but positive association between audit fee and board independence (AUDFE and BIND = 0.009) while a positive but strong correlation was documented for audit fee and ownership structure (AUDFE and OWNST = 0.423). There exist a very weak and negative correlation between audit fee and firm complexity (AUDFE and FCOMP = 0.010) while another negative but mild association was recorded for audit fee and firm operating risk (AUDFE and FORSK = 0.125). Similarly, a mild and negative correlation was documented between firm operating risk and other explanatory variables.

#### Variance Inflation Factor (VIF)

To further check for multi-collinearity problem or to know whether the independent variables used are perfectly correlated, we conducted Variance Inflation Factor (VIF) to check for the multi-collinearity problem. The result of the Variance Inflation Factor (VIF) is provided in table 3 below.

**Table 3: Variance Inflation Factor Result**

Variance Inflation Factors

Date: 08/12/25 Time: 07:35

Sample: 2015 2024

Included observations: 499

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.012031	2.327091	NA
FORSK	3.85E-05	1.007609	1.005407
FCOMP	0.000849	1.023335	1.005472
BIND	1.18E-06	2.115922	1.013042
OWNST	7.94E-07	1.347214	1.018461

*Source: Researchers' summary of VIF result (2025)*

As can be observed from the result of VIF in table 3 above, the mean value of the independent variables coefficient is less than 10. The variance inflation factor (VIF) values of all variables are less than 10; therefore, the effect of multi-collinearity is negligible. This implies that there was no multicollinearity problem with the variables thus all the variables were maintained in the regression model. Therefore, it can be concluded that there is no problem of

multicollinearity. It can also be seen from the table that all the variables had a variance inflation factor (VIF) of less than 10: firm operating risk (1.005), firm complexity (1.005), board independence (1.013) and finally ownership structure (1.0185) approximately. This means that there are no variables with outlier, and none of the variables are highly correlated thus all the variables were maintained in the regression model. Our finding also justifies the use of panel least square estimation techniques. Hence, any recommendations made to a very large extent would represent the characteristics of the true population of study and thus can be used to draw conclusion.

### Regression Results and Discussion of findings

In order to examine the relationship between the dependent variable (AUDFE) and the independent variables (FORSK, FCOMP, BIND and OWNST) and to test the formulated hypotheses, we employed panel least regression analysis since the data had both time series (2015-2024) and cross-sectional properties (50 selected non-financial firms). However, the study takes into cognizance the non-homogeneity nature of the non-financial firms, hence the need for testing its effect on the data. This necessitates the use of hausman effect test to ascertain which effect to explain. That is whether fixed effect or random effect is to be used in interpreting the regression result. Below is the summary of the Hausman test result:

**Table 4. Hausman Effect Tests**

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.862587	4	0.3017

**Source: Researchers' summary of Hausman effect tests result (2025)**

In view of the nature of the data, both fixed effect and random effect models were tested. Hausman specification test was then used to decide between the two results. The result from the Hausman test above revealed a Chi2 value of 4.8625 with p-value of 0.3017 which is greater than 0.000 that is statistically insignificant at 5%. This implies that the test considered the random effect as the most appropriate estimator and its result is presented in table 5 below:

**Table 5: Random Effect Regression Result**

Cross-section random effects test equation:

Dependent Variable: AUDFE

Method: Panel Least Squares

Date: 08/12/25 Time: 07:32

Sample: 2015 2024

Periods included: 10

Cross-sections included: 50

Total panel (unbalanced) observations: 499

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.958618	0.084998	46.57323	0.0000
FORSK	-0.003202	0.006235	-0.513556	0.6078
FCOMP	0.000721	0.029272	0.024644	0.9804
BIND	-0.001884	0.001092	-1.724268	0.0854
OWNST	0.005385	0.000927	5.808995	0.0000

## Effects Specification

Cross-section fixed (dummy variables)

Root MSE	0.235538	R-squared	0.849201
Mean dependent var	4.075681	Adjusted R-squared	0.831241
S.D. dependent var	0.607151	S.E. of regression	0.249420
Akaike info criterion	0.162541	Sum squared resid	27.68351
Schwarz criterion	0.618414	Log likelihood	13.44610
Hannan-Quinn criter.	0.341440	F-statistic	47.28210
Durbin-Watson stat	1.805692	Prob(F-statistic)	0.000000

