Determinants of External Audit Fees: Evidence from the Banking Sector in Nigeria

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Abstract
Studies abound on market structures for audit services in developed economies of the USA, UK, Canada and Australia with abysmal very few on the African continent. Across these studies is the continuous trend of exclusion of the financial sector. This study seeks to provide empirical examination of client attributes which significantly explain variations in the amount of external audit fees charged by bank auditors in Nigeria. A standard audit fee model, modified accordingly, is used to investigate the specific effect of bank size, risks and complexities on audit fees for top ten (10) publicly quoted commercial banks, which constitute over 70% of the total assets of the industry. Multiple OLS regression was adopted as the estimation technique on the panel data gathered through content analysis of annual reports and accounts of these banks over a 4-year post consolidation periods covering 2009-2012. The findings from this study reveal that bank size is also an important factor that is priced by bank auditors having shown a positive and significant influence accounting for 63% variations. Risk proxied by capital adequacy and non performing loans ratios was insignificant but positive and negative respectively; while only the number of branches used to operationalise complexities associated with bank audit displayed a negative and significant influence. The massive deployment of Information Technology (IT) in the industry, especially for the rendering of returns by branches of these banks to their head offices could account for this result.
Keywords: Audit fees, External audit, Banking sector, Nigeria.

1. Introduction

Audit as defined by the American Accounting Association, AAA (1973) is a 'systematic process of objectively obtaining and evaluating evidence regarding assertions about economic actions and events to ascertain the degree of correspondence between the assertions and established criteria and communicating the results to interested users'. It serves a vital economic purpose and plays an important role in serving the public interest to strengthen accountability and reinforce trust and confidence in financial information and reporting. Annual audit is compulsory for companies, including banks in Nigeria. However, in recent years, and in the light of massive corporate scandals, there is ongoing global demand for improvements in audit quality. The principal-agent conflict depicted in agency theory, where principals lack reasons to trust their agents because of information asymmetries and differing motives, is critical to understanding the development of the audit over the centuries as well as its usefulness and purpose (Institute of Chartered Accountants of English and Wales, ICAEW, 2007).

An agency relationship arises when one or more principals (e.g. an owner) engage another person as their agent (or steward) to perform a service on their behalf. Performance of this service results in the delegation of some decision-making authority to the agent. Auditors are agents of the shareholders whose interests are considered different to those of the managers of the companies audited (Jensen & Meckling, 1976). No doubt, information asymmetry is a direct consequent of audit. As reported, the concept of information asymmetry emerged from the studies of three very important economic researchers (Akerlof (1970), Spence (1976) and Stigliz, (1979)), thus they have made the economic theory evolve establishing the basis for modern economic theory (Riley, 2001 in Ivan (2011)). Ng (1978) appreciates that the external auditors have two main functions complementing the reduction of the information asymmetry: they detect the eventual non-compliance to the accounting regulations and limit the discretionary accounting practices of the managers. Relying on this theory, Watts & Zimmermann (1986) appreciate that an audit is efficient, when an auditor is competent and independent. One of the main characteristics of the auditor's independence is a correct audit fee for the service which is determined ahead of the commencement of the engagement.

Although not clearly defined in any of the International Standards on Auditing (ISAs), the Nigerian Auditing Standards (NSAs), the IFAC Code of Ethics for Professional Accountants and the ICAN Scale of Professional Fees, the aspects regarding audit fees are extensively analyzed from the point of view of their effects on auditor's independence. The audit fees can thus be simply described as the sums payable/paid to the auditor, for the audit services offered to the auditee (client). According to Simunic (1980), it is a reflection of economic cost of efficient auditors. In line with this, the Code of Ethics for Professional Accountants establishes that 'when entering into negotiations regarding professional services, a professional accountant in public practice may quote

whatever fee that is deemed appropriate'. Similarly, the ICAN's Scale of Professional Fees while indicating that practitioners charge ridiculously inappropriate audit fees also affirm that a reasonably remunerated firm should deliver first class service for the needs of private sector clients, public sector clients, regulatory authorities and the general public.

