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Article

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Firm-Specific Determinants of Profitability in the Insurance Sector: Empirical Evidence from Nigeria

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Abstract: This study investigates firm-specific factors that affect the profitability of 8 composite insurance company in Nigeria from 2009-2015. We adopt an explanatory research design and analyze the secondary data gathered using the panel data regression model. The results reveal that while a negative linear relationship exists among return on asset, leverage, tangibility, and size, there is a positive linear relation between return on asset, risk, and growth of the composite insurance company in Nigeria. The probability values 0.04, 0.00 < 0.05 show that leverage and tangibility are statistically significant at 5 and 1 percent levels. The Hausman test reveals that the random effect model is better than the fixed effect model at determining the profitability of the composite insurance company in relation to the firm- specific factors under consideration. The study, therefore, concludes that the leverage of a composite insurance company as revealed in this study is high, and as a result, limits the average returns on asset. This implies that firm-specific factors are relevant in enhancing a composite insurance company's profitability and sustainability in Nigeria.

Keywords: Composite insurance; tangibility; firm-specific; risk level; leverage

JEL Codes: E020; G22

1. Introduction

Because all humans' economic and other activities are full of risk, the significance of the insurance business sector cannot be over-emphasized, since insurance hinges on the concept of risk. In essence, without risk, insurance businesses cannot exist. The insurance sector is an important sector with an annual growth rate of 19.55% in 2016 and contributed about 0.5% in 2010, 0.7% in 2012 and 3.05% in 2016, to the real GDP of the Nigerian economy, though this was lower than the previous contribution of 3.13% in 2015 NBS (2016).[6] Evaluating the determinants of this crucial sector's performance is important because of the vital role insurance companies play as a mechanism of risk transfer and facilitators of funds from surplus units to deficit units in order to support business activities in the economy.

The insurance industry provides financial security and intermediation to both individuals and businesses in the economy, thereby improving the nation's financial and economic development. (Kubai, 2011)

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These important roles are not limited to an individual country, but to the entire world. The main reason for the existence of any business organization is maximizing shareholders' wealth and increasing the firm's value, which is only possible when the firms' financial performance can be increased. The profitability of an insurance company is an important measure in assessing the performance of the industry and how much has been achieved. This will help in identifying measures to be put in place to further strengthen the industry such that it is better able to deliver value and live up to the expectation of the insuring public.

Insurance companies came to existence in Nigeria in the early parts of 1930, that is, about 30 years before independence. The insurance sector witnessed a slow growth, but picked up its pace and progress after the Second World War. The birth of insurance companies in Nigeria can be closely associated with the arrival of British trading companies around the period when there was noticeable growth in commercial activities (e.g., shipping and banking). This growth led to the need for these companies to deal with their risks at a local level. The British companies were given insurance agency licenses by their foreign authorities, which gave them the power to facilitate claims supervision and issue covers. Before independence in Nigeria, the foreign agents who were mainly expatriate banks with expatriate traders at the helm of affairs, but Nigerian traders and merchants were later appointed. At this time, the Nigeria agents had limited underwriting capacity because most insurable risks were underwritten by foreign insurance companies. (Osoka, 1992)

In 1921, the Royal Exchange Assurance became the first indigenous insurance company with a full head office in Nigeria. The government had to step in to regulate and control the activities of this company to protect the interests of the parties involved. This was necessitated because the freedom given to these insurance companies had been abused. By the late 1970s, new laws and six regulations were enacted by the Nigerian government to encourage local ownership of insurance companies. (Osoka, 1992) Government's intervention in the local insurance market also led to the growth of solely-owned indigenous insurance firms, even though the firms still had limited underwriting capacity and low financial performance compared with larger insurance providers. In 2007, Nigeria's National Insurance Commission (NAICOM) sought to rationalize the domestic insurance market by raising capitalization thresholds, thus increasing underwriting capacity and promoting greater product-market competition. It has been claimed by the Chartered Insurance Institute of Nigeria (CIIN) that insurance has contributed in no small measure to human capital development, and that it has enabled other sectors of the national economy to operate more effectively, based on the confidence that if anything unexpected happens, they will be aided to recover.

