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The Contribution of Insurance Investment to Economic Growth in Nigeria; 1980-2014

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Abstract

This study examined the contributions of insurance investment to economic growth of the Nigerian economy for the period 1980 to 2014.Economic growth is proxied by gross domestic product while insurance sector development is proxied by insurance investment. The study usedtime series data generated from Central Bank of Nigeria(CBN), Statistical bulletin and Nigerian Insurance Digest for various years. Augmented Dickey- Fuller and Philip-Peron methods were employed to establish stationarity of the data.Johansen co-integration tests were done to establish long run effect among the variables. It revealed the existence of at least one co-integrating effect at 1% and 5% levels of significance. The study adopted generalized method of moments (GMM) technique for analyses. The result of the study reveals that; insurance sector investment has positive and significant effect on Gross Domestic Product. The study recommends mandatory insurance protection for all investors, not only to encourage them but also as a boost for the economy. Moreover, insurers should diversify their investment portfolio to enable them to guarantee the stability of their return and ability to pay claims.

Keywords: *Contribution, Insurance, Investment, Economic Growth*

Background to the Study

Investment can be any channel into which funds are placed with the assumption of the ability to generate income or profit. It can be addition to real and financial assets in an economy. For economic growth to occur, investment is necessary. Investments are made out of savings. Insurance sector is a major instrument for the mobilization of savings of people, particularly from middle and lower income groups (Monalisa, 2012, Rao and Srinivasulu, 2013). These funds are invested in a way that contributes to the economic development of a nation. The nature and how the investment activity is accomplished influences the overall performance of the insurance companies and carried over onto the economy at large (Haiss and Sumegi, 2006). Investment of insurance fund is very important in economic development of any nation.With relatively small premiums, insurance pull together funds that could be invested for short or long term (Nwinne and Torbira, 2012). Insurance as institutional investor provides a long term source of finance for investment in the economy, thereby contributing to sustainable growth. Insurance serves a number of valuable economic functions that are largely distinct from other financial intermediaries. Through their investment function, insurers facilitate economy of scale in investment and create liquidity, which is found to facilitate economic growth (Njegomir and Stojic, 2010).

Depending on their willingness to bear entrepreneurial risks, insurers can implement their investment activities in two different ways. First, they can act as a simple funds manager, preventing assets from devaluation, fulfilling claims of those entitledand collecting premiums to maintain a satisfactory financial base (Haiss and Sumegi, 2006). Ege and Sarac (2011) posit that the insurance sector is an important component of financial sector investment to meet the demand for savings at the point in bringing together investors and providers for the creation of appropriate funding possible to contribute to economic growth.

According to Nwinne and Torbira (2012), the insurance sector investment does not assert sufficient influence on the growth in the output level of goods and services in the Nigerian economy. Probably, this may be as a result of low level of awareness which has resulted to low level of penetration. Investment is measured using gross capital formation (gross domestic investment) Gross capital formation consists of outlays on additions to the fixed assets of the economy plus the net changes in the level of investment. Investment is measured as a ratio of insurance market investment to GDP.

Economic growth takes place when a society succeeds in increasing its average productivity, defined as the per capita output of goods and services. When sustained growth has occurred over a time and with appropriate policies for savings, investment and more equitable distribution of natural income among a progressively larger percentage of the population, economic growth would follow. This will permit the satisfaction of the basic human needs such as nutrition, medicare, housing, communication and employment. Above this minimal level, further increases in economic wellbeing will permit people to develop their full potentials as human beings (Ibenta, 2005)

Several studies have focused on the contributions of insurance investment on economic growth, although with mixed results such as; Curak, Loncar and Poposki (2009);Ching, Kogid and Furuoka (2010), Agwuegbo, Adewole and Maduegbuna (2010), Nwinne and Toriba (2012) andEze and Okoye (2013). Some of the results reveal positive and significant relationship between insurance investment and economic growth, while others argue that insurance sector investment does not grow the economy.

