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# Analysis of Insurance Investment on Capital Market In Nigeria

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## ABSTRACT

*Premiums accruing from insurance companies' longer-term (life insurance) business represents an important proportion of both the stock, and flow of long-term financial savings that influence the direction of investment into capital markets in the economy. This study is carried out to investigate the impact of insurance companies' investment on capital market in Nigeria, using ordinary least square regression and correlation analysis. The secondary data for this study was sourced from insurance companies listed on the stock exchange market during the period of 2002 to 2015. The observation of the fourteen years' data was analyzed using the Eviews 9 and descriptive statistics. The findings of the study revealed that three independent variables: the life insurance premiums and other insurance investments, have no significant effect on the Nigeria capital market within the period of study. Therefore, the study recommends that the government should implement more effective laws to ensure an increase in the investment volume of insurance companies and the deepening of insurance penetration through financial inclusion of insurance to contribute meaningfully to the capital market.*

**Key Words:** Investment, Capital Market, Insurance. Premium. Financial inclusion

## **Introduction**

The insurance and pension companies in both developed and developing economies in which Nigeria is not exempted have been identified as institutions that contributes immensely to the growth and efficiency of the capital market. On the same page Economic Survey of Indian Finance Ministry (2012) submitted that in the developed economies, huge amounts of stable, long-term funds were channeled into capital markets by pension funds and the insurance sector and these funds facilitated the emergence of very liquid stock markets in those economies.

The insurance institution as a financial instrument is essential for any economy, especially the developing countries because its effectiveness and development is a key to capital and investments growth. The positive effects of a sound and well-developed insurance institution are driven by its intermediation role in the economy, which enables the industry to mobilize funds through collection of both short and long term premium, acceleration of foreign investment and optimization of investment in the capital market. The Pensions Reform Act (PRA) of 2004 is the most recent legislation of the Federal Government of Nigeria which is aimed at reforming the pensions system in the country. This reform was initiated to influence crucial developments within the pension companies, basically to attract institutional investors who would play a positive role in the development of the financial market in Nigeria. The Acts aim to ensure guarantee of prompt payment of pensions and also increase the standard of living of retirees, and also, that a portion of pension funds are used to develop the economy of the nation, which will make a significant addition to the GDP of the country. Akeni (2008) stated that the new Pensions Reform Act (PRA) of 2004 is designed to be fully funded (by both the employee and employer), publicly and privately managed and based on individual accounts. Also, Victor Okoye and Eze (2013) in their study submitted that Pension Reform Act (PRA), 2004 is aimed at developing a system that is sustainable and had the capacity to achieve the ultimate goals of providing a stable, predictable and adequate source of retirement income for each worker in the country.

The capital market is a platform where the demand and supply for financial instruments to create and transform financial claims are realized. It is a unique institutional mechanism where its performance and effectiveness is the function of other financial institutions. According to Chepkoiwo (2011) a typical capital market comprise of the following institutions: Banks, insurance companies, Mutual funds, mortgage funds, finance companies and stock markets. The insurance industry as one of the key financial institutions in the economy plays a major role in the development of capital market in Nigeria. Evidently, the utmost concern of life insurance contract and pension scheme is to provide financial security respectively in term of income to the beneficiary after death of the breadwinner, and income to the principal and his or her

family after retirement. Pension funds and insurance companies longer-term (life insurance) contract's premium represent an important proportion of both the stock and flow of long-term financial savings that influence the direction of investment into capital markets in the economy.

The Nigerian Government has restructured and mobilized the financial sector in the country at several occasions, by implementing a number of legislative advancements in the past ten and fourteen years, in 2007 it was recapitalization of Nigeria insurance industry, also the pension law in the country was reviewed, and a new pension act was enacted in 2004. Insurance and pension companies are parts of the relevant financial institutions in Nigeria that encourage and mobilize savings and also channel the savings into productive investment in the capital market.

The Nigeria capital market is expected to provide the much needed capital to cushion the unexpected shock in the economy. All financial institutions are expected to play a significant role in this regard. On this premise, this study stands to examine the contributions of the insurance companies' investments to the Nigeria capital market.

### **Research Questions**

- i. To what extent does Life insurance premium impact capital market in Nigeria economy?
- ii. Does insurance company's investment affect capital market in Nigeria?
- iii. Does pension fund has effect on capital market in Nigeria?