**Source: Researchers' Random Regression result (2025)**

The table 5 above shows the panel regression analysis of 50 quoted non-financial firms in Nigeria. From the result above, the study observed that the R. squared value was 0.849(85%) approximately which implies that 85% of the systematic variations in individual dependent variables were explained in the model while about 15% were unexplained thereby captured by the stochastic error term. This confirms the appropriateness of our model used for the analysis. From the table above, the F-statistics value of 47.282 and their P-value of 0.0000 showed that the analysis of our variables in the regression model was generally significant at 1% level of significance and it shows that the model was well specified in explaining the magnitude of audit fees paid by firms. The Durbin Watson statistics value of 1.805 showed that the model is well spread since the value is approximately 2 and that there have not been self or auto correlation problem and that error are independent of each other.

The regression result above revealed that firm operating risk has negative and non-significant effect on audit pricing of quoted non-financial firms in Nigeria. By implication, this means that a reduction in the firm operating risk result to a non-significant increase in audit pricing. This result suggests that a unit increase in firm operating risk does not yield a statistically significant impact on audit fees during the study period. Conversely, firm complexity was shown to have a positive but non-significant effect on audit pricing. This implies that a unit increase in firm complexity will yield a positive increase in on audit pricing. Similarly, ownership structure was

shown to have a positive and significant effect on audit pricing with a positive coefficient value of 0.005% and t-statistics value of 5.808 and a probability value of 0.000 which is statistically significant at 1% level of significance. This indicates that, holding other factors constant, a unit increase in institutional ownership used to capture ownership structure will yield a statistically significant increase in the audit fees paid by firms. Conversely, board independence has negative and significant effect on audit pricing of selected non-financial firms in Nigeria which was statistically significant at 10% level of significance.

## 5 Conclusion and Recommendation

Audit pricing plays a crucial role in shaping the quality of audits, influencing auditor independence, and mitigating audit failures. These determinants ensure that audit pricing is tailored to the specific needs and risks of the auditee, balancing the necessity for comprehensive audits with the pressures of cost management. Emanating from prior studies reviewed, we found that firm operating risks and board independence have negative but non-significant effect in determining magnitude of audit fees paid while firm complexity and ownership structure were found to have positive effect on audit pricing.

Based on our findings, we therefore recommend that institutional ownership should be encouraged to assist in regulating audit pricing while operating risks should be cushioned to improve audit fees of non-financial firms in Nigeria. Finally, regulatory agencies should consider mandating more frequent audits or disclosures for highly complex firms to ensure that stakeholders are fully informed about the financial health of these entities. In conclusion, this study demonstrates that audit pricing is not influenced by the firm's operating risk and complexity but by the broader governance and ownership in which firms operate, contributing to a deeper understanding of how audit fees are determined in practice.

## References

- Abubakar, U.M. (2016). Determinants of audit fees of listed food and beverages companies in Nigeria. A Dissertation Submitted to the School of Postgraduate Studies, Ahmadu Bello University, Zaria in Partial Fulfillment for the Award of Master of Science (M.Sc.) Degree in Accounting and Finance. Department of Accounting, Faculty of Administration, Ahmadu Bello University, Zaria.
- Akrawah, O.D., & Akhor, O.S. (2016). Corporate governance and audit fee in Nigeria: Evidence from Quoted Companies. *Quarterly Journal of Contemporary Research (A Publication of the Federal University Otuoke)*, 4 (1), 8-19.
- Alajo, F.K., & Nzewi, U.C. (2020). Effect of external audit fees determinants on audit fees in deposit money banks in Nigeria (2009-2018). *International Journal of Advanced Academic Research (Social and Management Sciences)*, 6(10), 269-286.
- Al-Harshani, M.O. (2008). The pricing of audit services: Evidence from Kuwait. *Managerial Auditing Journal*, 23(7), 685-696.
- Apadore, K., & Letchumanan, T.R. (2016). Determinants of audit fees among public listed companies in Malaysia. A theoretical model. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 6(2), 169-174.