The insurance sector in Nigeria is making progress and penetrating into the areas of company ownership and personnel structures, and it continues to progress each day. In fact, the sector has an almost 20% growth rate, even that of financial institutions' is insignificant. This study seeks to provide empirical evidence on firm-specific factors that affect the profitability of insurance companies in Nigeria using: leverage, which is the ratio of Total asset to Total Liabilities, Loss/risk ratio (ratio of incurred claims to earned premium), Tangibility ratio (ratio of fixed asset to total asset), Growth ratio – gross premium minus past year gross premium/past year gross premium and Size which is the Natural logarithm of total asset. There are existing research works on insurance in Nigeria. However, there is a dearth of work as regards factors that affect the profitability of an insurance company in the country. In essence, this work

fills the gap in the existing literature by investigating the internal factors that influence the profitability of the insurance industry in Nigeria.

Apart from the introductory section above, for easy flow of ideas, the rest of the work has been divided into four sections. Section two discusses the literature review, while section three explains the data, research methodology, and definition of variables. Results are presented in section four, and section five concludes the paper.

2. Prior Research

The literature is replete with studies on the profitability of the insurance industry using many variables as proxies for both the profitability and the explanatory variables influencing it. Ayele (2012) in his work titled "Factors Affecting the Profitability of Insurance Companies in Ethiopia" states that internal factors such as liquidity, size growth leverage, and volume of capital are the major determinants of profitability of insurance. But tangibility and age have no effects on insurance profitability. The research was carried out for a period of nine years.

Also, Akotey and Sackey (2014) conducted research on the financial performance of life insurance on ten insurance companies in Ghana for a period of eleven years. The research was analyzed through panel regression using three parameters consisting of investment income, underwriting profit, and overall sales profitability. The scholars concluded that gross written premium and total assets have a negative effect on investment income. Similarly, Mwangi and Mungu (2015) worked on determinants of financial performance in general insurance companies in Kenya. The study considered all the general insurance companies in Kenya for the period 2009-2012 and stresses that leverage, equity capital, and management capability have a relationship with the financial performance of general firms, but size has no significant relationship with profitability.

From the recent study conducted by Hailegebreal (2016) on nine Ethiopian insurance companies titled "Macroeconomic and firm-specific determinants of profitability of the insurance industry", it is argued that age of company, solvency ratio and Gross domestic product (GDP) have positive significant relationship with profitability of the companies, while underwriting risk, technical provision, leverage and inflation have negative but significant effect on profitability. Olaosebikan (2012) carries out research on the determinants of the profitability of micro-life insurers in Nigeria and affirms that profitability has negative relationship with factors such as ownership structure, leverage and size of firms but that profitability is positively influenced by the level of interest rates. This implies that the investment function and macro-economic factors are important in assessing the future financial performance of micro-insurance firms in developing countries.

Hussain (2015) uses firm level data of 39 insurance companies in Pakistan for the period between 2006 and 2011. The findings of this study suggest that, based on overall regression results, macroeconomic environment, equity market conditions and inflation have a positive and significant impact on profitability of insurance companies in Pakistan. This is also true for non-life insurance companies. However, significance and signs of the coefficients of firm-specific characteristics and macroeconomic variables vary across life and non-life insurance companies on account of varying nature of their clientele and coverage of insurance policies. Financial strength, firm size, and financial leverage cannot be ignored in

profitability management of life insurance companies. The management of non-life insurance companies should also keep in view the macroeconomic environment, equity market conditions, and inflation, in addition to the firm's specific characteristics including financial leverage, relative firm size, financial soundness, growth opportunities, underwriting risk, and diversification in particular, to manage profitability.

