



## Financial Intermediation and Growth of the Nigerian Economy: An Insurance Sector Perspective, 1986 - 2018

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### Authors' contributions

*This work was carried out in collaboration among all authors. Author MSI designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AM and IUC managed the analyses of the study. Author IUC managed the literature searches. All authors read and approved the final manuscript.*

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### ABSTRACT

The purpose of this study was to investigate the financial intermediation and growth linkage in the Nigerian Economy with focus on the Insurance sector covering the period 1981 to 2018. Annual time series from Central Bank Statistical Bulletin was employed following an ex-post facto research design and using the Autoregressive Distributed Lag Model (ARDL) for empirical analyses. It was found that insurance premium and insurance claims significantly affected the growth rate of the economy. It is therefore recommended that the intermediation roles of the financial system should be encouraged and due attention given to the hitherto neglected insurance sector to allow for all-inclusive growth.

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## 1. INTRODUCTION

In 1 July 1959, the first central bank of Nigeria (C.B.N) which is the apex bank that controls other financial institution in the country was established. Commercial bank is the oldest of all banking institutions in Nigeria; it dates back to 1892 when it was known as the bank of British West Africa (Now first bank of Nigeria) was established. This was followed in 1917 by the Barchys bank (Dominidu, colonia and overseas) (DCO) (Now union bank in 1933).

On the part of insurance companies, the first insurance companies were 1921 and was named Royal exchange Assurance company, investment companies unit trust, co-operative societies which have its foundation from the establishment of co-operative stores in 1844 in Britain, its origin in Nigeria banks to the eighteen (18) century Bureax De change which was established in 1989 though the decree that the same you and person provident fund. It is the desire of all these financial institutions to see the roles played by this financial institution in our present economic situations.

The Nigerian financial system consists of all the participating financial institutions within the financial market, providing the needed financial services to the entire economy. The financial institutions can further be described as a family of rules and regulations, within different categories of financial arrangements, institutions, agents and the mechanism whereby they relate to each other within the financial sector and with the rest of the world. The Nigerian financial system consists of banks, non-bank financial institutions, the regulatory authorities and even the informal financial institutions. The Nigeria system is a conglomerate of various institutions, market, instruments interact operators within an economy to provide financial services. Such services may include resources mobilization and allocation, financial institution and facilitation of foreign exchange transactions to enhance international trade.

A nation economic financial system is much more than just an intermediary that ensures the allocation of savings to investment. The efficiency of such a system is endogenously achieved if the financial structure of that country's economy promotes optimal use of the resources available for development. It is against

the importance of finance in enhancing economic growth and development especially in developing economies like Nigeria. The Nigeria economy revolves round the hub of an active financial system. This system consists of financial institutions, financial markets, financial instruments and improved rules and regulations that facilitate and regulate the flow of funds from surplus units to the deficit units. By surplus units we mean those economic units whose income exceed their expenditures within a specified period of time; thus facilitating lending within this period (Ighoroje, and Egedi, 2013).

The financial institution is a corporate entity or body that deals in financial claims, is controlled by the government through various regulatory bodies such as the CBN, NDIC and the SEC who supervise their activities. In Nigeria, the financial institution engages in mobilizing funds from the surplus sector of the economy and lends such funds to the deficit sector. In this way, it intermediates between the people with surplus funds and those in deficit and because of this vital role; it is called a financial intermediary (Ogboghro, 2012).

Apart from banks, there are non-bank financial intermediaries, and financial markets that help to meet the financial needs of the economy by playing this crucial role of financial intermediation. The need for financial intermediation arises because some people have surplus funds which they do not want to spend immediately, while others want to spend but do not have money to do so.

Non-bank financial institutions in Nigeria can further be sub-divided into formal and informal financial institutions. The informal financial institutions are those not properly registered and licensed as financial institutions but they play the role of financial intermediation. These informal financial intermediaries in Nigeria include traditional money lenders, and informal savings group known as "esusu" groups and other credit unions. Members of these groups contribute an agreed equal amount which is given to their members in turn, or shared at the end of each year.