Moreover, there is need to evaluate the recent effort by the Federal Government to grow insurance sector through the various reforms of the pension and mutual funds. These arguments have created a lull in the knowledge, thus the present study is an attempt to fill the gap and improve on the existing literature.

Objective of the Study

The course of this study and its research, determines whether insurance sector investment has any positive and significant effect on economic growth in Nigeria.

Review of Related Literature

Insurance creates a pool of investable fund through mobilization and investment of fund in the money and capital markets or through direct investment to achieve allocation efficiency in the economy. Insurance companies together with pension and mutual funds invest into stocks, bonds, real estate markets. These investments serve as a protection against unavoidable losses (Agwuegbo, Adewole & Maduegbuna, 2010). Insurers' ability to predict the pattern of their cash flows enables them to play a vital role as institutional investor in the stock market (Chui and Kwot, 2008). As an institutional investors, insurers can invest assets of any maturity be it short term or long term securities.

Insurance companies' investment could be said to be consistent with various theories of investment such as; efficient market hypothesis; loss-aversion theory; rational expectation theory; among others.

Efficient market theory states that the market prices for shares or financial securities capture all the available information about stock or securities. This means that the stock is accurately valued until a future event changes that valuation. From the above, it is observed that efficient market hypothesis is a theory of return and risk. Insurance companies in their investment and intermediation activities, construct portfolios in the process of creating and holding different types of real and financial assets. The portfolio behavior of insurance companies is aimed at combining varieties of assets. As a result, the level of risk is minimized at a given level of return for a better economic performance.

Shittu, (1998) studied the contribution of insurance companies to economic development in Nigeria using descriptive statistics and finds a significant and positive impact of insurance investment on economic growth. He argues that investment provides insurance companies strong asset base for rapid development.

Agwuegbo, Adewole & Maduegbuna (2010) analyze insurance investment using a factor analytic approach and the implication for economic growth in Nigeria. The study concentrated on the role played by insurance companies in enhancing the efficient functioning of the financial system in Nigeria. It shows that insurance companies issue and sell indirect financial securities to the surplus economic units and consequently, purchase other financial securities, which are primary in nature. The study reveals that insurance industry in Nigeria holds a reasonable percentage of the country's total investable fund generated by the capital market. These investments in the stock market serve as a shield for insurance against predictable underwriting losses which are more prominent than their return on investment. These observations suggest that insurance investment activities boost the output level of goods and services in the economy and enhance the performance of the risk management function of insurance, hence stabilizing and growing the economy.

Ching, Kogid & Furuoka (2010) examined the causal effect of life insurance assets on economic growth, using co-integration analysis with quarterly data drawn from Malaysia for the period 1997 to 2008. The regression result seems to suggest that there is a one way relationship flowing from real GDP. This shows that economic growth indicator to life insurance sector such as savings mobilization, risk management and investment do not grow the economy.

Owojori & Oluwagbuyi (2011) investigated the contributions of insurance to economic development of Nigeria. The study used descriptive statistics and Chi-square statistical tool. The result indicates that insurance investment has positive effect on the economic growth of Nigeria, and recommends a cheap means of handling risks to the insured in view of the fact that the principles of large number is brought to bear in the practice and operation of insurance. It also recommends increased participation of individuals and corporate bodies by generating incentive strategies, upgrading infrastructures, enhanced human capital development and creating a favorable climate for insurance investment.

Ege & Sarac (2011) test the role of insurance in economic growth of 29 countries. The study employs fixed effects model for the period of 1999-2008. The study finds that insurance investment affects economic growth positively and significantly.

A study by Monalisain India (2012) reveals that the average Indian spent USD 16.4 on insurance products comprising USD 12.9 for life insurance and USD 3.5 for non-life insurance products, that all good life insurance companies have huge funds accumulated through the payment of small amounts of premium of individuals. It also reveals that these funds are invested in ways that contribute substantially for the economic development of the countries in which they do business.