### **Literature Review**

#### ***Insurance investment and capital market***

Insurance is similar to banks and capital market as they serve the needs of business units and private household in financial intermediation, therefore, insurance is a very key part of financial sector. In developed market, the insurance sector accounts for a significant portion of the economy (Taiwo, 2014). As institutional investors, insurance companies are very important participants in the financial market, especially in the capital market; they have a very important role as they contribute to the strengthening of competition in the financial market, stimulate financial innovation, strengthen corporate governance, contribute to increase market integrity, pressure for modernizing market infrastructure, encourage the development of regulations, which primarily stems from their long-term business horizon (Balaban, 2014).

The insurance companies have large cash inflows and reserves (linked to the payment of premiums), which may be invested in less liquid instruments as bonds and equities; in this context, the development of insurance services plays a primordial role in the financial markets development through the risk management, the savings allocation and the market growth (Sawadogo and Guérineau, 2015). Capital markets may also be a driving force for the benefit of

the institutional investor's development. Given that, the insurance companies have the responsibility to compensate those with long-term contract, especially with the liquidity needs, they are a natural complement for the capital markets development (Masci, Tejerina, and Webb, 2007).

Portfolio managers in insurance companies are required to in the asset management of reserves, ensuring return on investment that provides at least to preserve the real value of invested assets. Such rates therefore should be at least equal to the average interest rate on the capital market (Balaban, 2014). Insurance companies would have effectively and with minimal risk to invest resources while maintaining the current liquidity, given that the primary function of ensuring the protection of the insured, safety should be the basic principle of investing and much more important than profitability; it is therefore a necessity to diversify the investment portfolio and thus ensure the realization of returns with an acceptable level of risk (Balaban, 2014).

The size of funds held by the Insurance Industry in Nigeria represents a reasonable percentage of the country's total invisible funds generated by the capital market (Oluoma, 2014). These investments in capital market serves as a shield for insurance against predictable underwriting losses which are more prominent than profits (Agwuegbo et al., 2010). As institutional investors, insurance companies are among the most important participants in the financial market, especially in the capital market, one of the important factors that determine the structure of investments of insurance companies in the world, certainly are the level of development of financial markets in a country; as the capital market is more developed, there are more high quality paper and as more investors to invest in it, be sure that such a market insurance companies provide many more opportunities for adequate investment (Balaban, 2014). The insurance sector in developed countries offers a whole bunch of specialized products, educated and experienced clients and insurance coverage is recognized as an important value, the potentiality of growth contribution is much higher than in developing countries where the insurance sector hardly reaches the same important and evolutionary stage. Balaban (2014) pointed out some important activities of insurance companies carried out in the financial markets, reflected in the following:

- i. Insurance provides financial stability and reduce uncertainty through indemnity all those who have suffered loss. In this way it reduces the effect of mass bankruptcies that could have catastrophic consequences on production, employment, state tax revenues, and the state of an economy in general.
- ii. Voluntary pension insurance as one of the most important types of insurance in terms of investments of these funds on financial markets provides security for future pensioners that their retirement based on their payments be paid out monthly is stable until the end of their lives.
- iii. Growing of small amounts of money collected in the form of premiums,

- insurance companies are able to finance large investment projects and thus positively affect the economic growth of the country.
- iv. Insurance provides effective risk management and transforming evaluating risk. when investing, insurance companies thoroughly investigate the credit worthiness of the borrower, which allows other investors in the market to obtain information about the characteristics of other firms in the environment when making investment decisions.
  - v. Conducting international trade between partners who are not sufficiently familiar with is often conditioned by the existence of certain types of insurance. Thus ensuring encourages the development of international trade.
  - vi. Granting discounts in premiums, and preventive measures to protect against fire, injury at work, etc., insurance companies affect the prevention and reduction of losses of the insured or of society as a whole.

### ***Pension fund and capital market***

World Bank (2010) in their report submitted that, the long term aim of financial policy in Africa should be to strengthen the capital markets sufficiently to ensure that they become effective and efficient providers of finance for the necessary infrastructural and other essential long-term investment funding needs of the real economy. In Nigeria pension business has undergone series of reformation, and the last one experienced by the industry was 2014. Pension funds are subjected to regulatory requirement to allocate a large fraction of their funds domestically, and given the large size of their funds, they are expected to invest largely in the capital market, and diversify risk as much as possible within the economy. Therefore, relative to other institutional investors, pension funds are thought to be the ones which contribute the most to the development of domestic capital markets (Raddatz and Schmukler, 2008). The strength of the relationship between pension fund assets and capital markets development differs between countries and the level of financial development is pointed out as the likely cause (Enache, Miloş & Miloş, 2015).

