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Original Research Article

## **Audit Features in Auditor's Independence in the Deposit Money Banks in Nigeria**

Ernest Oshodin<sup>1</sup> & Sadiq Oshoke Akhor<sup>2</sup>

Nuraddeen Shehu Aliyu, Mu'azu Saidu Badara, & Sanni Olawale Nurudeen

<sup>1</sup> *Department of Accounting, Faculty of Management Sciences, University of Benin, Benin City*

<sup>2</sup> *Department of Accounting, Faculty of Arts, Management and Social Sciences, Edo State University, Uzairue*

For correspondence, email: [ernest.oshodin@uniben.edu](mailto:ernest.oshodin@uniben.edu)

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### **Abstract**

*The aim of this paper is to examine the impact of audit features such as audit firm size, audit firm rotation, audit tenure, and audit market competition on the auditor's independence of the Deposit Money Bank (DMB) listed in the Nigeria Exchange Group. The data on the auditor's independence, the likelihood of engaging big4 audit firm, the likelihood of audit firm rotation, audit tenure, and audit market competition were derived from the annual reports of the 13 Deposit Money Banks in Nigeria for 7 years. The panel data regression was the method of data analysis. The results of the data analyses revealed a positive and significant relationship between auditor's independence and each of the following: the likelihood of rotating audit firms, audit tenure, and audit market competition. Conversely, this study found a non-significant relationship between auditor's independence and the likelihood of engaging big4 audit firms. Therefore, the study recommends that the regulators of the firms in the banking sectors should encourage audit firm rotations coupled with fixed but long audit tenure, and discourage the current practices of concentrating audit engagement in the sector to the big4 audit firms.*

**Keywords:** Auditor Independence; Audit Market Competition; Audit Firm Rotation; Audit Market Concentration; Audit Firm Size

**JEL Classification Code:** M41, M42

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## 1. INTRODUCTION

Audit independence is the foundation upon which accounting transparency is erected. An audit service is expected to be conducted without any undue interference from the management of a firm as the value of an audit engagement is based on an assumption that an auditor is independent of its client. However, the economic bond that sometimes exists between an auditor and the client gives little to be cherished about audit processes by investors. The issues about auditor independence had coalesce into hot debates that have attracted commentaries from academics, practitioners, and regulators (Herath & Pradier, 2018). These ongoing debates became intense after the recent series of accounting scandals in which auditors were implicated in colluding with the management of the involved companies (Akpom & Dimkpah, 2013; Dabor & Dabor, 2015; Salaudeen, Ibikunle, & Chima, 2015), and thereby brought the gatekeeping role of auditors to disrepute. Consequent to this, the trust of investors in the financial reporting process in firms was brought to a very low ebb (Adeyemi & Fagbemi, 2011; Joseph, Nyor, & Ormin, 2021; Olagunju, 2011; Otusanya & Lauwo, 2010).

To improve auditor independence and therefore to boost the confidence repose in audit services rendered by auditors, several proposals have been made to enhance

auditor independence. These proposals were made to refrain an auditor to carry out audit jobs in companies where they have a financial interest, to encourage audit rotation and peer review, and finally to remove the power to appoint and negotiate audit fees from the client's management (Moizier, 1991). These heralded various audit independence regulations in different countries around the world. For instance, one of the prominent regulations of the Security and Exchange Commission is that traded companies must disclose audit fees in their annual reports. The Sarbanes-Oxley Act of 2002, which has given more life to auditor independence regulations (Baker, 2015), restricted the non-audit services that are permitted to be undertaken by an auditor to taxation services which must be preapproved by the audit committee of a company (Burke & Lee, 2015). Despite these regulations to ensure auditor independence, auditors are still found to occupy compromising positions due to the economic incentives to always earn fees from their clients. To ensure a continuing stream of income from a client, an auditor may feign to be independent of the client, when in actuality he maintaining a compromising position with the client. This can metamorphose into a situation where an auditor is perceived to be independent whereas, he or she is not independent in fact. Consequently, upon this, the question as to whether an auditor can indeed be

independent both in fact and appearance has remained unsettled in literature (Burke & Lee, 2015). This has also brought to bear the question of whether auditors can indeed be independent given the series of accounting scandals after the passage of many corporate governance rules in Nigeria. (Otusanya & Lauwo, 2010). However, the moral development and the religiosity of an auditor may be indispensable for an auditor to be independent both in appearance and in fact (Mostafa, Hussain, & Mohamed, 2020).

