EFFECT OF INSURANCE RECEIVABLES ON ECONOMIC GROWTH IN NIGERIA

ALAMBA, Chukwuma Samuel
Department of Business Administration
Michael Okpara University of Agriculture, Umudike, Abia State
alambacs@gmail.com

ENYA, Alphonsus Azubuike
Department of Banking and Finance
Michael Okpara University of Agriculture, Umudike, Abia State
enya_alphonsus@yahoo.com

ABSTRACT

The study examined the impact of insurance receivables on Nigeria's economic growth. Specifically, the study examined short-run impact of insurance receivables on economic growth in Nigeria; long-run effect of insurance receivables on economic growth in Nigeria; and causal relationship between insurance receivables and economic growth in Nigeria from 1986 –2021. The study used annual time series data covering the period of 35 years. To ascertain the impact of insurance receivables on economic growth; the study used gross domestic product as a measure of economic growth; insurance investment, life premium and non-life premium as independent variables; inflation rate and interest rate as control variables. The Dickey-Fuller Augmented unit root test, Johansen co-integration test, the Vector Error Correction Model (VECM) and Granger Causality test were employed in the analysis. The result of the Johansen co-integration test shows the existence of long-run relationship among variables. The result of the Vector Error Correction Model shows the existence of short-run and long-run relationship between the variables as the coefficient of the error term is negative and significant at 5% level of significance. The result also shows that change in insurance investment, life insurance premium and non-life insurance premium will result to 25.6%, 30.5% and 21.5% change in economic growth respectively. The result of the Granger Causality test shows a bi-directional causal relationship between gross domestic product and insurance investment. Based on the findings, the study concludes that there exists a long run relationship between insurance receivables and economic growth in Nigeria; and recommends that policy makers should consider fostering insurance friendly policies and fiscal regimes that can support the growth of the insurance sector and stimulate economic growth.
Keywords: Economic growth, insurance receivables, life premium, non-life premium,

INTRODUCTION

Insurance is an important and growing part of the financial sector in virtually all developed and developing economies. A well-regulated insurance system significantly contribute to efficient resource allocation through transfer of risk and mobilization of savings and to economic growth (Udaibir et al., 2003). Insurance play crucial roles in achieving sustainable economic growth by facilitating financial security, capital formation, and funding development initiatives, as well as promoting trade and commerce (Authority, 2017). However, despite the vital role insurance industry plays, the sector has been recording poor performance in Nigeria.

In an ever dynamic and uncertain world, insurance firms continuously face risks that emerge in all fields conceivable. It is thus hard, if not impossible, for an insurance firm to triumph unless proper risk mitigation measures are put in place. The emergence of covid-19 pandemic impacted and continues to adversely affect performance of insurance firms globally (Baumann, 2020). Stock returns in various economies, especially in emerging countries have been negatively affected by covid-19 thus negatively affecting the performance of insurance firms (Farooq et al., 2021). In Nigeria, covid-19 has adversely impacted insurance firms through decreased returns from funds invested in financial markets, decrease in premiums and increase in claims in some insurance classes like medical (Authority, 2020).

The insurance industry is one which plays a main role in economic protection from identified risks, they perform different activities from underwriting, insurance policies, collecting premiums and paying claims. Due to these duties the industry holds a huge burden on its shoulders especially in payment of claims. Epetimehin and Ekundayo (2012) and Fashagba (2018) states that insurance manage funds generated by businesses to maximize returns, meet regulatory requirements and other financial constraints.

The insurance industry stimulates economic activities through reduction in uncertainty, optimal utilization of capital and protection of financial wellbeing of individuals, group of individuals or organizations (Loomba, 2004; Cristea et al., 2014). While these roles had worked adequately in other developed economies, the same cannot be said of Nigeria. For example, based on statistics from Nigerian insurers' digest (2020), contribution of insurance to the nation's GDP reduced from 0.41% to 0.31% for 2018 and 2019 respectively. Moreover, the premium per capita income also declined by 30.08% while insurance penetration reduced to 0.6% for the year 2020 (Salami, 2021). This poor performance may not be unconnected to inadequate attention given to core indices of insurance operations and market fragmentation (Cenfri, 2018; Abass, 2019).