Haiss & Sumegi (2008) examine the impact of insurance sector in 29 European countries. The study adopts cross country panel data for the period of 1992-2005. Using premium income (to test the effect of the insurance sector as a provider of risk transfer) and investment (to test the effect of the insurance sector as an institutional investor), the authors developed a

modified production function to represent their endogenous growth model. The study shows evidence for a correlation between insurance investment and GDP growth for EU-15 countries with mature financial markets and a short-run connection of non-life expenditure and GDP for the emerging- market-type CEE/NMS countries. The authors argue that insurance needs attention in financial services analysis and macroeconomic policy.

Other studies such as Curak, Loncar, & Poposki (2009) adopting Fixed Effects Panel Model, Njegomir and Stojic (2010) using Country Specific Fixed Effects Models, Jordan (2011) tests Variability, Mojekwu, Agwuegbo&Olowokudejo (2011) applies Dynamic Factor Model, Ojo (2012) adopts Fixed Effects Model, and Eze and Okoye (2013) using Error Correction Model all suggest a positive and significant relationship between insurance investment and economic growth.

Methodology

The time serial ex-post-facto and survey designs were used for the study. Secondary data were generated from Insurance Digest and the CBN Statistical Bulletin. The study covers a period of 35 years (1980 to 2014).

Specification of Models

Insurance- investment and economic growth model:
The model of Haiss and Sumegi (2008) is adopted and modified. The model is stated as;
GDP = f (INV)
Where
GDP = economic growth as dependent variable
INV is yearly total insurance investment is used test the effect of insurance sector as institutional investor as explanatory variable.
The model is modified in this study by introducing interest rate. The model is written as,
GDP = F (INV, INT)
The equation becomes:

$$LnGDP_t = b_0 + b_1 LnINV_t + b_2 INT + U_t \quad (1)$$

GDP is the proxy for economic growth
INV is proxy for total insurance sector investments as a percentage of GDP
INT is the control variable as proxy for lending rate in the economy. This control variable is added to capture the reaction of investors to changes in investment decision variable (cost of investment).

b_0 is the intercept, and b_1, and b2 are the coefficients of the regression equation. U is stochastic error term. Ln is natural log. A priori expectation is that $b_1 > 0$ and $b2 < 0$.

Table1: Unit root TestAugmented Dickey-Fuller

Variable	ADF	Integration	Significance
GDP	-8.053394	I(2)	1%
INV	-6.513339	I(1)	1%
INT	-6.433919	I(1)	1%

Source: Author's computation using e-view version 8.1

Augmented Dickey-Fuller indicates that the two variables, investment and interest rate were stationary at first difference and GDP is stationary at second difference. This implied that all variables were stationary at 1% level of significance.

Table2: Co-integration Result Unrestricted co-integration Rank Test (Trace &Max-eigen)

Hypothesized		Trace	0.05	Max Eigen	0.05
No of CE(5)	Eigen value	Statistic	critical .v	Statistic	critical .v
None*	0.424326	37.62136	35.19275	30.11862	22.29962
At most 1*	0.328813	20.50274	20.26184	22.35995	15.89210
At most 2	0.231005	8.142790	9.164546	8.142790	9.164546

Source: Author's Computation using e-view version 8.

Trace test and max-eigen value Indicates 2 co integrating equ (s) at the 0.05 level denotes rejection of the hypothesis at the 0.05 level mackinnon – Haug – michelis (1999) p-values.