Many studies have been conducted to investigate the factors that influence auditor independence. Most of which have investigated the effect of audit firm size, audit fees, audit tenure, audit rotation, and audit market competition on auditor independence (Akpom & Dimkpah, 2013; Joseph, et al., 2021; Herath & Pradier, 2018; Lokman & Bakri, 2020; Salawu, 2017; Amake & Okafor, 2012). Only a handful of these studies, many of which are at a theoretical level, have picked interest in investigating the effect of audit market competition on auditor independence. These studies have revealed that audit market competition can indeed be an influential factor in auditor independence studies. This has provoked this study. To the best of the researchers' knowledge, studies that have considered audit market competition in auditor independence in Nigeria are often based on perceptions, the outcome of which depends on the thinking of individuals. It is against this background this study is carried out to expand the frontier of knowledge in this area of study in Nigeria.

The remaining part of this paper is structured as follows: section 2 reviews related literature on the relevant variables in the study; section 3 highlights the methodology used in the study; section 4

presents the result and discussions the analyses conducted in the study analysis; section 5 concludes the paper.

## **2. Literature Review**

In this section, literature is reviewed on auditor's independence, audit firm size, audit rotation, audit tenure, and audit market competition. The theoretical underpinning of this study is also discussed in this section.

### **2.1 Auditor's Independence**

Auditor's independence is a feature in the accounting profession that inspires confidence and trust in the roles carried out by accountants. Auditor's independence is described as the unbiased mental attitude maintained by an auditor during an audit engagement (Bartlett, 1993). It is the state of mind of an accountant that drives honesty in his or her report. Independence enables an accountant to perform his or her duties with integrity and impartiality (Akpom & Dimkpah, 2013). It is the ability of an auditor, to be honest in reporting any material misstatement found financial statement (Austin & Herath, 2014). This ability to honestly report any material misstatement discovered in financial statements increases when an auditor is both independent in mind and appearance. The independence of mind which is also known as real or practitioner independence is the state of mind maintained by an auditor which enables him or her to deal with a specific situation. Other than acting independently, the prevailing circumstance around an auditor should also portray him or her as an independent individual (Mauz & Sharaf, 1961). This is independence in appearance or profession without which the actual act of independence cannot be imagined in an auditor.

Whether or not an auditor is independent can be seemed through his or her audit programming, investigative style, and audit report. Programming independence entails that an auditor can determine the most suitable strategies to conduct the audit assignment without the client's interference. The freedom on the part of an auditor to implement these strategies entails the investigative independence of the part of an auditor. Reporting independence is ensured when an auditor is allowed to communicate all necessary information to the shareholders of a firm without any hindrance from the management of the firm (Olagunju, 2011).

Existing studies have shown that auditor independence in a firm can be explained by audit fee, audit tenure, audit firm size, non-audit service, and audit rotation (Breattie, Brandt, & Fearney, 1999; Herath & Pradier, 2018; Lokman & Bakri, 2020; Joseph, et al., 2021). Also, audit market competition is recently being canvassed as a factor that can influence auditor independence (Akpom & Dimkpah, 2013; Herath & Pradier, 2018; Lokman & Bakri, 2020). The audit fee which is the remuneration for audit services is closely related to conflict of interest (Lokman & Bakri, 2020). Economic incentives whether by audit fees or fees from non-audit services can induce conflict of interest in a firm. An auditor may likely do all it takes to retain a high-paying client. Also, auditor independence can be compromised when non-audit services are carried out for a client regardless of whether or not a low audit fee is received from a such client (Hillison & Kennelley, 1988). Thus, audit fee is usually adopted as a proxy for audit independence in most studies in this area of research (Amake & Okafor, 2012; Craswell, Stokes, & Laughton, 2002;

Firth, 1997; Okolie, 2014; Salawu, 2017; Wooten, 2003).