Therefore, this study intends to ascertain the contribution of insurance receivables to Nigeria's economic growth. The specific objectives are to examine:

1) The short-run impact of insurance receivables on economic growth in Nigeria.
2) The long-run effect of insurance receivables on economic growth in Nigeria.
3) The causal relationship between insurance receivables and economic growth in Nigeria.

Theoretical Framework

This study is based on portfolio theory (Markowitz, 1952) which holds that risk adverse investors tend to measure the level of risk associated with a financial product before making decisions on product to add to their portfolios; and these investors emphasize risk as a major factor in reward. Portfolio theory has been accepted widely as an important theory dealing in finance or investment. The theory suggested that is not sufficient to concentrate on predictable risk and return of just one stock but to invest in multiple stocks which will help the investor gain benefits of diversification, especially in reduction of risk of the portfolio.

According to Markowitz (1952), no matter how an investor wants to maximize their returns they also wish to minimize their risks, these contrary goals have to be stable against each other when making decisions. The Markowitz portfolio theory is important to this study in the sense that insurance companies tend to accumulate funds from premiums they receive and then reinvest it in securities in other to make a profit and protect themselves in case of heavy losses.

Insurance Receivables and Economic Growth

Insurance companies are contractual financial institutions that specialize in providing insurance cover or protection to customers against insurable risk. They mobilize large amounts of financial resources from premiums paid by policyholders and invest part of the funds to after payment of claims. Insurance firms as institutional investors invest in government securities, loans and housing or real estate development among others (Ojo, 2010). For instance, according to insurance Act of 2003, Section 25(1) "an insurer shall at all times in respect of the insurance transacted by it in Nigeria, invest and hold invested in Nigeria assets equivalent to not less than the amount of policyholders' fund in such accounts of the insurers."

Epetimehin et al. (2012) stated that the importance of insurance investment is to manage funds generated by the business to maximize returns, meet regulatory frameworks and other financial constraints. A well-developed insurance industry is fundamental to a nation's economic development. The financial performance of insurance companies has direct implications on the public, extending from policyholders to shareholders, from company employees to intermediaries, and from regulatory authorities to potential investors (May, 2007). Din et al. (2020) show that a positive significant relationship exists between life insurance and economic growth in the long term and short term.

Apergis and Poufinas (2020) examined the contribution of insurance growth to economic growth by employing the benefit side of the insurance activity, next to the acquisition side. The results of the study provide evidence that gross claims payments and gross operating expenses are significantly and positively related to economic growth. This confirm existing knowledge that gross premium and insurance penetration significantly relate to economic growth.

Nwani and Omankhanlen (2019) studied impact of insurance receivables on economic growth using life premium, non-life premium and insurance investment as proxy for insurance receivables. The result showed that life premium has positive, but insignificant impact on economic growth; non-life premium has negative insignificant impact on economic growth while insurance investment has positive insignificant impact on economic growth.

METHODOLOGY

This research is a quantitative study aimed at investigating the impact of insurance receivables on economic growth in Nigeria. The structural framework of this study is based on ex-post facto research design. This study used time series data obtained from secondary sources such as Nigerian statistical bulletin and Nigerian bureau of statistics (NBS). The data covered the period from 1986 – 2021. In analysing the data, the descriptive statistics, unit root test and cointegration test were conducted to determine stationarity and cointegrating vectors of the variables. In testing hypothesis, the vector error correction model was used. The economic model of the study is stated thus:

GDP = *f* (IV, LP, NLP, INF, INTR) ---------- 1

Where:
GDP = Gross domestic product
IV = Insurance investments
LP = Life premium
NLP = Nom-life premiums
INF = Inflation rate
INTR = Interest rate
Econometrically we have;

$GDP = \beta_0 + \beta_1 IV_t + \beta_2 LP_t + \beta_3 NLP_t + \beta_2 INF_t + \beta_3 LINTR_t + U_t$ --------- 2

Ut = is the error term which captures all the other variables not explicitly covered in the model.
β_1..... β_3= are parameters/coefficients to be estimated
β_1 = intercept

Unit Root Test

The essence of this test is to determine the unit roots properties of the variables to be tested, that is, whether the variables are stationary or non-stationary. However, for the purpose of this study constant and trend was used for analysis as indicated in equation 3-5.