In the same vein, Cekrezi (2015) conducts a research on determinants of financial performance of five insurance companies in Albania from 2008 to 2013. The financial performance of the insurance companies is analyzed at the microeconomic level and by specific characteristics of the company. The work uses cross-sectional time series data. The results show that leverage (total debt to total assets) and risk (standard deviation of sales to average value of sales) have negative impact and tangibility (fixed assets to total assets) has positive impact on the financial performance (ROA) of these companies. In Malik's (2011) work, an analysis of the insurance sector of Pakistan reveals that there is no relationship between profitability and age of the company but there is significantly positive association between size of the company and profitability. The result also shows that the volume of capital is significantly and positively related to profitability. Loss ratio and leverage ratio show negative but significant relationship with profitability.

From the above review, it is clear that there has not been a unanimous finding in the existing studies all over the world on determinants of financial performance of insurance companies. Hence, our study uses the panel data analysis in which pooled, fixed and random effect model will be fitted to evaluate firm-specific factors so as to bring into the limelight the major determinants of insurance companies' profitability in Nigeria. Our study will not only add to the existing knowledge on the Nigerian insurance sector, but globally as all economies of the world have insurance as one of its major contributors to its growth.

3. Research Method

3.1. Theoretical Underpinning: Stewardship Theory

This research is hinged on the stewardship theory. The theory protects and maximizes shareholders' wealth through firm profitability and utility functions. In this respect, stewards are company executives and managers that are working for the shareholders by protecting their interests and making profits for them. This theory suggests that stewards will be satisfied and motivated when the aim of the organization regarding success is achieved. It emphasizes the position of employees or executives to autonomously act so that the shareholders' returns on investment can be maximized. Daly et al., (2003) opine that the costs of monitoring and controlling behaviors can be minimized and that in order to protect the reputations of the shareholders and the organization as decision makers, executives and directors are disposed to operate the firm to maximize the profits or returns of investment of the shareholders. Thus, it is believed that the firm's profitability has direct impact on the perceptions of individual performance. Moreover, the theory suggests that the CEO and the chairman have a unique role: reducing agency costs for the purpose of enhancing the returns of the organization so that the interest of the shareholders can be safeguarded.

3.2. Specification of Model

The general framework of panel regression model is;

$$Y_{it} = a_i + \beta X_{it}^{'} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (i)$$

Where, Y_{it} is the dependent variable; $X_{it}^{'}$ is the vector of the regressors; a_i is the constant term i is the number of cross-section that ranges from $1\ldots\ldots\ldots\ldots N$; t is the time period that ranges from $1\ldots\ldots\ldots\ldots\ldots T$; ε_{it} is the stochastic error term.

Pooled Regression Model;

$$Y_{it} = a + \beta X_{it}^{'} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (ii)$$

Fixed Effect Model;

$$Y_{it} = a_i + \beta X_{it}^{'} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (iii)$$

Random Effect Model;

This $Y_{it} = a_i + \beta X_{it}^{'} + u_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (iv)$

Explicitly,

$$Roa_{it} = f(Lev, \tan g, risk, growth, siz) \ldots\ldots\ldots\ldots\ldots\ldots\ldots (v)$$

$$Roa_{it} = \beta_0 - \beta_1 lev_{it} + \beta_2 \tan g_{it} - \beta_3 risk_{it} + \beta_4 growth_{it} + \beta_5 siz_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots (vi)$$

A priori Expectation:

$\beta_2, \beta_4, \beta_5 > 0$; while $\beta_1 and \beta_3 < 0.$

3.3. Post Estimation Tests

To be able to detect the heterogeneity effect in the intercept across the enrire cross-section (banks), the restricted F-test is conducted to know if the analysis should proceed from the pooled OLS.

3.3.1. The Restricted F-test Statistics takes the Form:

$$F_{obs} = \frac{\left(R^2_{UR(FEM)} - R^2_{R(POOLED)}\right) \Big/ (N-1)}{\left(1 - R^2_{UR(FEM)}\right) \Big/ (NT - N - K)} \cong F_{N, N(T-1)-K}$$

3.3.2. Hausman Test

In order to choose between the random and the fixed effect estimation, Hausman test is used. Notably, these test statistics developed by Hausman has an asymptotic chi-square distribution of the comparison between the fixed and random effect estimator

The FE estimator (Within-estimator) using its demeaned form is written as:

$$\hat{\beta}_{FE} = \left(\Sigma_i \Sigma_t \left(X_{it} - \overline{X}_t\right)\left(X_{it} - \overline{X}_t\right)'\right)^{-1}\left(\Sigma_i \Sigma_t \left(X_{it} - \overline{X}_t\right)\left(Y_{it} - \overline{Y}_t\right)\right);$$

Where the vector of the regressors' coefficient is β ; Y is the dependent variable and X is the vector of the regressors.