## **2.2 Audit Firm Size and Auditor's Independence**

Audit firm size speaks volumes about the caliber of the audit firm in terms of size, international affiliations, reputation, specialty, staff strength, and competence. The size of an audit firm is usually categorised into the big four and non-big four audit firms. The big four audit firm comprises Deloitte Touche Tohmatsu, Ernst & Young, PriceWaterhouseCoopers, and Klyneld Peat Marwick Geordeler. Conversely, audit firms other than Deloitte Touche Tohmatsu, Ernst & Young, PriceWaterhouseCoopers, and Klyneld Peat Marwick Geordeler are classified as non-big four firms. The big four firms are argued to provide high-quality audit services compared to the non-big four firms (Ilaboya & Ohiokha, 2014) because of the competence of the staffers in these firms and the ability to provide specialised services which are as a result of the available financial resource towards staff improvement (Francis, 2004; Sawan & Alsaqqa, 2013). Unlike the non-big-four audit firms, the big four firms are also argued to be more independent since they do not depend on any client for their revenue. This can be explained by the fact that the big four audit firm are usually easily noticeable to shareholders due to their publicity. Consequent to this, big four audit firms are exposed to little or no pressure from the management of their client compared to non-big four audit firms. It is against this backdrop, that audit firm size is argued as a factor that can positively influence auditor independence (Joseph et al., 2021; Kammenga, 2016; Salawu, 2017; Abubakar, Rahman, & Rashid, 2005). However, the anecdote on accounting

scandals has shown that the big-time accounting firms are the most involved in the high profile accounting scandals (Baker, 2015; Lokman & Bakri, 2020; Olatunde & Lauwo, 2010; Sauludeen, Ibikunle, & Chima, 2015). This may be because of the publicity of these big audit firms. Nevertheless, this anecdote has gone to show that large audit firms may not sometimes be immune to pressures from management (Kammenga, 2016). In line with this, Saat et al. (2013) found that audit firm size can moderate the relationship between moral development and independence.

### **2.3 Audit Rotation and Auditor's Independence**

Audit rotation connotes the period changing of external auditors in a firm. In the United State of America, the Sarbanes-Oxley act requires that the auditor of a company should every changed 5 years. This is also the position in some European Countries such as Italy and others (Baker, 2015). In Nigeria, external auditors are expected to be rotated after 10 years while an engagement partner is expected to be changed after 5 years with a cool-of period of 3 years (Nigerian Code of Corporate Governance, 2018).

Extant literature has shown that after staying too long in a company, the interdependence of an author would usually whittle down due to familiarity. It is against this backdrop that studies have argued that there is a positive relationship between audit rotation and auditor independence (Herath & Pradies, 2018; Otuya, 2019; Okaro & Okafor, 2013). Conversely, there is another strand of literature that has advocated against auditor independence on the ground that an auditor is supposed to remain with a client to gain a good understanding of the

working terrain of such a client. Thus audit rotation may not afford a particular auditor to fully comprehend his or her client for an effective audit (DeFond & Zhang, 2014).

### **2.4 Audit Tenure and Auditor's Independence**

Audit assignment to an auditor usually is not for eternity, it has a time frame during which an appointed auditor can remain as an external auditor. The period within which an auditor serves as an external auditor for a firm is known as audit tenure. It is the length of time with which an audit service is rendered by an external auditor to a client (Herath & Pradier, 2018). The SOX Act pegs 5 years as the maximum tenure an external audit can act for a client. However, the ceiling on audit tenure is not the same across the countries around the globe. In Nigeria, the CBN act of 2005 pegged the ceiling of audit tenure on 10 years for the company in the bank sector (Joseph, et al., 2021). The latest Nigerian Code of Corporate Governance (2018) provided that an external auditor is not allowed to stay with a particular company for more than 10 years after which the auditor would not be engaged 7 years after disengagement. However, the engagement partner must be changed every 5 years to preserve audit independence.

Previous studies have shown that a long audit tenure can lead to a cordial audit-client relationship that can fetter the independence of an auditor and thereby making the auditor a stooge willing to do anything to retain the accounting-related jobs of a client especially if the client is a big time paying firm (Lokman & Bakri, 2020; Ling et al., 2016; Shockley, 1991). However, a long-term audit tenure can provide an opportunity for an auditor to understand the operating activities of his clients and therefore

enhance the quality of the audit job provided by the auditor. A high-quality audit supposedly implies the existence of an auditor's independence (Lindberg & Beck, 2004). An auditor may gain more confidence and become more independent with time (Tepalagul & Lin, 2005), and after then an auditor may be willing to disclose any financial irregularities discovered in the book of account of his client. However, Amake and Okafor (2012) could not establish a relationship between audit tenure and auditor independence.