There is a growing trend concerning the nature of audit market and what is an appropriate audit fees and how do auditors determine such which is charged and is required to be paid or payable by the auditee. The methodology for arriving at an appropriate audit fee is still on-going, especially in the developing economies where researches in this area are still very scanty. More specific to this study is the continuous exclusion of the financial sector, including banks, in most of the studies on the market and cost determination for audit services (Fields *et al*, 2004). This paper, no doubt, serves to contribute to this contemporary issue, thereby reducing the dearth of studies in this area, especially, in emerging economy like Nigeria. The rest of this paper is structured as follows: section II provides a copious review of relevant literatures and empirical studies as well; this is followed by section III which describes the material and methods adopted in this study; while section IV presents the results of the analyses and discusses same, the concluding remarks is the focus of section V.

2.   Literature Review

This section presents a review of related works relevant to this paper. The review is carried out commencing with studies conducted on developed economies, followed by those ones conducted on developing economies.

2.1   Developed Economies

Commencing with the pioneer seminar work of Simunic (1980), there has been copious studies investigating the determinants of audit fees in several developed countries. He developed the basic model to explain the relationship between the amounts paid by clients to their auditors. Thereafter, similar studies which either tend to either buttress or extend Simunic's work have been undertaken and also adopting this model, though with modifications, before application to the varying settings. Among these countries are in the United Kingdom (Taylor and Baker, 1981; Taffler and Ramalinggam, 1982; Chan *et al.* 1993; Pong and Whittington 1994; in USA (Francis and Simon, 1987; Palmrose, 1986), in Canada (Chung and Lindsay, 1988; Anderson and Zeghal, 1994), in New Zealand (Firth, 1985; Johnson, Walker & Westergaard, 1995), in Australia (Francis, 1984; Francis and Stokes, 1986; Jubb *et al*. 1996; Craswell and Francis, 1999) and in Japan (Taylor, 1997).

Overall, factors which has since been deployed by these varying studies to explain audit fees are categorized into client attributes (major ones are size, complexity and risk with internal audit, corporate governance, profitability, etc as emerging), auditor attributes (big 4, specialization, tenure, location, etc) and the engagement attributes (audit opinion, non-audit services and busy seasons). This paper focuses on the major client characteristics of size, complexity and risk as they have been widely reported to show strong explanatory power in explaining audit fees across samples (DeFond *et al.* 2000). For easy articulation of thought, brevity and clarity, selected previous works related to developed countries alongside their authors, year and major findings are tabulated below:

Table 1a: Selected previous studies on determinants of audit fees in the developed economies

Country	Author	Industry-type	Size	Risk	Complexity
UK	Taylor, et al (1981)	Non-financial	Sig.	n/a	Sig.
New Zealand	Johnson, et al (1995)	Non- financial	Sig.	Sig.	Sig.
New Zealand	Firth (1985)	Non- financial	Sig	Sig.	Insig.
Canada	Anderson & Zeghal (1994)	Non- financial	Sig.	Sig.	Sig.
Netherlands	Langendijk (1997)	Non-financial	Sig.	Sig.	Sig.
Ireland	Simon & Taylor (2002)	Financial & non-financial	Sig.	Sig.	Sig.

Source: Firer and Swartz (2007) modified slightly by the authors

n/a= not associated

Beside the tabulated studies shown above, there are other relevant works, conducted in the developed countries as well, that are also worth reviewing alongside their major findings. Among the client attributes, no doubt, the size of the auditee has been the most predominant and statistically significant variable in determining audit fees charged to entities and also permeate industries (see Wilson, (2003), Chung and Narasimhan *et al.* (2002), Carson *et al.* (2004), Cameran (2005), etc, financial (Fields *et al.* (2004) and Swanson (2008)) or otherwise. There appears to be a large consensus in this area.

Auditee risk is another factor that is considered with different variables used to proxy it. These among others include audit gearing ratios (Sandra *et al*. 1996) and opinion type (Davis *et al*. 1993). However, noting the peculiar nature of the financial sector, Fields *et al*. (2004) adopted losses, efficiency ratios, non-performing loans ratios, capital adequacy ratio and interest rate risk to measure 277 financial institutions firm risk, operating risk,

credit risk, capital risk and market risk respectively reporting significant and positive influence on the audit fees with the exception of losses that is insignificant.