The RE estimator (Between-Estimator) is written as;

$$\hat{\beta}_{RE} = \left(\Sigma_{it} \left(X_{it} - \hat{\eta}\overline{X}_t\right)\left(X_{it} - \hat{\eta}\overline{X}_t\right)'\right)^{-1}\left(\Sigma_{it} \left(X_{it} - \hat{\eta}\overline{X}_t\right)\left(Y_{it} - \hat{\eta}\overline{Y}_t\right)'\right);$$

$$\hat{\eta} = 1 - \sqrt{\Big/\left[1 + n\left(\hat{\sigma}_u^2 \Big/ \hat{\sigma}_e^2\right)\right]}$$

Here, n is the number of cross section, and $\hat{\beta}_{FE} = \hat{\beta}_{RE}$ when $\hat{\eta} = 1$. But most of the time, $\hat{\eta} \neq 1$; and this requires the Hausman test to compare the weighted squares of both estimators.

To derive the Hausman test statistics;

$$\hat{\beta}_{RE} = \frac{\Sigma XY}{\Sigma X^2} = \beta + \frac{\Sigma uX}{\Sigma X^2};\ Var\left(\hat{\beta}_{RE}\right) = \sigma^2 \frac{\Sigma X^2}{\left(\Sigma X^2\right)^2} = \frac{\sigma^2}{\Sigma X^2}$$

Normally when $\hat{\beta}_{RE}$ is not biased, $\frac{\Sigma uX}{\Sigma X^2} = 0$.

$$\hat{\beta}_{FE} = \frac{\Sigma RY}{\Sigma R^2} = \beta + \frac{\Sigma uR}{\Sigma XR};\ Var\left(\hat{\beta}_{FE}\right) = \sigma^2 \frac{\Sigma R^2}{\left(\Sigma XR^2\right)^2}.$$

$\hat{p} = \hat{\beta}_{FE} - \hat{\beta}_{RE}$, therefore, $Var\left(\hat{\beta}_{FE}\right) - Var\left(\hat{\beta}_{RE}\right) = \sigma^2 \frac{\Sigma R^2}{\left(\Sigma XR\right)} - \frac{\sigma^2}{\Sigma X^2} = \frac{V^2}{\Sigma X^2}\left[\frac{\Sigma R^2 \Sigma X^2}{\left(\Sigma XR\right)^2} - 1\right]$

If the correlation coefficient is W_{XR}; then $W_{XR} = \sqrt{\frac{\left(\Sigma XR\right)^2}{\Sigma R^2 \Sigma X^2}}$;

$$Var\left(\hat{\beta}_{RE}\right) - Var\left(\hat{\beta}_{FE}\right) = \frac{V^2}{\Sigma X^2}\left(\frac{1}{W_{XR}^2} - 1\right),$$

Since the Hausman test has a chi-square asymptotic distribution, the Hausman test in a matrix form is shown as; $\chi_2 = \left(\hat{\beta}_{FE} - \hat{\beta}_{RE}\right)'\left[Var(\beta_{FE})^{-1}\left(Var(\beta_{RE})^{-1}\right)\right]\left(\hat{\beta}_{FE} - \hat{\beta}_{RE}\right)$

3.4. The Nature, Sources of Data and Definition of Variables

The data used for this paper are secondary in nature and are sourced from the annual reports of all the insurance companies in Nigeria. The definition and choice of the variables are discussed below.

Profitability Ratio: The profitability of the insurance industry is germane because it is the essential pre-requisite for the survival, growth, and competitiveness of insurance firms, and the cheapest source of funds. Profitability is the primary goal of all business ventures. Hence, without profits, the insurance business cannot survive and attract outside capital to meet their set objectives in this ever-changing and competitive globalized environment. It is the most important measure of business success. Therefore, measuring the current, past and projecting future profit is very important. Profitability is a class of financial metrics that is used to assess a business' ability to generate earnings compared with its expenses and other relevant costs incurred during a specific period of time.