### **2.5 Audit Market Competition and Auditor Independence**

The audit market is a concept that describes the market situation faced by audit firms in the audit market. The market is competitive when the market is made up of more audit firms and it is considered concentrated when the key player in the market is made up of a few firms. Audit market competition broadens the scope of audit firms available to a client audit need. Consequently, audit firms are expected to display competing prowess in competence and independence to attract clients (Houghton & Jubb, 2003). In line with the competition-monitoring hypothesis, when the audit market is competitive, auditors are motivated to maintain their reputation by differentiating their services from that of competitors and doing everything to please the shareholders of their clients. It is against this backdrop that audit market competition is argued to align the interest of an auditor and shareholders, and therefore encourage auditors to be independent to keep their reputational capital (Xie, 2016). This argument is corroborated by the studies of Bloom, Propper, Seiler, and Reenen (2015), Chhaochharia, Grinstein, Grullon, and Michaely (2016), and Simunic (1984) which reveal that audit market competition can

positively moderate the relationship between audit independence and audit quality.

Conversely, the competitive-impaired argument of audit market competition suggests that auditors can lose their independence in an attempt to gain more audit jobs in the audit competitive market ((Beams & Killough, 1970; Shockley, 1981). Also in line with this argument, the studies of Beattie, Brandt, and Fearnley (1999), MacLulich and Sucher (2005), and Law (2008) reveal that audit market competition can undermine auditor independence.

### **2.6 Theoretical Framework**

The study is anchored on the inspired confidence theory. The inspired confidence theory as propounded by Limperg (1932), explained the relationship between the functions of an accountant (confidential-agent) and societal needs. In the relationship, the confidential agent should conduct his or her functions in such a manner that the expectation of society is not betrayed. It is only when the trust reposed in the confidential agent is not betrayed that can confidence be inspired. Audit service rendered by an accountant is purportedly valuable by shareholders when the accountant efficiently renders the audit service, accomplished through a high level of competence and independence as expected by sensible members of the public. The confidence that an auditor is a high level of competence and independence is a condition of the existence of the services rendered by the auditor. If this confidence is betrayed, the assignment carried out by the auditor becomes useless.

The condition that an auditor is independent is one of the reasons why audit services

inspired confidence in using accounting information. If an auditor is not independent, the services rendered by such an auditor become useless. It is against this backdrop that audit firm size, audit rotation, audit tenure, and audit market competition can be argued to inspire confidence in the audit services rendered by an accountant.

**3. Methodology**

The data used in this study spanned 7 years. These data were sourced from annual reports of financial companies listed on the Nigeria Exchange Group from 2014 to 2021 for ease of data collection. Thus, the longitudinal research design is adopted in the study. The data on the dependent variable (auditor independence), independence variables (audit firm size, audit rotations, audit tenure, and audit market competition), and control variables (firm size and audit firm’s client importance) were derived from the annual reports for 7 years.

Auditor independence was measured by audit fees received in the periods of the various audit firms. Audit firm size and

audit rotations were measured as dichotomous variables. Audit firm size is taken as 1, if the audit services in the sampled firms are conducted by any of the big4, 0 otherwise. Audit rotation takes the value of 1 when audit firms engaged in banks are changed, otherwise, it is measured as 0. Data on the audit was measured by the number of years an audit firm is engaged by the banks investigated in this study. The audit market competition is estimated as the ratio of a firm’s market share in terms of audit fees to the market share of its competitors in the banking sector.