Table3: Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.28026	0.706203	18.80517	0.0000
DLINV(-2)	0.338893	0.363261	3.614796	0.0037
DINT(-1)	-0.080781	0.336892	-2.189675	0.0370

R-squared	0.764837	Mean dependent var	12.54019
Adjusted R-squared	0.753183	S.D. dependent var	0.733002
S.E. of regression	0.853305	Sum squared resid	20.38761
Durbin-Watson stat	1.530123	J-statistic	3.200099
Instrument rank	4	Prob(J-statistic)	0.073634

Economic growth equation in table 3 above has statistically significant coefficient for investment and interest rate. For example, 1% increase in investment is capable of contributing o.34% increase in economic growth in Nigeria and 1% decrease interest rate will result to -0.08% decrease in economic growth. This is in conformity with our a' priori expectation and also consistent with the works of Njegomir & Stojic (2011) which revealed that insurance investment positively and significantly related with economic growth both as institutional investor and insurance risk manager. However, Ege & Sarac (2011)finds that investment affect economic growth positively and significantly. The value of R^2shows that the model accounts for at least 75% of the changes in economic growth while the remaining 25% is accounted for by other factors not included in the model. The Durbin-Watson shows that our model is free from auto correlation.

Conclusion

The study examines the contribution of insurance investment on Economic Growth of Nigeria from 1980 -2014. After establishing the unit root status of the variables in the equation and existence of co- integration, GMM was used in the analysis. Empirical evidence emerges that the coefficient of investment is positive and significant while interest rate is negative and significant. This means that these two variables can contribute significantly to the economic growth of Nigeria. We therefore recommend if possible insurance policy should be mandatory for all categories of investors not only as a protection against losses but also as a boost for economic growth and possibly economic development. It is also advisable that investors should diversify their investments in order to mitigate risks, ensure stability of returns and ability to fulfil their obligation to their clients. These policies will no doubt enhance economic growth and in time to the improvement of the general welfare of the economy.

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Appendix

Data for the Model

	LGDP	INT	LINV
1980	10.30722	5.900000	13.14104
1981	10.35923	6.250000	13.28092
1982	12.23185	7.750000	13.48265
1983	12.20450	7.750000	13.49309
1984	12.13134	9.750000	13.60019
1985	12.12031	9.750000	14.05580
1986	12.21124	9.750000	14.33540
1987	12.23549	15.10000	14.36174
1988	12.22982	13.70000	14.98052
1989	12.30082	21.40000	15.02398
1990	12.37467	22.10000	15.03343
1991	12.49706	20.10000	14.86569
1992	12.48891	22.10000	15.31308
1993	12.51122	23.99000	8.350426
1994	12.52392	15.00000	8.791864
1995	12.52616	13.96000	8.982376
1996	12.54756	13.43000	9.346987
1997	12.59047	7.460000	9.441992
1998	12.61826	9.980000	9.208758
1999	12.65135	12.59000	9.365467
2000	12.70436	10.67000	9.447628
2001	12.78547	9.980000	9.640358
2002	12.97896	16.50000	9.750259
2003	13.07639	13.04000	9.447665
2004	13.17605	13.32000	15.70837
2005	13.23913	10.82000	15.53877
2006	13.29770	8.350000	12.60358
2007	13.36020	8.100000	19.26263
2008	13.41831	11.84000	14.78236
2009	13.48559	12.85000	12.69215
2010	13.56234	5.670000	17.51582
2011	13.63418	4.700000	15.83734
2012	13.69773	7.180000	14.81904
2013	13.70293	5.540000	14.86047
2014	11.39688	9.160000	14.91230

Sources: CBN Statistical Bulletin Various Years

Null Hypothesis: D(LGDP,2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.053394	0.0000
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LGDP,3)
Method: Least Squares
Date: 10/01/15 Time: 19:59
Sample (adjusted): 1983 2014
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGDP(-1),2)	-1.466152	0.182054	-8.053394	0.0000
C	-0.131265	0.085159	-1.541414	0.1337

R-squared	0.683735	Mean dependent var	-0.129121
Adjusted R-squared	0.673193	S.D. dependent var	0.842671
S.E. of regression	0.481730	Akaike info criterion	1.437595
Sum squared resid	6.961912	Schwarz criterion	1.529204
Log likelihood	-21.00153	Hannan-Quinn criter.	1.467961
F-statistic	64.85715	Durbin-Watson stat	0.899932
Prob(F-statistic)	0.000000		