If these ratios have a higher value relative to the same ratio for previous periods, it indicates that the company is doing well. According to Rabo (2008), profitability is an important analytical tool of finance, which provides managers with important insights regarding overhead cost structure, ability to raise capital, adequacy of working capital and contingency reserves, efficient use of assets through the evaluation of a set of financial ratios, and observations of trends in those ratios. Also, profitability is a productive starting point for assessing the financial strengths and weaknesses, creditworthiness and other attributes of a firm based on past performance. For the purpose of this paper, profitability is captured by return on asset, which is the ratio of profit after tax to total asset.

Leverage Ratio: Leverage ratio is also known as borrowing to earning power ratio. It is the ratio of small amounts of money from lots of policyholders in order to pay out infrequent but large claims when they arise. Leverage is the ratio of total debt to total asset of the firms. It is required that the total premium be more than total expected claims. A highly leveraged insurance company is the one that may not have the ability to meet financial obligations towards policyholders when catastrophic events occur, and this is detrimental to its long-run sustainability. So, insurance company must be careful of things that can increase leverage such as writing more insurance policies, dependence on reinsurance, and the use of debt financing alone.

Size Ratio: The size of the firm is another factor that determines an insurance company's financial performance. The size of the firm affects its financial performance in many ways. Large firms can exploit economies of scale and scope and thus be more efficient compared with small firms. Size can be determined by net premium which is the premium earned by an insurance company after deducting the reinsurance ceded. The premium base of insurers dictates the quantum of policy liabilities to be borne by them. (Ahmed, Ahmed & Ahmed, 2010; Teece, 2009)

Tangibility Ratio: Tangible assets are physical assets such as land, vehicles, equipment, machinery, furniture, inventory, stock bonds and cash. These assets are the backbone of a company that keep it in production but are not available to customers. Tangibility ratio is hence a financial strength ratio that measures the proportion of a company's fixed asset to its total assets.

Growth Ratio: According to the Pecking Order theory, growing firms usually search out for external funds to maintain their growth status, because internally generated funds will no longer be sufficient to meet up to finance all the investment opportunities. As growth is also a proxy of managers' risk attitudes, it is expected that the larger a firm, the more they spread to explore different lines of activity which is a signal of an increased profitability and return. Hence, growth, captured by the ratio of changes in gross written premium, is expected to be positively related to firms' profitability.

Risk Ratio: The risk level of an insurance firm is significant in determining its profitability because all firms operate with a level of risk. Following previous research work in this context, the risk level of insurance firms is measured by the proportion of claims paid from the net premium earned per time, and a positive relationship is expected to lie between risk level and profitability of insurance companies.[1] It is captured by the ratio of claims paid over net premium earned.

4. Model Estimation and Discussion of Results

4.1. Descriptive Statistics of the Variables

This section shows the purview of the pooled observation of variables used in this study for the period under investigation with reference to the mean, standard deviation, skewness, kurtosis, minimum and maximum statistics of the variables. The panel data used to capture these variables are yearly frequency in ratio form except SIZ that is a natural log.

Table 1. Descriptive Analysis

Mean	0.0434	0.3940	0.2691	0.3274	0.3138	17.1339
Median	0.0359	0.3615	0.2508	0.3048	0.2252	16.4143
Maximum	0.2076	0.8641	0.5741	0.6759	2.8344	22.6200
Minimum	-0.0223	0.0831	-0.6404	0.0844	-0.4275	14.9101
Std. Dev.	0.0425	0.2289	0.1827	0.1571	0.4840	2.2126
Skewness	1.5966	0.3696	-1.9838	0.5294	3.1217	1.6449
Kurtosis	6.3671	1.9805	12.0335	2.4074	15.3959	4.5621
Jarque-Bera	50.2454	3.7006	227.1396	3.4357	449.4897	30.9489
Probability	0.0000	0.1572	0.0000	0.1795	0.0000	0.0000
Observations	56	56	56	56	56	56