In any developed and developing economy growth sustainability of the financial sector is the function of considerable augmentation of the supply of long-term securities on offer through a sound capital markets. The growing presence of institutional investors in financial markets is one of the forces that influences the way in which market liquidity is provided and sustained (Dezelan, 2001). Given the increase of the private pension fund industry, the role of the pension funds in fostering the development of local capital markets becomes more important, contributing to the economic growth and financing of the real economy (Enache et al, 2015). Blake (2003) asserted that the presence of a well-developed financial market is a feasibility precondition for the creation of a strong pension system. Blake (2003) observed that for

effective delivery of pension, financial instrument and investment strategies are more germane than the nature of either the financial markets (i.e. their depth, breadth, resilience and microstructure) or the financial institutions (fund managers and life assurers respectively).

### ***Theory of capital and investment***

Irving Fisher's theory of capital and investment was introduced in his *Nature of Capital and Income* (1906) and *Rate of Interest* (1907), although it has its clearest and most famous exposition in his *Theory of Interest* (1930). Of concern is what he called his "second approximation to the theory of interest" (Fisher, 1930), which sets the investment decision of the firm as an inter-temporal problem. In his theory, Fisher assumed (note carefully) that all capital was circulating capital. In other words, all capital is used up in the production process, thus a "stock" of capital  $K$  did not exist. Rather, all "capital" is, in fact, investment.

The second part of the separation theorem effectively claims that the firm's financing needs are independent of the production decision. To see why more clearly, we can restate this in terms of the Neoclassical theory of "real" loanable funds set out by Fisher (1930). The demand for "loanable funds" equals desired investment plus desired borrowing of borrowers whereas the supply of "loanable funds" equals desired savings minus desired investment of savers. Note the condition that for total investment to be equal to total savings, then the demand for loanable funds must equal the supply for loanable funds and this is only possible if the rate of interest is appropriately defined. If the interest rate was such that the demand for loanable funds was not equal to the supply of it, then we would also not have investment equal to savings. Thus, in Fisher's "real" theory of loanable funds, the rate of interest that equilibrates supply and demand for loanable funds will also equilibrate investment and savings.

### ***2.2.7.2. Modern Theory of Financial Intermediation***

Merton and Bodie (1995) developed a theory called modern theory of financial intermediation which comprises traditional theory and the changes in financial environment. The modern theory of financial intermediation emphasizes six core functions of insurance to include: provision of means for clearing and settling payments to facilitate exchange of goods and services; provision of mechanism for pooling resources; resources allocation; risk management; provision of price information to help in coordinating decentralized decision making in various sectors of the economy and provision of means to tackle the problem of moral hazard, physical hazard and information asymmetry. For the purpose of this study, the enumerated functions by Merton and Bodie (1995) could be expressed as resources accumulation, resource allocation, managing various risks and facilitation of exchange. It is by realizing these functions that

the life and non life insurance companies contributes to economic growth.

### ***The Capital Asset Pricing Model (CAPM)***

The CAPM was introduced by William Sharpe in the 1960s and is similar to the MPT. It is based on the construct that the return on shares (dividends plus capital gains) are generally higher but subject to more variation than return achieved on government securities. The minimum return that investors expect on a currency is based on the yield on government securities. Under this theory, a market risk premium is explained as “the excess return over the risk-free rate demanded by investors to hold a highly diversified portfolio of assets”. If an individual share has the same risk profile as the market as a whole, the required return on that share is exactly the same as the market portfolio return. If pension fund managers follow the CAPM formula, they are more likely to receive higher return on their investments.

### **Research Methodology**

The population of the study constitutes all the insurance and pension companies quoted on the Nigerian Stock Exchange, because the study has to do with the contribution of both the insurance and pension companies to the Nigeria capital market. The population of the study was all the listed insurance and pension companies on the Nigeria Stock Exchange for the period 2000-2017. The Central bank of Nigeria provided economic growth figures for the same period. There are 58 listed insurance companies on the Nigeria stock exchange market.