$x_t = \beta x_{t-1} + \varepsilon_t$ 3

$x_t = \beta_0 + \beta 1 x_{t-1} + \varepsilon_t$ 4

$x_t = \beta 1 x_{t-1} + \beta 2_t + \varepsilon_t$ 5

Johansen Co-integration Test

Co-integration is a technique used to determine the existence of a long-term equilibrium relationship in a time series. This study used the Johhansen co-integration test because it is based on a multivariate Vector Autoregression (VAR).

The VAR based model can be written as:

$LogGDP_t = \beta_0 + \beta_1 LogIV_t + \beta_2 LogLP_t + \beta_3 LogNLP_t + \beta_4 LogINF_t + \beta_5 LogINTR_t + \mu_t$ ----- 6

The Johansen co-integration test is based on the Maximum Eigenvalue test upon the hypothesis:
H0: there is no co-integration among variables
If LR max (r) > critical value; the null hypothesis is rejected and
If LR max (r) < critical value, accept null hypothesis.

Vector Error Correction Model (VECM)

Vector error correction model measures the dynamic relationship between variables from short run to long run equilibrium position. It is used to measures the short run relationship between the variables in the model.

Vector Error Correction Model (VECM) is modelled as follows:

$$\Delta LogGDP_t = \alpha_1 + \sum_{t=1}^{k} \delta_{1i} \Delta LogGDP_{t-1} + \sum_{t=i}^{k} \delta_{1j} \Delta LogIV_{t-1} + \sum_{t=1}^{k} \delta_{1k} \Delta LogLP_{t-1} + \sum_{t=1}^{q} \delta_{1l} \Delta LogNLP_{t-1} + \sum_{t=1}^{k} \delta_{1m} \Delta LogInf_{t-1} + \sum_{t=1}^{k} \delta_{1n} \Delta LogINTR_{t-1} + \delta_1 ECT_{t-1} + \vartheta it \quad (7)$$

$$\Delta LogIV_t = \alpha_2 + \sum_{t=1}^{k} \delta_{2i} \Delta LogGDP_{t-1} + \sum_{t=i}^{k} \delta_{2j} \Delta LogIV_{t-1} + \sum_{t=1}^{k} \delta_{2k} \Delta LogLP_{t-1} + \sum_{t=1}^{q} \delta_{2l} \Delta LogNLP_{t-1} + \sum_{t=1}^{k} \delta_{2m} \Delta LogInf_{t-1} + \sum_{t=1}^{k} \delta_{2n} \Delta LogINTR_{t-1} + \delta_2 ECT_{t-1} + \vartheta 2t \quad (8)$$

$$\Delta LogLP_t = \alpha_3 + \sum_{t=1}^{k} \delta_{3i} \Delta LogGDP_{t-1} + \sum_{t=i}^{k} \delta_{3j} \Delta LogIV_{t-1} + \sum_{t=1}^{k} \delta_{1k} \Delta LogLP_{t-1} + \sum_{t=1}^{q} \delta_{3l} \Delta LogNLP_{t-1} + \sum_{t=1}^{k} \delta_{3m} \Delta LogInf_{t-1} + \sum_{t=1}^{k} \delta_{3n} \Delta LogINTR_{t-1} + \delta_3 ECT_{t-1} + \vartheta 3t \quad (9)$$

$$\Delta LogNLP_t = \alpha_4 + \sum_{t=1}^{k} \delta_{4i} \Delta LogGDP_{t-1} + \sum_{t=i}^{k} \delta_{4j} \Delta LogIV_{t-1} + \sum_{t=1}^{k} \delta_{4k} \Delta LogLP_{t-1} + \sum_{t=1}^{q} \delta_{4l} \Delta LogNLP_{t-1} + \sum_{t=1}^{k} \delta_{4m} \Delta LogInf_{t-1} + \sum_{t=1}^{k} \delta_{4n} \Delta LogINTR_{t-1} + \delta_4 ECT_{t-1} + \vartheta 4t \quad (10)$$