Source: Researchers' Computation (2017)

Table 1 shows the descriptive results of all the firm-specific factors and the profitability of the composite insurance company in Nigeria for the period between 2009 and 2015. The return on asset measures the profitability of the composite insurance company, while firm specific factors are captured by leverage ratio, risk ratio, tangibility ratio growth ratio and size. The result reveals that the average return on asset of the composite insurance company in Nigeria is 4.34%. The mean of leverage, risk, tangibility, growth and size are 39.4, 26.91, 32.74, 31.38 and 17.13 percent respectively. The result shows that the average returns on asset of the composite insurance company in Nigeria is not encouraging, considering all the firm-specific factors put in place. The leverage of the composite insurance company as revealed in this study is high, and as a result, limits the average returns on asset. The maximum and minimum levels of return on asset, leverage, risk, tangibility, growth, and size of the composite insurance company are 20.7 and -2.2, 86.4 and 8.3, 57.4 and -64.0, 67.6 and 8.4 and 283.4 and -42.8 and 22.62 and 14.91 respectively.

The standard deviation values of 0.043, 0.229, 0.183, 0.157, 0.484 and 2.213 reveal the rate at which the return on asset, leverage, risk, tangibility, growth, and size of composite company in Nigeria deviate from their respective averages. It can be observed that the return on asset, leverage, tangibility, growth and size are positively skewed which implies a better performance of the composite insurance company. However,

[1] See (Abor & Biekpe, 2005).

the results also show that risk is negatively skewed, revealing a poor return for the adoption of the firm-specific factors. The Jarque-Bera values reveal that the firm-specific factors under investigation are not normally distributed, while a probability value of 0.000 < 0.05 shows variables except leverage and tangibility that have statistically insignificant impact in determining the performance of insurance industry in Nigeria.

4.2. Correlation Analysis

In an attempt to show existence and degree of relationship between pairs of variables in the operational diversification model, this section presents the correlation coefficients matrix. However, correlation analysis only depicts the degree and direction of linear relationship between pairs of variables.

Table 2. Correlation Analysis of the Variables

VARIABLES	ROA	LEV	RISK	TANG	GROWTH	SIZE
ROA	1.0000	-0.0206	0.0314	-0.0604	-0.0489	-0.0781
LEV	-0.0206	1.0000	0.3540	-0.5652	0.0971	0.1633
RISK	0.0314	0.3540	1.0000	-0.1993	-0.1166	0.0569
TANG	-0.0604	-0.5652	-0.1993	1.0000	0.0811	-0.1779
GROWTH	-0.0489	0.0971	-0.1166	0.0811	1.0000	0.0467
SIZ	-0.0781	0.1633	0.0569	-0.1779	0.0467	1.0000

Source: Researchers' Computation (2017)

The correlation analysis which is the degree of relationship between the firm-specific factors and profitability is presented in Table 2. It is measured by the correlation coefficients. From this result, it is discovered that there is a positive correlation between return on asset and risk with correlation coefficient of 0.031. This implies that as the composite insurance company is willing to take more risk, their return on asset will increase. Thus, the more risk you are willing to take, the more profitable the company will be, even if not in the short run, in the long run. The result also reveals that the correlation between the return on asset, composite insurance company leverage, tangibility, growth and size are negative. Their correlation coefficients are -0.02, -0.06, -0.05 and -0.08 respectively. This result affirms that of Malik (2011) which reveals that leverage ratio shows a negative relationship with profitability. The result also shows that a positive correlation exists between composite insurance company leverage, risk, growth and size.

However, a negative correlation is observed between leverage, risk, tangibility, growth and size with correlation coefficients given as 0.35, -0.57, 0.10, and 0.16. The degree of relationship between risk, tangibility, growth and size are -0.20, -0.12 and 0.06. This shows that as tangibility and growth increase, the risk taken by the composite insurance company begins to reduce and as the risk is increased, the size of the composite insurance is also increased. The correlation coefficients between tangibility, growth and size which are -0.08 and 0.18 reveal that a positive correlation exists between tangibility and growth, while a negative correlation exists between tangibility and the size. Moreover, growth and size are positively correlated, with the correlation coefficient given as 0.05.