The economic growth as a proxy of Gross Domestic Product (GDP) is one of the primary indicators used to gauge the health of a country's economy. It represents the total dollar value of all

goods and services produced over a specific time period looking at the size of the economy. Usually, GDP is expressed as a comparison to the previous quarter or year. For example, if the year-to-year GDP is up 3%, this is thought to mean that the economy has grown by 3% over the last year. The GDP value of Nigeria represents 0.39 percent of the world economy. GDP in Nigeria is reported by the World Bank. The gross domestic product (GDP) measures the national income and output for a given country's economy. The gross domestic product (GDP) is equal to the total expenditures for all final goods and services produced within the country in a stipulated period of time. GDP is expected to have positive impact on stock market returns in Nigeria (IMF, 2012). Despite the removal of restrictions militating against efficient financial intermediation through various financial reforms; lending rate has remained persistently high while credit to private sector has remained low.

For an economy of a country to be functional, the economy must depend on the financial system of that country. The financial systems made up of banks as a central entity along with other financial services providers. The financial system of a country is deeply entrenched in that society and provides employment to a large population. These financial institutions (bank and non-bank) work together with the activities of each other in the intermediation process in an economy. This intermediation process involves fund initialization from the surplus to the deficit units, which in turn speed up or facilitates the process of economic development. An economy is said to be growing or developing when increases in its productive capacity later yield to more production of goods and services. It posited that the expected increase in economic output and a sustained increase in national income per head may not be realized if the financial sector is not sound, healthy and strong (Nwankwo and Ejikeme, 2009).

A well-developed financial sector performs a very critical function such as promoting or enhancing the efficiency of financial intermediation. A well-developed financial sector also enhances investment by identifying and funding good business opportunities, mobilizing savings etc. Given the role that the financial system plays it is essential to the to examine the financial system intermediation role and how that catalyzes the growth of the Nigerian economy looking at 1981 to 2018 as periods of interest.

It is on this premise that this study is set to measure the role of the insurance sector as a financial intermediary in the growth of the economy of the most populous black nation, Nigeria. The insurance sector is under-researched because of the dominance of the banks in Nigeria. A study that x-rays the insurance sector and its contributions to the growth of the Nigerian economy is of great importance. This makes the primary objective of this study to be the evaluation of the financial intermediation and growth of the Nigerian economy from the insurance sector perspective from the period 1986 to 2018.

Apart from the introduction, the other parts of the study are divided thus: sector two is literature review, three presents the methodology, section four presents results and their discussions while section 5 concludes.

## 2. LITERATURE

Merton [1] established a theory known as "modern theory of financial intermediation" which covers conventional theory and the variations in the financial environment. The modern theory of financial intermediation lay more emphasis on six essential functions of insurance: establishment of revenue for settling payments to ease exchange of goods and services; resources allocation; information asymmetry; provision of mechanisms for pooling resources, risk management; provision of price information to help in coordinating decentralised decision-making in several sectors of the economy; establishment of means to tackle the problem of moral and physical hazard.

For this study, the enumerated functions by Merton [1], could be stated as resources accumulation, management of different risks, resource allocation, and the easing of exchange. Through these functions, the non-life and life insurance companies contribute significantly to economic growth and help both families and individuals manage their income risk efficiently. It also helps to mobilise funds (via medium and long-term savings products) that positively increase economic growth [2,3].

Haiss and Sumegi [4] analyse the diverse channels of influence on the insurance sector and economic growth: substitute savings, institutional degrees of influence, risk transfer and investment to the economy. Also, it reveals

that not giving attention to the insurance sector might likely have an adverse impression on the economy [5,6].

Iwedi and Igbanibo [7] paper models the relationship between financial intermediation functions of banks and economic growth in Nigeria using data spanning (1970-2014). Credit to private sector (CPS), banks deposit liabilities (DLS), and money supply (MOS) were used as proxy for bank financial intermediation functions while gross domestic product represents economic growth. The econometric tools of the regression analysis and co integration test were used. The analysis revealed that no short run relationship existence between CPS, DLS and GDP in Nigeria. However, the analysis revealed a long run relationship between bank financial intermediation indicators and gross domestic product in Nigeria.