### ***Measuring Instrument***

The measuring instrument used for quantitative analysis of the secondary data sourced for this study, were sourced mainly from different series of secondary sources, which includes Nigeria Stock Exchange commission, Nigeria Stock Exchange Annual Report and Account (various issues), and Central Bank of Nigeria Statistical Bulletin.

### **Model specification**

For this study multiple linear regression analysis is to be employed, and the model for this analysis is:

$$Y = a_0 + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_nx_n$$

Where  $a_0$  and  $b_i$  are the model parameters. The basic assumption here is that effect of each independent (explanatory) variable is not dependent on the other independent variables, but their combine effects is sum of independent effects on the control variable.

## Presentation of Data

The tables were used to analyze the data while regression analysis technique was used to test the hypotheses formulated for this study. Critical assessments of how life insurance premium, pension fund, and inflation have really affected the capitalization of Nigeria capital market are presented. The first section of this analysis provides summary statistics of the variables. The second section checked the correlation and multiple linear regression assumptions in respect of the study variables. While the third section analyses the effect of the explanatory variables (LLIP, INF, & LTIV) on MCAP of the Capital Market in Nigeria. In order to ensure thorough comprehension of this work, the various data collected for this study were analyzed sequentially to the stated hypothesis.

## Descriptive Statistic

Descriptive statistics test was conducted in this study using E-view software version 9, in order to give the audience more understanding about the study variables that are being analyzed. This is because it deals with the presentation of numerical facts, or data, in either tables or graphs form, and with the methodology of analyzing the data. Descriptive statistics is derived from statistical analysis before another test performed using multiple linear regression analysis (Djoko, Eni, and Sri, 2009). Therefore, descriptive analysis was used to produce mean, range of scores (Minimum & Maximum), standard deviation, skewness and kurtosis for each variable of the study.

**Table 1. Descriptive Analysis for the study**

	MCAP <sub>3</sub>	INF <sub>2</sub>	LLIP <sub>3</sub>	LTIV <sub>3</sub>
Mean	5.31E+11	6.26E+11	2.72E+10	2.28E+11
Median	3.66E+11	5.52E+11	1.44E+10	2.73E+11
Maximum	2.38E+12	2.38E+12	8.04E+10	5.06E+11
Minimum	1.35E+10	2.85E+10	26927790	2.52E+10
Std. Dev.	6.27E+11	6.42E+11	2.56E+10	1.65E+11
Skewness	1.906628	1.508543	0.901351	0.036567
Kurtosis	6.454741	4.956040	2.587476	1.537245
Jarque-Bera	15.44442	7.541860	1.994946	1.251251
Probability	0.000443	0.023031	0.368810	0.534927
Sum	7.44E+12	8.76E+12	3.81E+11	3.19E+12
Sum Sq. Dev.	5.10E+24	5.36E+24	8.52E+21	3.56E+23
Observations	14	14	14	14

Source: Researcher 2019



Table 1 indicates that on the average, during the period of the study the MCAP is about ₦531, and the maximum and minimum values of MCAP were 2.38 and 1.35 respectively. This indicates that the most profitable capital market earned 2.38% of net income from one hundred naira of stock investment. While INF, LLIP, and LTIV have a mean of ₦626, ₦272, and ₦228 respectively, Life insurance total investment (LTIV) has the lowest standard deviation of 1.65 signifying its high contribution to the performance of the capital market in terms of economic growth. Followed by life insurance premium (LLIP) with 2.56, and finally inflation rate (INF) has the highest standard deviation of 6.42 which indicates that it contributes the lowest to the capital market.

**Correlation Analysis**

This research work used correlation analysis to ascertain the relationship between the dependent variable (MCAP) and set of independent variables (LLIP, INF, and LTIV). Correlation analysis performed in this study was to show relationships among the variables selected for the study, which enables for the determination of the independent variables on the dependent variable. Correlation measures the degree of relationship between two or among many variables. Correlation coefficient, (r) is the statistic which measures the relationship between the ranges of -1 to +1. A correlation of +1 means direct perfect relationship, while -1 means perfect indirect relationship and 0 means no relationship between correlated variables, i.e dependent and independent variables. This was carried out with the use of E-view 9.