To investigate the influence of the explanatory variables on auditor’s independence, panel regression was used and the Hausman test was conducted to determine the more appropriate between the fixed effect and random effect regression models. Also, the Wald test was carried out to determine the more appropriate between pooled regression and the fixed effect model. The econometrics model used in the study of Lokman and Bakri (2020) was adapted in this study. The adapted model is as stated below:

$$AIND_{it} = \beta_0 + \beta_1 AFS_{it} + \beta_2 AR_{it} + \beta_3 ATEN_{it} + \beta_4 AMC_{it} + \beta_5 FS + \beta_6 ACIM + \epsilon_{it}$$

Where:

AIND = Audit independence

AFS = Audit firm size

AR = Audit rotation

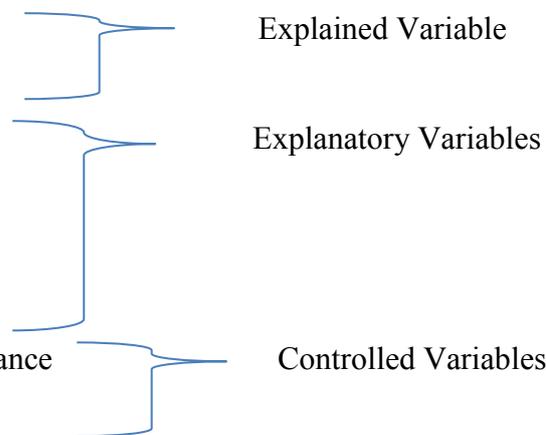
ATEN = Audit tenure

AMC = Audit Market competition

FS = Firm size

ACIM = Audit firm’s client importance

$\beta_0 - \beta_6$  = regression coefficients



Apriori  $\geq 0$

**4. Results and Discussions**

The outcomes of the descriptive statistics, correlation analysis, diagnostics tests, and regression analyses conducted and their discussions are presented in this section.

**Table 1: Descriptive Statistics**

	AIND	AFS	AROT	ATEN	AMC	FS	CLIM
Mean	361636.60	0.81	0.08	5.72	0.08	2720000000.00	0.38
Med	275030.50	1.00	0.00	6.00	0.07	1800000000.00	0.26
Max	1009000.00	1.00	1.00	14.00	0.19	8620000000.00	1.00
Min	75000.00	0.00	0.00	1.00	0.01	1570000000.00	0.03
Std. Dev.	252628.10	0.40	0.27	2.65	0.05	2180000000.00	0.29
J-Bera	9.68	32.32	343.44	0.33	7.23	9.40	11.63
Prob	0.01	0.00	0.00	0.85	0.03	0.01	0.00

**Source: researcher's Compilation**

Table 1 presents the summary statistics of the data collected for the purpose of this study. The mean value of AIND of 361636.60 is an indication that on the average the audit fees received by the audit firms engaged in the banking sector in the period of 2014 to 2020 is N361636.30. The maximum and minimum of which are 1009000 and 75000 respectively, suggesting that the highest and lowest audit fees collected by audit firms engaged the sampled banks in the periods under study are N1009000 and N75000. The standard deviation of 252628.10 of audit independence as proxy by audit fees is an indication that there is a wide dispersion between the average audit fees and audit fees collected by the individual audit firms engaged in the banking sector in the period the study. The probability value of 0.01 associated the Jarque-Bera statistics of 9.68 is an indication that data on audit independence as proxies by audit fees did follow normal distribution curve.

The mean value of 0.81 for AFS is an indication that on the average there were

81% chance that the selected banks in the period from 2014 to 2020 were audited by any of the big4 audit firms. The maximum and minimum values of 1 and 0 for AFS are indications audit firm size is proxy by dichotomous variables. The standard deviation value of 0.40 for AFS indicates that there is a huge gap between the average chanced of 81% and the likelihood to engage any audit firms, whether big4 or non-big4, in the banking sector in the period. The probability value of 0.00 associated with the Jarque-Bera statistics of 32.32 for AFS is an indication that data on audit firm size of this study did not meet the normal curve requirement.

The average value of 0.08 for AROT suggests that the likelihood that audit firms were rotated in the banking sector in the period spanning 2014 to 2020 was about 8%, while the likelihood that audit firms were rotated in the period was about 92%. The maximum and minimum values of 1 and 0 indicate that data on audit rotation is measured by dichotomous variables. The probability value of 0.00 associated with the

Jarque-Bera statistics of 343.44 for AROT is an indication that data on audit rotation in this study failed normality test.