Null Hypothesis: D(LINV) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.513339	0.0000
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LINV,2)
Method: Least Squares
Date: 10/01/15 Time: 20:03
Sample (adjusted)
: 1983 2014
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LINV(-1))	-1.833491	0.281498	-6.513339	0.0000
D(LINV(-1),2)	0.373141	0.172260	2.166153	0.0387
C	0.086966	0.399560	0.217656	0.8292

R-squared	0.713950	Mean dependent var	-0.004684
Adjusted R-squared	0.694223	S.D. dependent var	4.084841
S.E. of regression	2.258799	Akaike info criterion	4.556604
Sum squared resid	147.9631	Schwarz criterion	4.694017
Log likelihood	-69.90566	Hannan-Quinn criter.	4.602152
F-statistic	36.19051	Durbin-Watson stat	1.764986
Prob(F-statistic)	0.000000		

Null Hypothesis: D(INT) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.433919	0.0000
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(INT,2)
Method: Least Squares
Date: 10/01/15 Time: 20:06
Sample (adjusted): 1982 2014
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INT(-1))	-1.159817	0.180266	-6.433919	0.0000
C	0.086438	0.617140	0.140063	0.8895

R-squared	0.571796	Mean dependent var	0.099091
Adjusted R-squared	0.557982	S.D. dependent var	5.332347
S.E. of regression	3.545179	Akaike info criterion	5.427746
Sum squared resid	389.6171	Schwarz criterion	5.518444
Log likelihood	-87.55781	Hannan-Quinn criter.	5.458263
F-statistic	41.39532	Durbin-Watson stat	2.018546
Prob(F-statistic)	0.000000		

Date: 10/01/15 Time: 20:30
Sample (adjusted): 1984 2014
Included observations: 31 after adjustments
Trend assumption: No deterministic trend (restricted constant)
Series: LGDP LINV INT
Lags interval (in first differences): 1 to 3

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.424326	37.62136	35.19275	0.0268
At most 1 *	0.328813	20.50274	20.26184	0.0463
At most 2	0.231005	8.142790	9.164546	0.0779

Trace test indicates 2 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.424326	30.11862	22.29962	0.0260
At most 1*	0.328813	22.35995	15.89210	0.0360
At most 2	0.231005	8.142790	9.164546	0.0779

Max-eigenvalue test indicates 2cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

LGDP	LINV	INT	C
-0.634515	-0.156417	-0.274999	13.68685
-2.679300	0.053605	-0.017839	32.75055
-1.754507	0.408310	-0.102331	18.92914

Unrestricted Adjustment Coefficients (alpha):

D(LGDP)	-0.072334	0.217184	-0.039700
D(LINV)	0.922503	0.050186	-0.634708
D(INT)	1.181309	0.173071	1.202128

Data for the Model

Dependent Variable: DLGDP
Method: Generalized Method of Moments
Date: 10/02/15 Time: 05:06
Sample (adjusted): 1984 2014
Included observations: 31 after adjustments
Linear estimation with 1 weight update
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed
bandwidth = 4.0000)
Standard errors & covariance computed using estimation weighting matrix
Instrument specification: DLGDP DLINV DINT
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.28026	0.706203	18.80517	0.0000
DLINV(-2)	0.338893	0.363261	3.614796	0.0037
DINT(-1)	-0.080781	0.336892	-2.189675	0.0370

R-squared	0.764837	Mean dependent var	12.54019
Adjusted R-squared	0.753183	S.D. dependent var	0.733002
S.E. of regression	0.853305	Sum squared resid	20.38761
Durbin-Watson stat	1.530123	J-statistic	3.200099
Instrument rank	4	Prob(J-statistic)	0.073634

S