**Table 2**

Covariance Analysis: Ordinary

Date: 08/21/19 Time: 10:22

Sample: 3 16

Included observations: 14

Balanced sample (listwise missing value deletion)

Covariance				
Correlation				
Probability				
Observations	CAP3	LLIP3	LTIV3	INF2
CAP3	3.65E+23			
	1.000000			
	-----			
	14			

LLIP3	7.41E+21	6.09E+20		
	0.497748	1.000000		
	0.0701	----		
	14	14		
LTIV3	6.41E+22	3.47E+21	2.54E+22	
	0.665861	0.882601	1.000000	
	0.0093	0.0000	----	
	14	14	14	
INF2	1.34E+23	7.33E+21	7.21E+22	3.83E+23
	0.357933	0.479781	0.730729	1.000000
	0.2089	0.0825	0.0030	----
	14	14	14	14

- i. Correlation test in table 2. above shows that market capitalization has a weak and positive correlation with life insurance companies' premium in Nigeria with the value of ( $r=0.497748$ ,  $p=0.0701$ ,  $obsv=14$ ) this indicates that there is no significant relationship between market capitalization and life insurance companies' premium in Nigeria since the P-value is greater than 5% ( $p \leq 0.0$ ) level of significant.
- ii. Again, the correlation analysis in table 2. above shows that market capitalization has positive correlation with life insurance total investment (LTIV) in Nigeria with the value of ( $r=-0.665861$ ,  $p=0.0093$ ,  $obsv=14$ ) this reveals that there is significant relationship between market capitalization has positive correlation with life insurance total investment (LTIV) in Nigeria since the P-value is less than 5% ( $p \leq 0.05$ ) level of significant.
- iii. Finally, the Pearson (ordinary) correlation analysis in table 2. above further reveals that very weak and positive relationship exists between inflation rate and market capitalization of capital market with the value of ( $r=-0.357933$ ,  $p=0.2089$ ,  $obsv=14$ ) this means that although there is weak and positive correlation between capitalization and inflation rate, there is no significant correlation between the two variables, since the P-value is greater than 5% ( $p \leq 0.0$ ) level of significant.

### Multiple Regression Analysis

The multiple linear regression models are an extension of a simple linear regression model that incorporates two or more explanatory (independent) variables in a prediction equation for a response to (dependent) variable. It has been noted in research that since Cohen's 1968 seminal article, multiple

regression analysis has become increasingly popular in both basic and applied research journals (Hoyt, Leierer, & Millington, 2006). Therefore, multiple regression examines the relationship between a single outcome measure and several predictor or independent variables (Jaccard, Guilamo-Ramos, Johansson, & Bouris, 2006). In this study multiple regression analysis was conducted via the use of E-views 9, and examines the relationship between the dependent variables (CAP) and independent variables (LLIP, LTIV, INF). The decision rule for regression is that if the p value is less than the alpha ( $\alpha$ ) value at 5% (0.05) level of significance we reject the null hypothesis ( $H_0$ ) and if otherwise we do not. Therefore, the regression model involves the following variables:

$$: LMCAP = a_o + LLIP_{\beta_1} + INF_{\beta_2} + LTIV_{\beta_3} + \mu \dots \dots \dots (1)$$

Where:

LCAP= logged of Capitalization of Nigeria capital market

INF= inflation rate in Nigeria

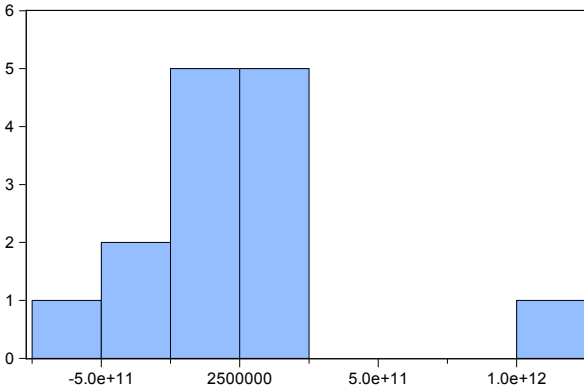
LTIV= logged of Total Investment of insurance companies in Nigeria

LLIP= logged of life insurance premium in Nigeria

**Normality Test**

Multiple regressions assume that variables have normal distributions (Osborne and Waters, 2002). The examination of the normal distribution of the data of the study is one of the fundamental requirements for linear regression analysis between the study variables (Khalifa and Zurina, 2013). Normality tests are used to determine whether a data set is well-modeled by a normal distribution or not, or to compute how likely an underlying random variable is to be normally distributed (Gujarati, 2009). Generally, sample data sets are often skewed to the right for various reasons, and if we cannot normalize the data we should not compare means (more on normalizing data sets later). In other words, in order to be consistent we need to formally test our assumptions of normality.