The mean value of 5.72 for ATEN suggests that the average tenure for audit engagement in the banking sector in the period from 2014 to 2020 was about 5 years and 72 days. The maximum and minimum values of 14 and 1 for ATEN indicate that the maximum and minimum tenure of audit in the banking period in the period of this study are 14 years and 1 year respectively. The probability value of 0.85 associated with the Jarque-Bera statistics of 0.33 is an indication that the data on audit tenure in this study meet the normality requirement of ordinary least square analysis.

The mean value of 0.08 for AMC indicates that on the average, there was about 8% competition in the audit market of banking sector in the period covered in the study. The maximum and minimum values of 0.19 and 0.1 for AMC indicate the maximum and audit competition that exist the banking sector in the periods investigated in this study. The average size of the banks, as measured by total assets, considered in the study is N2720000000. While the maximum and minimum sizes are N8620000000 and 1570000000. The average of client importance, as measured by the ratio of revenue of a client and the total revenues of all the clients of an audit firm in a year, is 38%, and the maximum and minimum values of audit client importance in the period of study is 100% and 3% respectively.

**Table 2: Correlation Analysis**

	AIND	AFS	AROT	ATEN	AMC	FS	CLIM
<b>AIND</b>	1.00						
<b>AFS</b>	0.45***	1.00					
	0.00	-----					
<b>AROT</b>	-0.26**	-0.10	1.00				
	0.02	0.37	-----				
<b>ATEN</b>	0.25**	0.06	-0.50***	1.00			
	0.03	0.61	0.00	-----			
<b>AMC</b>	0.94***	0.47***	-0.29**	0.11	1.00		
	0.00	0.00	0.01	0.34	-----		
<b>FS</b>	0.58***	-0.12	-0.03	0.09	0.52***	1.00	
	0.00	0.30	0.80	0.41	0.00	-----	
<b>CLIM</b>	-0.21*	-0.74***	0.06	-0.10	-0.25**	0.25**	1.00
	0.06	0.00	0.60	0.37	0.03	0.03	-----

**Source: Researchers' Compilation**

**Note \*\*\* is significant at 1%, \*\* is significant at 5%, \* is significant at 10%**

Table 2 presents the correlation analysis of the data used in this study. The coefficients and P-values of the correlations between

AIND and AFS (0.45, 0.00), AIND and ATEN (0.25, 0.03), AIND and AMC (0.94, 0.000), and AIND and FS (0.58, 0.00) are

indications that there exist positive and significant relationship between auditor independence and each of the follows: likelihood of big4 audit firm, audit tenure, audit market competition, and firm size. While the coefficients and P-values in the relationship existing between AIND and AROT (-0.26, 0.02), and

AIND and CLIM (-0.21, 0.06) indicate that there exists a negative and significant relationship between auditor independence and the likelihood of audit rotation, and auditor independence and audit client importance.

The coefficients and P-values of the relationship between AFS and AROT (-0.10, 0.37), AFS and FS (-0.12, 0.30), and AFS and CLIM (-0.74, 0.00) are indications that there exists a negative and non-significant relationship between a likelihood of big4 audit firm and audit firm rotation, a likelihood of big4 audit firm and audit client importance, and a negative and significant relationship between a likelihood of big4 audit firm and audit client importance. The coefficient and P-values in the relationship

between AROT and ATEN (-0.50, 0.00), AROT and AMC (-0.29, 0.01), and AROT and FS (-0.03, 0.80) are indications that there exists a negative and significant relationship between the likelihood of audit rotation and audit tenure, a likelihood of audit rotation and audit market competition, and a negative and non-significant relationship exists between the likelihood of audit rotations and firm size. While the coefficient and P-value in the relationship between AROT and CLIM (0.06, 0.60) is an indication that a positive and a non-significant relationship exist between the likelihood of audit rotation and audit client importance in the banking sector during the period 2014 to 2020. The coefficients and their associated P-values in the relationship between ATEN and AMC (0.11, 0.34) and ATEN and FS (0.09, 0.41) are pointers that positive and non-significant relationships exist between audit tenure and audit market competition, and audit tenure and firm size. The negative coefficient and P-value in the relationship between ATEN and CLIM (-0.10, 0.37) is an indication that a negative relationship exists between audit tenure and audit client importance.