$$\Delta LogINF_t = \alpha_5 + \sum_{t=1}^{k} \delta_{5i} \Delta LogGDP_{t-1} + \sum_{t=i}^{k} \delta_{5j} \Delta LogIV_{t-1} + \sum_{t=1}^{k} \delta_{5k} \Delta LogLP_{t-1} + \sum_{t=1}^{q} \delta_{5l} \Delta LogNLP_{t-1} + \sum_{t=1}^{k} \delta_{5m} \Delta LogInf_{t-1} + \sum_{t=1}^{k} \delta_{5n} \Delta LogINTR_{t-1} + \delta_5 ECT_{t-1} + \vartheta 5t \quad (11)$$

$$\Delta LogINTR_t = \alpha_5 + \sum_{t=1}^{k} \delta_{6i} \Delta LogGDP_{t-1} + \sum_{t=i}^{k} \delta_{6j} \Delta LogIV_{t-1} + \sum_{t=1}^{k} \delta_{6k} \Delta LogLP_{t-1} + \sum_{t=1}^{q} \delta_{6l} \Delta LogNLP_{t-1} + \sum_{t=1}^{k} \delta_{6m} \Delta LogInf_{t-1} + \sum_{t=1}^{k} \delta_{6n} \Delta LogINTR_{t-1} + \delta_6 ECT_{t-1} + \vartheta 5t \quad (12)$$

Granger Causality Test

The Granger Causality test/Block Exogeneity Wald was used to determine the causal relationship between the variables. To determine the causal effect between GDP, insurance investment, life insurance premium, non-life insurance premium, inflation rate and interest rate, one of each the variable will be positioned as a dependent variable against the other variables; then the p-value and 0.05 critical value will be compared. The causality relationship can be in three forms, these are unidirectional causality, bidirectional causality and no causality.

DATA ANALYSIS AND RESULT DISCUSSION

Table 1: Result of descriptive analysis of variables

Variable	Mean	Max.	Min.	Std. Dev.	Skewness	Kurtosis	Jarque Bera	Prob	Obs.
LGDP	46.74	159.09	42.16	79.41	1.21	3.16	7.43	0.3473	35
LINV	11.66	15.96	12.71	2.28	0.68	4.20	5.56	0.1257	35
LLP	10.34	10.57	10.03	2.10	0.42	3.19	7.83	0.0994	35
LNP	10.35	10.71	9.03	2.12	0.11	1.89	3.91	0.6551	35
LINF	10.22	10.50	8.22	2.08	0.06	1.44	2.36	0.1672	35
LINTR	17.39	10.79	7.34	2.14	0.71	1.64	4.33	0.0852	35

Source: Authors computation using E-view 9.0

Table 1 shows the result of descriptive statistics of the dependent variable and disaggregated independent variables. The result shows that LGDP has the highest mean value of 46.74 while LINF has the lowest mean value of 10.22 in the variables obtained. Also, the result shows that LGDP has the highest maximum value of 159.09 while LINTR has the lowest minimum value of 7.34 in the variables obtained. The LGDP has the highest standard deviation of 79.41, while LINF has the lowest standard deviation of 2.08 in the variables obtained. This means that low standard deviation indicates that the values tend to be close to the mean of the set while a high standard deviation indicates that the values are spread out over a wider range.

Table 2: Result of unit root test

	Levels		1^{ST} Difference	
Variables	5%CV/T-stat	P-values	5%CV/T-stat	P-values
LGDP	-3.740875/-3.584219	0.3728*	-3.585176/-1.859724	0.0000**
LINV	-3.490569/-3.638946	0.3027*	-3.079612/-4.336172	0.0003**
LLP	-3.926593/-4.385533	0.4439*	-3.886873/-4.688928	0.0002**
LNP	-2.983964/-6.522302	0.7284*	-3.619321/-3.830209	0.0014**
LINF	-3.039285/-3.422076	0.6613*	-3.225213/-3.144776	0.0000**
LINTR	-3.473847/-3.492515	0.4977*	-3.331553/-2.591575	0.0003**

Note: non-stationary (*), stationary (**)
Source: Authors computation using E-view 9.0

The result in Table 2 presents the result of the Augmented Dicker Fuller unit root test conducted to test for stationarity of variables at level and at first difference respectively. The result shows that all log variables (LGDP, LIV, LLP, LP, LIF and LINTR) are non-stationary at level, and as such we cannot reject the null hypothesis of the unit root test. However, the result shows that all the variables are stationary at first difference, as such, we reject null hypothesis, which implies that all variables are stationary at first difference.