### Normality Test



Series: Residuals	
Sample 3 16	
Observations 14	
Mean	-5.67e-05
Median	-1.30e+10
Maximum	1.18e+12
Minimum	-5.73e+11
Std. Dev.	4.00e+11
Skewness	1.653338
Kurtosis	6.631662
Jarque-Bera	14.07179
Probability	0.000880

Based on the results shown below, the p-values (0.000880) is less than 0.5%, and is insignificant for the model, therefore, researcher reject the null hypothesis, which says the residual value is normally distributed. Therefore, there is normality problem in the data used for this study. The data need to be used this way, to avoid bias.

### Heteroscedasticity Test

Heteroscedasticity test aims to test whether the regression has difference in variance from the residue between observations (Djoko, et al, 2009). This is because in a linear regression model, we assume the error term has a normal distribution with mean zero and variance of , which is called homoscedasticity (Paskah, 2007). But when the error term does not have constant variance, we call it heteroscedasticity. The Heteroscedasticity can occur if there are subpopulation differences or other interaction effects

**Table 3**

Heteroscedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.804293	Prob. F(3,10)	0.0944
Obs*R-squared	6.396626	Prob. Chi-Square(3)	0.0938
Scaled explained SS	9.189702	Prob. Chi-Square(3)	0.0269

Test Equation:

Dependent Variable: RESID<sup>2</sup>

Method: Least Squares

Date: 08/20/19 Time: 13:11

Sample: 2002-2015

Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.86E+22	1.48E+23	-0.397025	0.6997
INF2	-4.85E+11	2.27E+11	-2.133385	0.0587
LLIP3	-2.12E+13	8.27E+12	-2.560200	0.0284
LTIV3	4.77E+12	1.65E+12	2.899605	0.0158
R-squared	0.456902	Mean dependent var		1.49E+23
Adjusted R-squared	0.293972	S.D. dependent var		3.66E+23
S.E. of regression	3.08E+23	Akaike info criterion		111.2407
Sum squared resid	9.48E+47	Schwarz criterion		111.4233
Log likelihood	-774.6852	Hannan-Quinn criter.		111.2238
F-statistic	2.804293	Durbin-Watson stat		2.206410
Prob(F-statistic)	0.094417			

Following the benchmark probability level of 0.05, we observed that the probability values of the F-stat of white Heteroscedasticity are greater than 0.05 critical values (i.e. Prob of F-stat 0.05 critical value). Implying that the variances of the error terms are Homoscedasticity in nature that is the means and variance of the series are not the same over period and this is in agreement with the basic OLS assumption of Homoscedasticity. This revealed that the model is significant and the variables are well distributed, we therefore fail to reject  $H_0$  that there is no heteroscedasticity. Since the probability of the F-statistics of Ramsey reset test is 0.094417 > the P-value 0.5 critical value, we failed to accept the alternative hypothesis  $H_0$ , which states that the model is well specified and stable for prediction and confirm that the model is not good

and normal for prediction.

### Serial Correlation Test

**Table 4**

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.037632	Prob. F(2,8)	0.1927
Obs*R-squared	4.724840	Prob. Chi-Square(2)	0.0942

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 08/20/19 Time: 13:13

Sample: 2002-2015

Included observations: 14

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.25E+10	2.00E+11	0.112769	0.9130
INF2	-0.237315	0.343288	-0.691302	0.5089
LLIP3	-7.418805	11.82140	-0.627574	0.5478
LTIV3	1.408733	2.364373	0.595817	0.5678
RESID(-1)	-0.278285	0.320684	-0.867787	0.4108
RESID(-2)	-0.610300	0.309496	-1.971914	0.0841
R-squared	0.337489	Mean dependent var		-5.67E-05
Adjusted R-squared	-0.076581	S.D. dependent var		4.00E+11
S.E. of regression	4.15E+11	Akaike info criterion		56.64005
Sum squared resid	1.38E+24	Schwarz criterion		56.91393
Log likelihood	-390.4804	Hannan-Quinn criter.		56.61470
F-statistic	0.815053	Durbin-Watson stat		2.269180
Prob(F-statistic)	0.570909			

Having seen the Breusch-Godfrey first order serial correlation test result, it revealed that the probability value of the F-statistic of LM test is  $0.1927 > 0.05$  critical value, we failed to reject  $H_0$  that the series are not serially correlated and the model is significant. This assertion is in line with the OLS assumption of serial correlation.