**Table 3: Diagnostic Tests**

**Correlated Random Effects - Hausman Test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	117.843	6	0

**Redundant Variables Test**

Specification: AIND C AFS AROT ATEN AMC FS CLIM

Redundant Variables: AFS AROT ATEN AMC

	Value	df	Probability
F-statistic	32.0292	(4, 59)	0
Likelihood ratio	90.0272	4	0

**Redundant Fixed Effects Tests**

Test cross-section and period fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.72603	(12,54)	0.0004
Cross-section Chi-square	47.0516	12	0
Period F	6.71015	(5,54)	0.0001
Period Chi-square	37.6923	5	0
Cross-Section/Period F	12.2804	(17,54)	0
Cross-Section/Period Chi-square	123.418	17	0

**Wald Test:**

Null Hypothesis: C(2)=C(3)=C(4)=C(5)

Test Statistic	Value	df	Probability
F-statistic	32.0782	(3, 59)	0
Chi-square	96.2346	3	0

**Wald Test:**

Null Hypothesis: C(8)=C(9)=C(10)=C(11)=C(12)=C(13)=  
C(14)=C(15)=C(16)=C(17)=C(18)=0

Test Statistic	Value	df	Probability
F-statistic	10.7075	(11, 60)	0
Chi-square	117.782	11	0

**Source: Researchers' Compilation**

Table 3 presents the summary of the outcome of the diagnostic regression test conducted in this study. The probability value of 0.00 associated with the Chi-Square value of 6 in the Hausman test is an indication that the null hypothesis of that random effect is rejected. The probability value 0.00 associated with the F-statistics value of 32.0292 in the redundant variable test is an indication that the null hypothesis explanatory variables are redundant in the econometric model is rejected. The significant values associated with the Cross Section Chi-square and Period Chi-square are indications that both the cross-section and period effects are both appropriate in the fixed effect regression model. Finally, the Wald tests are indications that there is no equality among the coefficients of the

explanatory variables, and that the fixed effect model is more appropriate than the pool regression.

The coefficient and P-value of 0.05 and 0.00 associated with the relationship between AMC and FS suggest a positive and significant relationship between audit market competition, while the negative (-0.23) and P-value (0.03) in the relationship between AMC and CLIM is a pointer that a negative and significant relationship exist between audit market competition and audit client importance. The coefficient (0.25) and P-value (0.03) in the relationship between FS and CLIM is a pointer that there exist and positive and significant relationship exist between firm size audit client importance.

**Table 4: regression Analyses**

	Pooled		Fixed Effect		Random Effect	
	Coeff.	P-Value	Coeff.	P-Value	Coeff.	P-Value
C	-423***	0.000	-227***	0.000	-198***	0.000
AFS	308	0.452	-107	0.775	717***	0.002
AROT	111***	0.000	648**	0.010	881***	0.001
ATEN	177***	0.000	106***	0.002	180***	0.000
AMC	469***	0.000	498***	0.000	434***	0.000
FS	7.50E-05***	0.000	5.18E-05***	0.000	1.39E-05***	0.000
CLIM	330	0.346	211	0.498	534	0.056
D-watson	1.622		1.35		1.37	
R-Squared	0.974		0.984		0.923	
F-Stat	134		147		143	
Prob(F-Stat)	0.000		0.000		0.000	
Hausman					0.000	
Wald	0.000					

**Source: Researchers' Compilation**

**Note \*\*\* is significant at 1%, \*\* is significant at 5%, \* is significant at 10%**

Table 4 presents the regression outputs of the data collected for this study. The probability values associated with F-statistics is an indication that the joint effect of the explanatory variables can significantly influence auditor's independence in the banking sector of Nigeria's economy.