Table 3: Result of the Johansen Unrestricted Co-integration Rank Test (Trace statistics)

Hypothesis no. of CE(s)	Eigen value	Trace Statistics	0.05 Critical Value	Prob.**
None*	0.637403	72.57433	56.60966	0.0000
At most 1*	0.361835	44.69207	21.53205	0.0046
At most 2	0.539322	61.48847	8.34944	0.0652
At most 3	0.627716	17.59846	15.69750	0.3916
At most 4	0.408143	23.27531	33.41471	0.0842
At most 5	0.236810	9.18452	29.27430	0.0774
At most 6	0.747841	10.70863	12.37296	0.2665

Trace statistics indicate 2 cointegrating equations at the 0.05 significant level.
Source: Authors computation using E-views 9.0

Table 4: Result of the Johansen Unrestricted Co-integration Rank Test (Max. Eigen)

Hypothesis no. of CE(s)	Eigen value	Max-Eigen Statistics	0.05 Critical Value	Prob.**
None	0.637403	43.61497	24.63077	0.0001
At most 1	0.361835	27.82633	17.42114	0.0031
At most 2	0.539322	29.53358	5.29726	0.3946
At most 3	0.627716	3.06894	11.47453	0.2479
At most 4	0.408143	12.62801	21.88394	0.0612
At most 5	0.236810	2.37368	16.60492	0.4807
At most 6	0.747841	5.41380	3.36914	0.7488

Max. Eigen statistics indicate 2 cointegrating equations at the 0.05 significant level.
Source: Authors computation using E.views 9.0

The result of the Johansen cointegration test is conducted to discover if there are cointegrating vectors within the set of variables. The optimal lag length for the VAR was selected based on the Akaike

Information Criteria (AIC) with endogenous variables (LGDP, LINV, LLP, LNP, LINF and LINTR). The result of the analysis shows that there is two cointegrating equations at 5% level of significance for both the trace statistics and maximum Eigen test. This indicates that we cannot reject the null hypothesis (there is no long run effect of insurance receivables on economic growth in Nigeria) of cointegrating at 5% significance level.

Table 5: Result of the Normalized cointegrating coefficient

LGDP	LIV	LLP	LNP	LINF	LINTR
1.000000	-0.485568 (0.02394)	-0.296463 (0.11725)	0.046332 (0.03697)	0.662813 (0.0452)	0.581703 (0.02478)

Source: Authors computation using E-views 9.0

Based on the result of the normalized cointegrating coefficient as shown in Table 5; insurance investment (IV) and life insurance premium (LLP) have positive relationship with GDP while LNP, LINF and LINTR have negative relationship with GDP. This implies that in the long run insurance investment and life insurance premium will contribute positively to gross domestic product (GDP), that a unit increase in insurance investment will result to a unit increase in GDP for about (0.485568) and a unit increase in life insurance premium will result to a unit increase in GDP for about (0.296463) in the long run. However, a unit increase in non-life insurance premium will result to a unit decrease in GDP for about (0.046332); a unit increase in inflation rate will result to a unit decrease in GDP for about (0.662813); and a unit increase in interest rate will result to a unit decrease in GDP for about (0.581703). Furthermore, the result shows that all the coefficients are statistically significant at 5% level of significance.