## Analysis Result between MCAP and Explanatory Variables

**Table 5**

Dependent Variable: LMCAP3

Method: Least Squares

Date: 08/20/19 Time: 13:04

Sample (adjusted): 2002-2015

Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.34E+11	2.19E+11	-0.612867	0.5536
INF2	-0.557680	0.336707	-1.656274	0.1287
LLIP3	-20.41486	12.26581	-1.664371	0.1270
LTIV3	6.893585	2.439996	2.825244	0.0180
R-squared	0.591918	Mean dependent var		5.31E+11
Adjusted R-squared	0.469493	S.D. dependent var		6.27E+11
S.E. of regression	4.56E+11	Akaike info criterion		56.76605
Sum squared resid	2.08E+24	Schwarz criterion		56.94864
Log likelihood	-393.3624	Hannan-Quinn criter.		56.74915
F-statistic	4.834960	Durbin-Watson stat		2.226369
Prob(F-statistic)	0.024865			

The relative statistics INF, LLIP, LTIV, Ordinary Least Squares model of Inflation rate (INF) is not statistically significant to the Market Capitalization (LMCAP), as the estimated value of  $\beta_1$  is -0.557680. This shows that there is a decrease relationship between Inflation rate (INF) and Market Capitalization (LMCAP). That is, a relative change in  $\beta_2$  that is Inflation rate (INF) will result in about -0.558 decrease in Market Capitalization (LMCAP) which is negative relationship. The estimated value of  $\beta_2$  is -20.41486. This shows that an inverse relationship between Life insurance premium (LLIP) and Market Capitalization (LMCAP). That is, a relative change in Life insurance premium (LLIP) will result in about -20.41 decreases in Market Capitalization (LMCAP), this could be as result of many assured not paying their premium as at when due, as it is agreed during the formation of the life insurance contract, and this will invariably reflected in the amount of premium that will be available to be invested into the capital market by the life insurance companies. And finally, the estimate of  $R^2$  is 6.893585. This implies correspondent relationship among Total insurance investment (LTIV) and Market Capitalization (LMCAP). However, a relative change in Total insurance investment (LTIV) will account

for 6.89% increase in Nigeria Market Capitalization (LMCAP).

Investigating the overall significance of the model, the R-square is 0.591918, implying that the coefficient of determination ( $R^2$ ) is statistically significant at 59.2% which adjudge the model as accurate and highly fitted. The adjusted R-square (ADJR2) indicates that about 0.469493 or 46.9 % variation in the endogenous variable can be explained by the exogenous variables while 53.1% is accounted for error and other economic policies and structural change over time.

### **Summary of Findings**

Insurance companies in Nigeria remain one of the important components of financial services in Nigeria. Their role in enhancing economic development and stimulating economic growth cannot be over emphasized. Since insurance sector has links to sectors such as industrial, transportation, agriculture, mining, petroleum and trade both locally and internationally, its relevance to general human activities has continued to grow for all ages as all categories of risks increase. Therefore, this study specified an empirical framework to investigate the analysis of insurance investment on capital market in Nigeria. This study used secondary data during the period 2002-2015 and the sample of 14 years. Descriptive statistics, regression analysis, and correlation analysis were performed to describe how insurance investment has really impacted capital market in Nigeria. Hence, the summaries of findings for this study are as follow:

- i. The results of the descriptive analysis of the study show that there is a total variation in the mean of dependent variables market capitalization and the set of independent variables (inflation, total insurance investment, and life insurance premium).
- ii. The results of the regression analysis of the models show that the total variations in the dependent variable (LMCAP) are being explained by the set of independent variables (INF, LLIP, & LTIV).
- iii. The regression line of the models shows that set of independent variables (Inflation, Total Insurance Investment, and Life Insurance Premium) has significant impact on the dependent variable (LMCAP).
- iv. The regression line of the models shows negative relationship between Inflation and Life Insurance Premium and dependent variable (LMCAP)
- v. The regression line of the models shows positive relationship between Total Insurance Investment and dependent variable (LMCAP)
- vi. The study has been able to find out and established by the correlation analysis that there is positive relationship between dependent variables (LMCAP) and the set of independent variables (INF, LLIP, & LTIV) selected for the study.