4.3. Pooled, FEM and REM Estimation

Pooled estimation places restrictions on the heterogeneity or uniqueness of the cross-sectional units by stacking all the observations without taking into account their cross sectional or time series features.

Relatively, a fixed-effect estimator takes cognizance of subject and/or period heterogeneity/uniqueness that may exist in the regression model. Thus, such a heterogeneity effect is incorporated in the constant term for each of the corresponding cross-sectional units and/or periods. In addition, random effect estimation assumes that the heterogeneity is random rather than fixed, and that the random effect is incorporated into the error term, thus, forming a composite error term.

Table 3. The Fitted Panel Data Regression Models

	POOLED		FEM4ee		REM	
VARIABLE	COEFF	P>/t/	COEFF	P>/t/	COEFF	P>/t/
C	0.9172	0.000***	-1.8895	0.012**	0.9157	0.000***
Lev	-0.6615	0.043**	0.0059	0.982	-0.6551	0.040**
Tang	-0.7214	0.000***	-0.3085	0.002***	-0.7201	0.000***
Risk	0.1344	0.088*	0.1046	0.051**	0.1346	0.081*
Growth	0.0244	0.393	-0.0168	0.421	0.0242	0.392
Siz	-0.0065	0.302	0.1440	0.001***	-0.0065	0.301
R-square	0.8331		Within=0.7719		Within=0.6567	
			Between = 0.7349		Between = 0.9096	
			Overall = 0.7773		Overall = 0.8331	
Adj R-Squared	0.8126					
F-stat	F(6,49) = 40.75		F(6, 42) = 23.69			
Chi2-Stat					Wald Chi2(6)= 243.27	
Prob	Prob. F = 0.000***		Prob. F = 0.000***		Prob.Chi2= 0.000***	

Source: Researchers' Computation, (2017)

Table 3 shows the result of the pooled, fixed and random effect panel regression output. From the pooled and random effect panel regression, it is discovered that a linear relationship exists between the firm-specific factors captured by leverage, risk, tangibility, growth, and size and the return on asset, which is a measure of profitability of the composite insurance company. The result shows that a negative linear relationship exists between return on asset, leverage, tangibility and size, while a positive linear relationship is discovered between return on asset, risk, and growth of the composite insurance company in Nigeria. This result further reveals that leverage, tangibility and size reduce return on asset by 66, 72, and 1 percent, respectively. On the other hand, risk and growth increase return on asset by 13 and 2 percent respectively. The probability values 0.04 and 0.00 < 0.05 show that leverage and tangibility are statistically significant at a 5% level of significance. Also, probability values 0.09, 0.39, and 0.30 > 0.05 indicate the statistical insignificance of risk, growth and size in determining the profitability of the composite insurance company in Nigeria during the period under consideration.

This outcome is also evident from the work of Cekrezi (2015) who conducts a research on determinants of financial performance of five insurance companies in Albania from 2008-2013. His results show that leverage (total debt to total assets) and risk (standard deviation of sales to average value of sales) have negative impact, but tangibility (fixed assets to total assets) has a positive impact on the financial performance (ROA) of these companies. The R-squared value of 0.83 shows the proportion of variations or improvements in the profitability of the composite insurance company which can be explained by the firm-specific factors considered in this study. This shows the importance of these firm factors in enhancing the profitability and sustainability of composite insurance companies in Nigeria. Above all, the probability of the F-statistics, which stands at 0.000, shows that the pooled panel regression fitted is valid,

reliable, appropriate and acceptable for determining the firm-specific factors and the profitability of the composite insurance company in Nigeria.