Table 6: Result of the Vector Error Correction Model

Cointeg (equ.)	LGDP(-1)	LIV(-1)	LLP(-1)	LNP(-1)	LINF(-1)	LINTR(-1)	C
Coint Eq1	1.000000	0.063214 (0.20681) (0.38468)	0.043921 (0.37418) (0.14871)	0.64217 (0.06312) (0.21984)	0.38816 (0.01239) (0.11806)	0.05873 (0.49717) (0.09189)	-6.645833
ECT	D(LGDP(-1)	D(LIV(-1)	D(LLP(-1)	D(LNP(-1)	D(LINF(-1)	D(LINTR(-1)	
0.453603	0.540356	0.256071	0.304652	0.215980	-0.355960	0.158705	

Source: Authors computation using E-views 9.0

Table 6 presents the result of the vector error correction model. The result shows that the coefficient of the error term is negative and significant at 5% level of significance. The value of ECT is 0.453603 which means that the previous period deviation from the long run equilibrium is corrected in the current period at an adjusted speed rate of 45.4%. The short run coefficients of insurance investment, life insurance premium, non-life insurance premium and interest rate shows that changes in these variables will change GDP by 0.256071 equivalent to 25.6%, 0.304652 equivalent to 30.5%, 0.215980 equivalent to 21.5% and 0.158705 equivalent to 15.8% increase in the short run respectively. Meanwhile, change in inflation rate indicated -0.355960 will lead to 35.5% decrease in gross domestic product in the short run.

Table 7: Summary of granger causality test

Variable		Chi-square	Prob
D(LINV)	DLINV does granger cause DLGDP	0.490312	0.0275
D(LGDP)	D(LGDP) does granger cause D(LINV)	0.448921	0.0004
D(LINF)	D(LINF) does granger cause D(LINV)	3.558084	0.0062
All	0.896642 5	0.66914	

Source: Authors computation using E-views 9.0

The VECM Granger Causality test was used to detect direct exchange of information between the independent variables and economic growth. A variable (insurance receivables) is said to granger cause

another variable (economic growth) if past values of insurance receivables help in predicting the current level of economic growth.

DISCUSSION OF RESULTS

Based on the result of the Johansen co-integration analysis, it was discovered that there exists a long-run equilibrium relationship among the variables. The result of the normalized cointegrating coefficient shows that insurance investment (INV) and life insurance premium (LP) have positive and significant relationship with gross domestic product (GDP) while non-life insurance premium (NLP) have inverse relationship with gross domestic product (GDP). This implies that if there is any economic policy adjustment by Nigerian government in terms of increase in insurance investment and life insurance premium packages, it will affect the gross domestic product. This means that changes in investment insurance and life premium policy will result to a positive significant impact on gross domestic product. The finding of this study is in tandem with the works of Haiss & Sumegi (2008); Akinlo & Apanisile (2014); and Richterkova & Korab (2013).

The result of the vector error correction model in table 6 shows the existence of short run relationship between Gross domestic product (GDP), insurance investment (INV), life insurance premium (LP), and non-life insurance premium (NLP) as the coefficient of the error term is negative and significant at 5% level of significance which is consistent with the findings of Yinusa & Akinlo, (2013) that discovered both short run and long run relationship between insurance sector and economic growth.

The result of the Granger Causality test has provided new empirical insights into the relationship between insurance and economic growth. The analysis has shown the existence of bi-directional causality between gross domestic product to insurance investment and from insurance investment to gross domestic product which is in line with the findings of Peleckiene et al. (2019). This implies a mutual or two-way causal relationship between two variables. Referring to this, the development of insurance investment is as a result of economic growth as well as economic growth being dependent on insurance investment. In addition, the analysis has shown a unidirectional causal relationship from insurance investment to inflation rate. This means that the inflation rate does not play a significant role in the context of insurance investment.

CONCLUSION AND RECOMMENDATION

The result of the vector error correction model shows the existence of short run equilibrium relationship between gross domestic product and insurance investment, life insurance premium, non-life insurance premium, inflation rate and interest rate as the coefficient of the error term is negative and significant at 5% level of significance. Based on the result of the analysis conducted, it was discovered that there is an existence of short run and long run equilibrium effect of insurance receivables on economic growth in Nigeria.

Therefore, the study concludes that there exists a long run relationship between insurance receivables and economic growth in Nigeria. Our findings show that insurance investment and life insurance premium contribute to economic growth; therefore, different states can implement policies depending on their needs and level of insurance market maturity. For example, states that face natural disasters such as earthquakes, flood can promote the importance of insurance in recuperating loss that is the result of a natural catastrophe.

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