Sahoo [8] used ARDL and Granger causality approach to examining the role of financial intermediation in Indian economic development from 1982-2012. The study employed variables such as real GDP, the ratio of private sector credit-to-GDP, the rate of market capitalization-to-GDP and the sum of credit to the private sector and market capitalization as a proportion of GDP for its analysis. The outcome of the analysis revealed that both the bank-based and market-based financial deepening have a positive impact on Indian economic growth with banking sector exerting higher influence over the financial market sector. Furthermore, unidirectional causality was found running from private sector credit to real GDP, while no causality was observed between stock market capitalization and real GDP.

Nwaeze, Michael and Nwabekee [9] examined the impact of financial intermediation on the economic growth of Nigeria between the periods of 1992-2011. The study adopted the ex-post facto research design. Time series data for the twenty years period 1992-2011 were collated from secondary sources and the Ordinary Least Squares (OLS) regression technique was used to estimate the hypotheses formulated in line with the objectives of the study. Real Gross Domestic Product, proxy for economic growth was adopted as the dependent variable while the independent variables included total bank deposit and total bank credit. The empirical results of this study shows that both total bank deposit and total bank credit exert a positive and significant impact on

the economic growth of Nigeria for the period 1992-2011.

Oleka, Sabina and Onyeze [10] study the impact of intermediation roles of banks on the performance of the real sectors of the Nigerian economy. The study analyzed published audited accounts of twenty (18) out of twenty-five (25) banks that emerged from the consolidation exercise that took place in 2005 in Nigerian banking industry and data from the CBN Statistical Bulletin of various issues. The study covers an 8 year period (2005-2013). Parametric statistics in forms of analysis of variance-ANOVA, mean, standard deviation, t-test, coefficient of correlation and simple linear regression were used to analyze the data. The study found out that banking sector intermediation has significantly improved the GDP component of the manufacturing sector, hence, has contributed marginally to the overall growth of the real sectors for sustainable development.

McCaig and Stengos (2005) introduced more instrumental variables with a view to establishing a more robust empirical relationship between financial intermediation and economic growth. The study uses a cross country analysis of 71 countries for the period 1960 to 1995. A linear regression model, which defines economic growth as a function of financial intermediation and a set of conditioning variables, was estimated using the Generalized Method of Moments (GMM). While the instrumental variable introduced included; religious composition, years of independence, latitude, settler mortality, and ethnic fractionalization, three conditioning variables were also used. These include; simple sets (initial GDP, and level of education), the policy set (simple set, government size, inflation, black market premium, and ethnic diversity), and the full set (simple set, policy set, number of revolution/ coup, number of assassination per 1000 inhabitants, and trade openness). This study also supports the argument that a positive relationship exist between financial intermediation and economic growth. However, it emphasized that this will be true if financial intermediation is measured by liquid liabilities and private credit as a ratio of GDP, while it will be weaker if it is measured using the Commercial-Central Bank ratio.

Valev [11] investigates the relationship between bank credit and investment and growth in the real economy, using panel data from the 14 economic

sectors. Then, the study found that there is correlation between credit extensions and economic performance. Considering the second set of analysis using data from three (3) core sectors of the real sector, the study equally found positive relationship between bank credit and investment, which would subsequently translate to economic growth.

Ayadi et al. [12] explore the relationship between financial sector development and economic growth across the Mediterranean, using data covering the period of 1985-2009. The study found that credit to the private sector and bank deposits are negatively associated with growth, which in the authors' opinion, portend deficiencies in credit allocation in the region and suggest weak financial regulation and supervision.

Ogunmuyiwa and Ekone [13] examined the impact of money supply on economic growth in Nigeria for the period 1980 to 2006 using Ordinary Least Squares (OLS), Granger Causality test and Error correction Model. The results revealed that although money supply is positively related to growth, the result is however insignificant in the case of GDP growth rates on the choice between contractionary and expansionary money supply.

Nouri and Samimi [14] investigated the impact of monetary policy on economic growth in Iran with a data spanning the period 1974 to 2008 using the Ordinary Least Squares (OLS). Their findings indicated that there is a positive and significant relationship between money supply and economic growth in Iran.