## Discussion of Findings

To test for the significance of the individual parameter, we check if the probability value of  $t$ -stat for the coefficient of the regression parameters ( $H_1$ ) is less than the 0.05 at 5% critical value, we accept alternative hypothesis ( $H_1$ ) and conclude that they are statistically significant to the Endogenous variable (LMCAP) otherwise is not significant. Based on these arguments, INF, LLIP, & LTIV are not statistically significant to the market capitalization (LMCAP). The result also confirm that the model has no presence of first order serial auto correlation as the DW-test statistic (2.23) as shown in regression table, fall within the interval of rule of thumb 2.0 to 4.0 based on the concept of DW test statistics. The value of F-statistics is 4.834960 and the probability associated with it is (0.024865) which is less than 0.05 at 5% level of significance. This means that there exists statistical significance between independent variables (INF, LLIP, & LTIV) and market capitalization (LMCAP).

The hypotheses to be tested for the analysis of this study are as follow:

### **Hypothesis 1**

*Life insurance premium has no significant impact on the capital market in Nigeria.*

**Table 5** above shows that the  $t$ -stat value between life insurance premium (LLIP) and market capitalization (MCAP) is greater than 0.5% level of significant absolutely, therefore, we failed to accept alternative hypothesis ( $H_1$ ), and conclude that there is no significant relationship between the life insurance premium and market capitalization in Nigeria within the period when this study is carried out.

### **Hypothesis 2**

*Insurance investment has no significant effect on the capital market in Nigeria.*

**Table 5** above shows that the  $t$ -stat value between insurance investment (LTIV) and (MCAP) is greater than 0.5% level of significant absolutely, therefore, we failed to accept alternative hypothesis ( $H_2$ ), and conclude that Insurance investment has no significant effect on the capital market in Nigeria as at the period when this research is carried out.

## Implication of Findings for Economic Growth

The implication of the explanatory variables is to tell their real effect on capital market in Nigeria. The inflation positively related to MCAP but not significantly affecting each other, this implying that inflation rate in the economy would have negative impact on the capital market performance. This is so as it will affect the purchasing ability of individual and institutions.

Secondly, life insurance premium is positively related to MCAP but not significant to each other. The implication of this is that there has low

investment of life insurance premium in the capital market, this could be as a result of non-payment of premium properly by the insuring public that could have propel their investing ability, and will in turn affect the contribution of the capital market into the GPD of the country. Also other total insurance investment is positively related to MCAP, and they are significant to each other. This implies that an increase in total insurance investment (LTIV) will boost the performance of Nigeria capital market compared to other independent variables considered for this study.

### **Conclusions**

From the regression analysis the study has provided evidence on the three independent variables; inflation rate, total Insurance investment, and life insurance premium in explaining and predicting performance of capital market in Nigeria. The study concluded that the three variables have not demonstrated a significant role in influencing the capital market performance in Nigeria within the period captured for the study. The study documents a non-significant relationship between the independent variables (INF, LTIV, & LLIP) and dependent variable (MCAP). This study concludes that insurance companies in Nigeria should be encouraged to invest more of their funds into the capital market, as this will invariably influence the contribution of the market to the economic growth. This is so important because high volume of transaction is an important factor in determining the magnitude of trading of shares in the capital market and it goes a long way in improving the performance of the market and as well increases the efficiency of the market which invariably improves the economic growth of the country.

### **Recommendations**

Based on the findings of the study and the conclusions made, the following recommendations were made:

- a) To increase the performance of Nigeria capital market, the government should implement more effective laws to ensure an increase in the investment volume of insurance companies and other financial institution in the capital market.
- b) Since market capitalization depends on the number of outstanding shares and the stock price, insurance companies and other financial institutions should ensure an increase in the number of issued shares to boost the contribution of the capital market to the economy.
- c) To encourage new issues, the stakeholders should increase the minimum equity capital requirements for companies other than banks, insurance companies and other financial institutions.
- d) Government and stakeholders should encourage merger and consolidation, discriminatory income tax in favour of public quoted companies and

aggressive enlightenment program to increase awareness of the benefits of investing in the stock market and seeking quotation at the stock exchange market.

- e) More foreign investors should be encouraged to participate in the market, maintaining state of the art technology like automated trading and settlement practices, electronic fund clearance.
- f) The government should invest more and develop the nation's infrastructure in order to create an enabling environment for financial businesses to grow and for productivity and efficiency to thrive which will bust economic activities.

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