- Apadore, K., & Letchumanan, T.R. (2016). Determinants of audit fees among public listed companies in Malaysia. A theoretical model. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 6(2), 169-174.
- Ashibogwu, N.K., & Ogbolu, L.M. (2020). Audit Risk and financial statements quality of manufacturing companies in Nigeria. *International Journal of Innovative Finance and Economics Research* 8(1), 125-137.
- Bedard, J.C., Johnstone, K.M. (2010). Audit partner tenure and audit planning and pricing. *Auditing: A Journal of Theory and Practice*, 29(2), 45-70.
- Bell, T. B., Landsman, W. R., & Shackelford, D. A. (2001). Auditors' perceived business risk and audit fees: Analysis and evidence. *Journal of Accounting research*, 39(1), 35-43.
- Bendickson, J., Muldoon, J., Liguori, E., & Davis, P. E. (2016). Agency theory: the times, they are a-changin'. *Management decision*, 54(1), 174-193.
- Chersan, I. C. (2019). Audit quality and several of its determinants. *Audit financiar*, 1(153), 93-105.
- Egiyi, M.A. (2022). Audit quality and audit fees: The case of listed companies in the Nigerian financial services sector. *Contemporary Journal of Management*, 4(2), 14-24.
- Eilifsen, A., Messier Jr, W.F., & Glover, S.M., & Prawitt, D.F. (2014). *Auditing and assurance services*. London: McGraw-Hill Higher Education.
- Emeka-Nwokeji N.A, Nangih, E., Chiedu, C.O, Chendo, N.A. & Eboatu, I. (2001): Monitoring mechanism and social sustainability disclosure practices among firms in nigeria: cross sectional analysis of 2018 corporate governance reform, *European Journal of Business, Economics and Accountancy*, 9(2). 68-101
- Eke, G.O. (2018). Internal control and financial performance of hospitality organisations in Rivers State. *European Journal of Accounting, Auditing and Finance Research*, 6(3), 32 – 52.
- Hay, D. C., Knechel, W. R., & Wong, N. (2006). Audit fees: A meta-analysis of the effect of supply and demand attributes. *Contemporary Accounting Research*, 23(1), 141-191.
- Hossain, M. N., & Sobhan, R. (2019). Determinants of audit fees: Evidence from pharmaceutical and chemical industry of Bangladesh. *International Journal of Trend in Scientific Research and Development*, 4(1), 814-821
- Ibrahim, M., & Ali, I. (2018). Impact of audit fees on audit quality of conglomerates companies in Nigeria. *International Journal of Service Science, Management and Engineering*, 5(1), 1-8.
- Ilaboya, O.J, Izevbekhai, M., & Ohiokha, G., (2017). Determinants of abnormal audit fees in Nigerian quoted companies. *Ekon. Misao I Praksa Dbk. God*, 26(1), 65-83.
- Ileagu, E. C. & Orjinta, H. I. (2025). Audit committee attributes and financial reporting quality of quoted non-financial firms in Nigeria. *Journal of Accounting, Business and Social Sciences*, 9(1), March 2025; ISSN 2672-4235
- Ilechukwu, F. U. (2017). Effect of audit fee on audit quality of listed firms in Nigeria. *International Journal of Trend in Research and Development*, 4 (5): 319, 326.