Yet another major determinant is the complexities of the auditee (Davis *et al.*, 1993). The total number of consolidated subsidiaries and/or branches (Francis *et al.* 1986; Wilson, 2003; Ezzamel *et al.* 2002), the ratio of receivables and/ or inventories to the total assets (Firth, 1985; Simon *et al.* 2002), audit fee diversification (Chan *et al.* 1993) are few measures that were adopted in previous studies. In most of these studies, they were seen to have exhibited positive and significant relationship while a few have also been reported to have been insignificant (Firth, 1997).

2.2   Developing Economies

To date, there have been very few studies on the determinants of audit fees in developing economies. Early works in this area are in countries like India: Simon *et al.* (1986); Singapore: Low *et al.* (1990); South Africa: Simon (1995); Bangladesh: Karim and Mozier (1996); South Korea: Taylor *et al.* (1999); and Bahrain: Joshi *et al.* (2000); With recent empirical studies in Qatar: Kutob *et al.* (2004); South Africa: Firer and Swartz (2007); Jordan: Naser *et al.* (2007); Kuwait: Shammari (2008) and Nigeria: Akinpelu *et al.* (2013).

Similar to what is done above the selected studies in developing economies alongside their major findings are also tabulated below.

Table 1b: Selected previous studies on determinants of audit fees in developing economies

Country	Author	Industry-type	Size	Risk	Complexity
South Africa	Simon (1995)	Non-financial	Sig.	Sig.	Sig.
South Africa	Firer, et al (2007)	Financial & non-financial	Sig.	Sig.	Sig.
Kuwait	Shammari,et al (2008)	Non-financial	Sig.	Sig.	Sig.
Bangladesh	Karim et al (1996)	Non-financial	Sig.	n/a	Sig.
Bahrain	Joshi et al (2000)	Non-financial	Sig.	Sig.	Sig.
Singapore	Low et al (1990)	Non-financial	Sig.	Insig	Sig.
Hong Kong/ Malaysia/ Singapore	Simon et al (1992)	Non-financial	Sig.	Sig.	Sig.

Source: Firer and Swartz (2007) modified slightly by the authors

Findings from table 1b above shows no clear departure from what obtain in the developed countries with respect to size, risk and complexity in determining variations in audit fees. Mohd *et al.* (2000) and Ayoib (2001) using the Malaysian listed Bursa annual report for companies from 1993-1995 reported positive and significant association. However, Basioudis and Fifi (2004) though returned a positive and significant relationship with respect to clients' size and complexity (using the total number of consolidated subsidiaries) but on the contrary also reported a negative but significant influence of auditee risk using debt ratio as a proxy.

On the financial scene, Rohami *et al.* (2007) while studying the relationship between non-audit fees and audit fees controlled for auditee size and complexity and was reported to have also positively and statistically significant. Similarly, Akinpelu *et al.* (2013) conducted a cross-sectional analysis of 13 Nigerian banks for 2009 financial year. They reported positive and significant influence of auditee size, current saving deposits account ratio (use to proxy risk) and the number of consolidated subsidiaries while also having to cope with a negative and non-significant impact on the audit fee.

3.   Materials and Methods

This section describes the sample selection procedure, data sources, model specification and the estimation techniques adopted in this study.

3.1   Sample and Data sources

The sample size for this study is made up of ten (10) publicly quoted commercial banks, whose shares are listed and traded on the Nigeria Stock Exchange (NSE) as at 31st December, 2012. These banks, according to the Afrinvest Reports on Banks in Nigeria for 2013, account for over 70% of the industry total asset. Furthermore, the required data, which comprises of audit fees and other bank specific information, which is panel in nature, is gathered through content analysis of the annual reports and accounts of these selected banks.

3.2   Model Specification and Variable Measurement

The model for this study is based on the standard Simunic (1980) audit fee model and as modified by Fields *et al.* (2004). The modification involves the incorporation of bank-related variables, especially, of risks and complexities. This is also consistent with the existing literature relevant to this study coupled with their usage by regulatory government agencies. The model is as stated below:

$LogAF_{it} = b_1 + Logb_2GE_{it} + b_3CAR_{it} + b_4NPLR_{it} + b_5SUBS_{it} + b_6BRHS_{it} + e_{it}$ ……..….…………….. (1)

The measurement of variables as captured in the above model is explained as follows:

Dependent Variable:

Audit fees	LogAF	Natural log of the total audit fees

Independent Variables:

Variables   Symbol   Measurement

                        Apriori signs

Gross earnings	LogGE	Natural log of the total gross earnings	+
Capital risk	CAR	Adjusted capital/ Risk weighted assets	+
Credit risk	NPLR	Non-performing loans/ Total loans & advances	+
Total subsidiaries	SUBS	Total number of consolidated subsidiaries	+
Total branches	BRHS	Total number of branches	+

e_{it} = Error term (assumed to be independent and identically distributed (*iid*) across banks and over time)

b_2-b_6 = Regression coefficients

3.3 Data Analyses Techniques and Procedures

The ordinary least square (OLS) panel regression is the estimating technique adopted in this study. Initially, equation (1) above assumes a simplest approach by running a pooled regression. However, in order to account for the deficiency of oversimplification and overcome the associated highly restricted assumptions of the pooled regression, the fixed and the random effects OLS estimation is conducted. The fixed effect model of equation (1) is stated as:

$LogAF_{it} = b_{1i} + Logb_2GE_{2it} + b_3CAR_{3it} + b_4NPLR_{4it} + b_5SUBS_{5it} + b_6BRHS_{6it} + e_{it}$ ………………..… (2)

Where b_{1i} is assumed to be fixed; The fixed (within group) effect is adopted for this study.

Lastly, for the random effects, the Mundlak (1978) model of estimating panel data is adopted. By so doing, a disturbance term is introduced. Instead of treating b_{1i} in equation (2) as fixed, it is assume to be a random variable with an average value of b_1 (removing the subscript, i). Therefore, the intercept value for each bank is expressed as:

$b_{1i} = b_1 + \varepsilon_i$ …………………………………………………………………………...………….… (3)

Where ε_i is a random error term with a mean value of zero and variance of σ^2_ε.

By implication, the ten sampled banks are rather drawing from a much larger universe and that they have a common mean value for the intercept ($=b_1$) and the individual differences in the intercept values of each bank are reflected in the error term, ε_i. Hence, equation (2) is then written as:

$LogAF_{it} = b_1 + Logb_2GE_{2it} + b_3CAR_{3it} + b_4NPLR_{4it} + b_5SUBS_{5it} + b_6BRHS_{6it} + \varepsilon_i + e_{it}$………………..... (4)

Equation (4) then becomes the random effects model, rewritten as:

$LogAF_{it} = b_1 + Logb_2GE_{2it} + b_3CAR_{3it} + b_4NPLR_{4it} + b_5SUBS_{5it} + b_6BRHS_{6it} + \eta_{it}$ …………………..... (5)

Where $\eta_{it} = \varepsilon_i + e_{it}$, that is, the component error term.

While the Breusch and Pagan Lagrangian multiplier test is computed to compare estimates of the pooled regression and the random effects, the hausman test of effects comparison is then used to choose between the fixed and the random effects regression models.

4. Results and Discussion of Findings

This section is divided into descriptive (which presents the summary statistics), the correlation matrix table and the multivariate results (which presents the results for the regression). A discussion of findings is done under each sub-heads.

4.1 Descriptive Statistics

Table 1 (see appendix) shows the summary of the descriptive statistics for all the variables in the model. It can be seen from the table that there are considerable differences in the auditee-specific attributes adopted for this study. The mean audit fee paid by banks was N140.681million with a standard deviation of 55.236 points, the maximum amount being N252million and the minimum is N30million. The average gross earnings reported by banks over these periods were N133, 312.10billion with a minimum of N48, 934billion and a maximum of N360, 345billion. Similarly, the average capital adequacy ratio is 25% (approx.), the maximum being 44%, while the minimum is 14%. This translates to the fact that all the selected commercial banks used for this study met the CBN 10% capital adequacy hurdle ratio up to year 2011. The CAR is 15% from year 2012. Still, all these banks met this requirement as none of them reported a figure that is less than 15% for 2012 financial year.

Furthermore, only 8% (approx.) on average, of the total loans and advances lent out were non-performing with a maximum and minimum of 0.10% and 22.91% respectively. While the average number of subsidiaries consolidated into the holding companies' accounts over the 4-year period was 10 with a minimum of 5 and maximum of 26, branches of these banks has an average of 305, the maximum being 711 with a minimum of 91.