The probability value 0.00 associated with the Chi-square value of the Hausman test is an indication that null hypothesis that the random effect is appropriated is rejected and the alternative hypothesis is accepted. Also, this is corroborated by the probability value of 0.000 of the Wald which rejected the null hypothesis of that pooled regression model, but accepted the alternative hypothesis that the fixed effect model is appropriate. The R-squared value of 0.98 is an indication that

the explanatory variables in the study explained about 98% of the auditor's independence and about 2% of the dependent variable is explained by the error term in the econometric model adopted in the study. The coefficients and the associated P-values on the relationship between auditor's independence and each of the follows: the likelihood of audit firm rotation {648, 0.01}, audit tenure {106, 0.002}, audit market competition {498, 0.000}, and firm size {0.00005, 0.000}. These are indications that there exists a positive and significant relationship between an auditor's independence and each of the following: audit firm rotations, audit tenure, audit market competitions, and firm size respectively. While the coefficient and p-value of the relationship between auditor's independence and audit client importance

{211, 0.498} suggest that a positive and non-significant relationship exists between auditor independence and audit client importance. These are pointers that a change in the likelihood of rotating audit service, audit tenure, audit market competitions, firm size, and audit client importance respectively can lead 648%, 106%, 498%, 0.005%, and 211% increase in auditor independence in banks in Nigeria.

This corroborates the studies of Herath and Pradies (2018), Otuya and Otuya (2019), and Okaro and Okafor (2013) that find a positive relationship between audit firm rotations and auditor's independence. The findings on the relationship between auditor's independence and audit firm tenure in this research could not corroborate the studies of Lokman and Bakri (2020), Ling et al. (2016), and Shockley (1991) which find that a longer audit-client relationship can fetter auditor's independence. Also, the outcome of this study on the relationship between audit market competition and auditor's independence is corroborated by Bloom, Propper, Seiler, and Reenen (2015), Chhaochharia, Grinstein, Grullon and Michaely (2016), and Simunic (1984) who argue that audit market competition can positively moderate the relationship between audit independence and audit quality; But could not confirm the studies of Beattie, Brandt, and Fearnley (1999), MacLulich and Sucher (2005), and Law (2008) which reveal that audit market competition can undermine auditor independence.

Conversely, the coefficient {-107} and P-value {0.775} of the relationship between the likelihood of engaging big4 audit firms and auditor's independence is a pointer that the likelihood of engaging big4 audit firms

does not significantly influence auditor's independence in the banking sector of Nigeria economy, even though this relationship is negative. This is a pointer that any change in the likelihood of engaging a big4 audit firm may lead to about 107% decrease in auditor's independence in the banking sector of Nigeria's economy. This is confirmed by the arguments of Baker (2015), Lokman and Bakri (2020), Olatunde and Lauwo (2010) Sauludeen, Ibikunle, and Chima (2015) that the big4 audit firms are the most involved in accounting scandals

As an implication of the findings, audit firm rotation coupled with a longer but fixed audit tenure can be emphasised by regulators in the banking industry in Nigeria if auditor independence is cherished in the industry. A situation where an audit firm can be replaced at any time can be countered productive to audit independence. This is because an audit firm that is weary of being sacked must maintain a healthy relationship with its client management and this can leave independence as a virtue at the mercy of the management of banks.

Also, healthy audit competition encourages auditors to be independent of their clients. A situation where the audit market in the banking sector is concentrated on just the big4 audit firms has left a little to be cherished about auditor independence in the banking sector. The implication of this is that all non-audit services are performed by the big4 audit firms. Even though this may not be performed concurrently with audit services these non-audit services are always carried out by the big4 audit firms and are enough to fetter their independence from this audit firm.

## 5. Conclusion

Investigations on factors that compromised Auditor's independence in firms have remained a fertile area of research in accounting due to the almost perennial involvement of accountants in accounting scandals. In the earlier years of the current century, the accounting/financial world was almost brought to a standstill due to large-scale accounting scandals. The aftermath of these accounting scandals birthed many corporate governance principles aimed to improve the independence of an auditor. Despite this, cases questioning auditors' independence have remained in the financial world. Against this backdrop, there has been an influx of research investigating the factors that influence auditor's independence in the banking sector in Nigeria, and audit market competition has been given very little attention in this regard.

To expand the frontier of the existing literature in this area, data were collected on auditor's independence, the likelihood of engaging big 4 audit firms, the likelihood of audit firm rotation, audit tenure, and audit market competition in the 13 deposit money banks for 7 years. The result of the analyses revealed that rotation, tenure, and competitions are among the key factors that influence auditors' independence in the banking sector of Nigeria's economy. Therefore, recommended that the regulators of the firms in the banking sectors should encourage audit firm rotations coupled with fixed but long audit tenure, and discourage the current practices of concentrating audit engagement in the sector to the big4 audit firms.

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