From the fixed-effect panel regression, it is discovered that a negative linear relationship exists between return on asset, tangibility, and growth, while a positive linear relation is observed between return on asset, leverage, risk, and size of the composite insurance company. This result further shows that tangibility and growth limit return on asset by 31 and 2 percent respectively. However, leverage, risk, and growth lead to increment of return on asset by 1, 10 and 14 percent respectively. This is contrary to the earlier result obtained by Olaosebikan (2012) who carries out a research on the determinants of the profitability of micro-life insurers in Nigeria and reveals that profitability has a negative relationship with factors such as ownership structure, leverage, and size of firms, is positively influenced by the level of interest rates. The probability values of 0.00, 0.05, and $0.00 \leq 0.05$ show the statistical significance of tangibility, risk and size at 5 percent level. Also, probability values 0.98, $0.42 > 0.05$ reveal the statistical insignificance of leverage and growth in determining the profitability of the composite insurance company during the period under consideration.

The R-squared value of 0.78 shows the proportion of variations or improvements in the profitability of the composite insurance company in Nigeria that can be explained by the firm-specific factors being considered. Thus, it implies the relevance of the firm specific factors in enhancing the composite insurance company's profitability and sustainability in Nigeria. Above all, the probability of the F-statistics, which stands at 0.000 shows that the fixed-effect panel regression fitted is valid, reliable, appropriate, and acceptable for determining the firm-specific factors and the profitability of the composite insurance company in Nigeria.

Table 4. Restricted F-Test of Heterogeneity

Null Hypothesis	F-statistics	Probability	Degree of Freedom
Ui=0	13.91	0.0000	(7, 42)

Source: Researchers' Computation, (2017)

From Table 4, it is observed that the F-statistics values of 13.91 and probability value $0.00 < 0.05$ imply that there is enough evidence to reject the null hypothesis that all differential intercepts corresponding to the cross-sectional specific units are equal to zero. Therefore, it can be concluded that there is a unique cross-sectional effect among the selected insurance companies employed in this study with the aim of identifying the factors determining their financial performance. Thus, pooled regression estimator restriction is not valid, as the cross-sectional heterogeneity effect is too significant to be overlooked and ignored.

Table 5. Hausman Test of Fixed and Random Effect Model

Null Hypothesis: there is no substantial difference between fixed effect and random effect estimates		
Test-Estimate	Chi-Square Statistics	Probability
chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)	4.65	0.5893

Source: Researchers' Computation, (2017)

From Table 5, the probability of the chi-square value standing at 0.589 > 0.05 shows that there is enough evidence to reject the null hypothesis. Hence, the difference in coefficients is systematic and substantial. This implies that there is no correlation between the random effects incorporated into the composite error term and one or more of the firm-specific factors. Thus, the random effect model estimation becomes the best model that is most efficient, consistent, and preferred in this study for conclusion and recommendation.

5. Conclusion and Recommendation of Policies

A thorough examination of the firm-specific factors and the profitability of the composite insurance company reveals the following findings: the average return on asset of the composite insurance company in Nigeria is 4.34%, while the means of leverage, risk, tangibility, growth and size are 39.4, 26.91, 32.74, 31.38 and 17.13 percent respectively; The standard deviation values of 0.043, 0.229, 0.183, 0.157, 0.484 and 2.213 reveal the rate at which return on asset, leverage, risk, tangibility, growth, and size of composite insurance company in Nigeria deviate from their respective average fixed effects. Panel regression reveals that a negative linear relationship exists between return on asset, tangibility, and growth, while a positive linear relation is observed between return on asset, leverage, risk, and size of the composite insurance company in Nigeria. There is a unique cross-sectional effect among the selected insurance companies employed in this study.

Thus, it can be concluded that the average returns on asset of the composite insurance company in Nigeria is not encouraging, considering all the firm-specific factors put in place. The leverage of the composite insurance company is high, and as a result, limits the average returns on asset. Therefore, the firm-specific factors are relevant in enhancing the composite insurance company's profitability and its sustainability in Nigeria. It can thus be recommended that there is need for a rational tightening of management discipline, proper management of distribution channels, and automation of business operation implementation using modern information technology. The profitability of the composite insurance company can be increased through investment activities subject to relevant regulatory restrictions, so as to safeguard the liquidity of the company and ensure the maturity of the assets and liabilities of investors.

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