4.2 Correlation results

The pearson correlation matrix for all the variables is as computed and shown in table 3 (see appendix). From the

table, it is evidenced that none of the variables exhibited significant correlation to warrant exclusion before the OLS estimation is done. This procedure is for the purpose of detecting any multicollinearity problem which may affect the estimation.

4.3   Multivariate Results

The results for the regression estimates are presented in tables 4a, 4b and 4c (see appendix) for the pooled, fixed effects (within group) and the random effects (GLS) respectively. Before any attempt at any interpretation to allow for further discussion of results and findings, it is pertinent to determine which of the regression estimates does this study hinges upon. To this end, a comparison is made, first between the pooled and the random effects (GLS) regression estimates on one hand, using the Breusch and Pagan Lagrangian multiplier test; and between the fixed effects (within group) and the random effects (GLS) regression estimates on another hand, using the hausman fixed test.

Pooled versus Random (GLS) effects: The results for the Breusch and Pagan Lagrangian multiplier test is presented as table 5a (see appendix). The table shows that the result of the L-M test for random effects is insignificant with chi-square value of 1.60 and a p-value of 0.21 (approx.), higher than 0.05 or 0.01 benchmark. The null hypothesis is therefore not rejected; hence the pooled estimation is appropriate.

Fixed effects (within group) versus the random effects (GLS) regression estimates: The hausman fixed test results is also presented as table 5b (see appendix). This test examines if the individual effects are uncorrelated with the other regressors in the model. With the results as shown in the table, it can be deduced that the regressors are slightly uncorrelated with the u_i making the random effect estimator to be consistent and efficient over the fixed effect. Hence, the fixed effect is of no relevance in this study. Conclusively, it is evident that neither fixed nor random effect is evidenced in this study. Hence, the pooled constant regression estimates is considered appropriate and is the estimator upon which this study is based. This conclusion seems not surprising especially as it concerns the banking industry, where all firms therein are subject to virtually the same issues and would tend to react similarly. This homogeneity tendency is further amplified as banks in the industry are largely regulated by the Central Bank of Nigeria.

From table 4a, of the three coefficient estimates which carry the expected apriori expectations, only bank size (proxied with gross earnings) is statistically significant accounting for approximately 63% of variations in the bank audit fees. This is largely consistent with previous studies in both developed (Fields *et al.* (2004) and Swanson (2008)) and developing countries (Rohami *et al.* (2007) and Akinpelu *et al.* (2013)), irrespective of the industry and sectoral classification. The capital adequacy ratio and the number of consolidated subsidiaries are statistically insignificant. This implies that bank auditors do not price capital risk. This is consistent with the work of Fields *et al.* (2004) save for the status of insignificancy shown in this study and contrary to the study of Akinpelu *et al.* (2013) which reported a negative and a non significant estimates. Another inconsistency is with the non performing loan ratio which is negative and non significant unlike Fields *et al.* (2004) and Akinpelu *et al.* (2013) where both are positive, but while the former is significant, the latter is insignificant.

Lastly is the number of branches used to proxy bank complexity. This is negative and also statistically significant. This is a pointer to the fact that returns rendered through electronic means from branches to their head offices are rather considered adequate and valid for bank auditors, thereby reducing long travels by them.

5.   Conclusion

This study examines specific client attributes capable of influencing audit fees of top 10 quoted banks in Nigeria. From the estimates, the bank size is found to be an overriding factor that is priced by bank auditors. This suggests that industrial or sectoral classifications seem irrelevant when it comes to bank size as a determinant of audit fees, both in developing and developed economies. In addition, the number of branches, used to proxy bank complexities, seen to have displayed a negative and statistically significant influence could suggest the impact of Information Technology (IT) largely deployed in the industry for the filing of returns by branches of these banks to their head offices and even by these banks to the CBN on a daily, weekly, monthly, quarterly and annual basis.

Lastly, since banks in Nigeria now prepare their annual reports and accounts using the newly adopted International Financial Reporting Standards (IFRS), though effective from 2012, with 2011 also done as a basis for comparison, it is the considered opinion of the authors that future research on this area should include IFRS bank specific variables, especially, risk exposure measures, in addition to other variables not covered in this study. The concentration of bank nowadays tends to be predominantly on risk management, especially, market risk.