Owolabi [15] examined the effect of money supply and foreign exchange on Nigeria economy with a data covering the period 1988 to 2012 using Ordinary Least Squares (OLS). The result shows that money supply has positive significant impact on economic growth in Nigeria.

### 3. METHODOLOGY

This study employs ex-post facto research design which is a quasi-experimental study to examine how an independent variable presented prior to conducting the study, affects a dependent variable. The reason for the choice of this design is because the variables of the study are uncontrolled as the phenomenon to be studied have already occurred before now. In addition, descriptive and analytical design shall

be added to the *ex-post facto* design because of its complimentary role especially when estimations of quantitative nature are involved. By Source, the data for the study was drawn from the statistical bulletin of the Central Bank of Nigeria for the years 1986 to 2018. By nature, the data are annualized time series which are observations with regular time ordering or frequency. The second characteristic of the data set is that it is secondary in nature. This implies that it came from preexisting sources.

The model for this study follows the fundamental theory of financial intermediation which was firstly formalized and popularized in the works of Goldsmith [16], Shaw [17] and Mckinnon [18]. The theory presents economic growth and development as a function of financial development thus:

$$EG = f(\text{Fin. Dev})$$

Within the context of this work EG which is economic growth is proxied by Gross Domestic Product of the Nigerian economy while Fin. Development is represented by Claims by insurance companies and Insurance Income, stock market. In a more expanded form the functional expression of the basic model for this study appears thus:

$$GDP = f(\text{INCOME}, \text{CLAIMS})$$

The model is rewritten following the structural form as follows:

$$GDP = \gamma_0 + \sum_{n=1}^{t-1} \gamma_1 \text{INCOME}_t + \sum_{n=1}^{t-1} \gamma_2 \text{CLAIMS}_t + \varepsilon_t$$

Where all the variables are as discussed above,

$\gamma_0$ = constant term  
 $\gamma_1, \gamma_2$  are coefficients of the independent variables and provisions for their associated lags.  
 $\varepsilon_t$  is the error term.

Four steps were followed in analyzing our data for the purposes of arriving at the estimates that were used for drawing conclusions in this study.

Under here, the following tests were conducted to confirm that the data used are suitable for the study:

- Descriptive statistics
- Test for stationarity
- Bivariate Correlation Analyses
- Graphing and Charting

Under here the necessary and suitable regression approach such as the Autoregressive Distributed Lag Model were employed to arrive at the estimates used to make inferences. The Dynamism of the ARDL makes it the most ideal for a study such as this.

The following tests were used as post-estimation tests to certify that the estimates used for inference satisfied the assumptions underlying the chosen estimation model. These include:

- Test for goodness of fit of the mode
- Tests for the significance of the overall regression
- Test for autocorrelation

- Test for Heteroscedasticity
- Regression Error Specification Tests (RESET)

#### 4. RESULTS AND DISCUSSION

To provide the empirical evidence upon which our conclusions were based, the data in Table 1 were collected and presented in tabular form thus:

The key statistical averages necessary for showing the basic properties of the variables under investigation are shown in Table 2.

**Table 1. Summary of proxies for the study**

Year	GDPGR	Claims	Income
1981	144.83	74.208	50100.830
1982	154.98	12402.400	1013.674
1983	163	15843.730	486.648
1984	170.38	78.580	254.158
1985	192.27	86.390	191.801
1986	202.44	5629.520	1013.674
1987	249.44	12084.040	67465.560
1988	320.33	76276.110	50100.830
1989	419.2	278.928	11688.251
1990	499.68	1677.282	2445.691
1991	596.04	12084.040	191.801
1992	909.8	386.872	89104.890
1993	1259.07	6110.520	1296.243
1994	1762.81	78.580	673.089
1995	2895.2	109.430	234.050
1996	3779.13	77.704	14519.149
1997	4111.64	39389.160	14519.149
1998	4588.99	49498.930	2445.691
1999	5307.36	278.928	50100.830
2000	6897.48	63.999	195.290
2001	8134.14	86.390	175756.750
2002	11332.25	5629.520	1296.243
2003	13301.56	1315.294	234.050
2004	17321.3	386.872	254.158
2005	22269.98	151.143	11688.251
2006	28662.47	278.928	67465.560
2007	32995.38	151.143	67465.560
2008	39157.88	278.928	234.050
2009	44285.56	1508.882	1013.674
2010	54612.26	12084.040	14519.149
2011	62980.4	1315.294	406.500
2012	71713.94	613.887	486.648
2013	80092.56	74.208	4931.918
2014	89043.62	5923.180	234.050
2015	94144.96	1956.214	126470.300
2016	101489.49	63.999	234.050
2017	113711.63	386.872	191.801
2018	127762.55	1315.294	28981.290