- Indriasih, D., Susetyo, B., Muttaqin, S.I., & Ulummudin, N.I. (2023). Audit risk and company risk on audit fee (Empirical study on companies of trading, service and investment listed on the Indonesia Stock Exchange 2017–2021). *AEBMR*, 230, 198–205.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Kajola, S.O., Olabisi, J., Tonade, A.A., & Agbatogun, T.O. (2022). Determinants of audit Fees in Nigerian Banks. *Accounting and Taxation Review*, 6(1), 29-45.
- Kimeli, E.K. (2016). Determinants of audit fees pricing: Evidence from Nairobi Securities Exchange (NSE). *International journal of research in business studies and management*, 3(11), 23-35.
- Lai, T.T.T., Tran, M.D., Hoang, V.T., & Ngu-yen, T.H.L. (2020). Determinants influencing audit delay: The case of Vietnam. *Accounting*, 6, 851–858.
- Larbi, S. B., Mandzila, E. E. W., Meniaoui, J., & Moor, E. T. (2024). The influence of auditor and auditee on mandatory audit fees in France. *GECONTEC: Revista Internacional de Gestión del Conocimiento y la Tecnología*, 12(1), 77-102.
- Lauck, J. R., Rakestraw, J. R., & Stein, S. E. (2020). Do audit fees reflect unique characteristics of individual executives? *Accounting Horizons*, 34(4), 105-124.
- Lawal, S., & Ibrahim, M. (2022). Determinants of audit fees of listed insurance companies in Nigeria. *Gusau Journal of Accounting and Finance*, 3(1), 1-13.
- Lee, N. L., Khalaf, M. S., Farag, M., & Gomaa, M. (2024). The impact of critical audit matters on audit report lag and audit fees: Evidence from the United States. *Journal of Financial Reporting and Accounting*.
- Lin, Z. J., & Liu, M. (2009). The determinants of audit fees: Evidence from China. *China Journal of Accounting Research*, 2(1), 18-31.
- Musah, A., Okyere, B., & Boakye, E. A. (2021). The effect of ownership structures on audit fees of listed firms in Ghana. *Journal of Accounting and Investment*, 22(2), 392-409.
- Nelson, S. P., & Mohamed-Rusdi, N. F. (2015). Ownership structures influence on audit fee. *Journal of Accounting in Emerging Economies*, 5(4), 457-478.
- Ohidoa, T., & Okun, O.O. (2018). Firms' attributes and audit fees in Nigeria Quoted firms. *International Journal of Academic Research in Business and Social Sciences*, 8 (3), 685–699.
- Okoli, E.C. (2021). Corporate governance and audit pricing in Nigeria. *FIT Journal of Social and Management Science Research*, 1(1), 325-333.
- Olusola, O. S. (2024). Institutional ownership structure and characteristic influence on audit quality of Nigerian quoted manufacturing companies. *Accounting and Management Review*, 4(2), 72-84.
- Olutokunbo, O. T., Yisa, A., & Abdullahi, J. S. (2020). Corporate characteristics, audit fees and the Nigerian corporate environment: A panel data approach. *European Journal of Accounting, Auditing and Finance Research*, 8(9), 78-97.
- Onaolapo, A. A., Ajulo, O. B. & Onifade, H. O. (2017). Effect of audit fees on audit quality: Evidence from cement manufacturing companies in Nigeria. *European Journal of Accounting, Auditing and Finance Research*, 5(1), 6-17.

- Onyeogubalu, O. N., Orjinta, H. I. & Ofor, N. T. (2022). Audit quality and value of selected manufacturing firms: Nigerian experience. *Asian journal of advances in research*, 15(3), 22-35
- Orjinta, H. I., & Akwuobi, B. U. (2023). Auditors' independence and audit quality of health-care firms in Nigeria. *Journal of Accounting and Financial Management*, 62-80.
- Orjinta, H. I., & Anichebe, A. S. (2016). Pricing of audit services among quoted financial firms in Nigeria. *Palgo journal of business management*, 3(3), 82-89.
- Orjinta, H. I., & Emeka-Nwokeji (2016). Effect of audit fee on earnings management of pharmaceutical firms in Nigeria. *Journal of emerging trends in management sciences and entrepreneurship*, 2(2), 1-16
- Osevwe-Okoroyibo, E. E., Ofor, N. T., & Orjinta, H. I. (2021). Audit report quality and value of consumer goods firms: Evidence from Nigeria. *Journal of Emerging Trends in Management Sciences and Entrepreneurship*, 3(1), 1-13.
- Pronobis, P., & Schaeuble, J. (2022). Foreign ownership and audit fees in European listed firms. *European Accounting Review*, 31(3), 575-602.
- Ruan, L., & Zhang, H. (2021). Do auditors consider alleged bribery when accepting clients? Evidence from Chinese non-state-owned enterprises. *Accounting and Business Research Special Issue: Auditing in China*.
- Temitope, A. O., Anichebe, A. S., & Orjinta, H. I. (2023). Effects of audit tenure and fee on audit quality of selected food production companies in Nigeria. *Trinitarian: International Journal of Arts and Humanities*, 1(2).
- Xiong, X., Zheng, R., Liu, Y., & Huang, X. (2024). International accounting network memberships and audit fees: Evidence from China. *PLoS ONE*, 19(1), 1-25.
- Xue, B., & O'Sullivan, N. (2023). The determinants of audit fees in the alternative investment market (Aim) in the UK: Evidence on the impact of risk, corporate governance and auditor size. *Journal of International Accounting, Auditing and Taxation*, 50, 100523.
- Yeboah, E.N., Addai, B., & Appiah, K.O. (2023). Audit pricing puzzle: Do audit firm industry specialization and audit report lag matter? *Cogent Business & Management*, 10 (1), 1-29.