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Appendix: Schedules of tables for the study

Table 2: Summary of descriptive statistics

Variables	Mean	Min	Max.	Std. Dev.
Audit fees N'm	N140.681	N30	N252	55.236
Gross Earnings N'b	N133,312	N48,934	N360,34	72,087.93
Cap. Adequacy Ratio %	24.62	13.90	43.78	7.50
Non-Perf. Loan Ratio %	7.63	0.10	22.91	5.64
Subsidiaries	10.33	5	26	4.28
Branches	305.7	91	711	201.47

Source: Stata output of data inputed by the authors

Table 3: Pearson Correlation Matrix

Variables	LOGAF	LOGGE	CAR	NPLR	SUBS	BRHS
LOGAF	1					
LOGGE	0.4954	1				
CAR	-0.0597	-0.4503	1			
NPLR	-0.2400	0.0038	-0.3384	1		
SUBS	0.3172	0.5861	-0.2829	-0.1323	1	
BRHS	0.1636	0.7989	-0.4279	-0.0551	0.7109	1

Source: Stata output of data inputed by the authors

Table 4a: Pooled Regression Estimates

Dep.Var.: LOGAF	coefficient	standard error	t-statistics
LOGGE	0.6251	0.2137	2.93**
CAR	0.0022	0.0158	0.14
NPLR	-0.0133	0.0128	1.04
SUBS	0.0175	0.0163	1.08
BRHS	-0.0012	0.0005	2.20*
Const.	-2.0906	2.4924	0.84

Source: Stata output of data inputed by the authors.
*sig @ 5%; **sig @ 10%
R^2= 0.5238;   Adj. R^2=0.3074; Prob>F=0.1031; F(5, 11)=2.42

Table 4b: Fixed Effects (within) Regression Estimates

Dep.Var.: LOGAF	coefficient	standard error	t-statistics
LOGGE	-0.4940	0.9212	-0.54
CAR	-0.0181	0.0351	-0.05
NPLR	-0.0119	0.0207	-0.57
SUBS	-0.0013	0.0516	-0.02
BRHS	0.0027	0.0043	0.64
Const.	10.0391	9.5927	1.05

Source: Stata output of data inputed by the authors.
R^2: within= 0.2021; between=0.0005; overall=0.0004**;**
Prob>F=0.9450; Corr(u_i, xb)=-0.8535;   F(5, 4)=0.20

Table 4c: Random Effects (GLS Regression) Estimates

Dep.Var.: LOGAF	coefficient	standard error	z-statistics
LOGGE	0.5546	0.2670	2.08*
CAR	0.0011	0.0169	0.07
NPLR	-0.0116	0.0131	-0.88
SUBS	0.0131	0.0197	0.67
BRHS	-0.0010	0.0007	-1.45
Const.	-1.2474	3.1056	0.40

Source: Stata output of data inputed by the authors.
*sig. @ 5%
R^2: within= 0.0318; between=0.7345; overall=0.5224**;**   Wald chi^2 (5) = 6.70
Prob>chi^2=0.2437;   Corr(u_i, x)=0 (asumed); F(5, 4)=0.20

Table 5a: Estimated results of L-M test for random effects

Estimated results	Var	Sd= sqrt (var)
LOGAF	0.0827	0.2875
E	0.0567	0.2380
U	0.0233	0.1525

Source: stata output
Test: var (u) = 0; Chi^2 (1) = 1.60;   Prob>chi^2=0.2060

Table 5b: The hausman fixed test results

Variables	Coefficients		Difference	Sqrt (diag(v_b-v_B))
	(b)	(B)	(b-B)	S.E
LOGGE	-0.4940	0.5546	-1.0486	0.8816
CAR	-0.0018	0.0011	-0.0030	0.0308
NPLR	-0.0119	-0.0116	-0.0004	0.0161
SUBS	-0.0013	0.0131	-0.0144	0.0477
BRHS	0.0027	-0.0010	0.0038	0.0042

Source: stata output

Test: Ho: difference in coefficient not systematic

$Chi^2 (5) = (b-B)' ((v\_b-v\_B)^{\wedge}(-1)) = 3.14;$ $Prob>chi^2 = 0.6785$