Source; Central Bank Statistical Bulletin 2018

**Table 2. Descriptive statistics**

Variables	Mean	Median	Std .Dev	Skewness	Kurtosis	Jargue-Bera	Ob
GDPGR	27569.37	6102.420	37734.90	1.279906	3.322978	10.54017	38
CLAIMS	7000.775	500.3795	15554.05	3.1817	13.0185	223.0363	38
INCOME	22629.09	1296.243	39708.74	2.2283	7.8677	68.966	38

Source: Extracted from E-Views 10 see Appendix 1

**Table 3. Summary of ADF unit root test**

Variables	ADF	1%	5%	10%	Order of Integration	Prob
CLAIMS	-4.79	-4.23	-3.54	-3.20	1(1)	0.002
GDPGR	-6.32	-5.72	-5.18	-4.89	1(0)	0.01
INCOME	-6.76	-4.23	-3.54	-3.20	1(1)	0.000

\*\*\* \*\*and \*connotes that variables are stationary at 1%, 5% and 10% significance level respectively

**Table 4. Correlation analysis result**

Variable	Correlation	t-Statistic	Probability	GDPGR	CLAIMS	INCOME
CLAIMS				-0.229665	-	-
				-1.415835		
				0.1654		
INCOME				-0.005997	-0.003255	-
				0.035982	-0.019527	
				0.9715	0.9845	

The descriptive statistics presents the measures of central tendency as well as spread of the variables under study. The Skewness which measure symmetry or departure from symmetry and Kurtosis which is a measure of peakedness or flatness of the distribution or series are also shown. The series show departure from normality and have kurtosis in excess of 3 with skewness that are all positive. This normality property shows the variables to be largely financial and economic time series.

#### 4.1 Unit Root Test

Following the basic descriptive statistics, we tested the stationarity of the series to guide us in their appropriate linear combination.

The unit root test results displayed in Table 3 show that GDPGR is stationary at level, while Claims and Income are stationary at first difference. The reported results follow the 0.05

level of significance. The result above justifies the choice of the Autoregressive Distributed Lag (ARDL) model given that it accepts I(0) and I(1) without provision for I(2).

#### 4.2 Correlation Matrix

In concluding our preliminary tests, the bivariate correlational test of the series is reported in Table 4.

It is found that while some of the series share bivariate positive and significant correlation one with another, others share negative and non significant correlation with another. This is evidenced by the fact that their respective correlation coefficients are positive or negative and the probability values of the associated t-statistics respectively significant and non significant by being less than 0.05 while some are higher than 0.05 respectively.

**Table 5. ARDL test results**

Variable	Coefficient	Std Error	T-stat	Pvalue
LOG(INCOME)	508.6423	154.5348	-3.291442	0.01<0.05
LOG(CLAIMS)	650.3832	168.8693	3.851400	0.008<0.05

$R^2 = 99\%$ , Adjusted  $R^2 = 99\%$ ,  $F\text{-stat} = 2057.453 (0.0000)$ ,  $DW\text{-Stat} = 2.3$

As revealed that the Premium collected by insurance company showed significant effect on the growth rate of the Nigerian economy (coefficient of premium collected by insurance company = -508.6423, t-value = -3.291442). This indicates that a unit change in premium collected by insurance companies caused a 508.6 units decrease in GDPGR output in Nigeria. The probability value of  $0.01 < 0.05$  confirms the significance of the result. The coefficient of determination which measures the goodness fit of the model that is the R-square ( $R^2$ ) shows that the independent variables jointly explain about 99% of the total variations in economic growth rate while the remaining 1% is attributable to causal factors not modeled. Durbin-Watson statistic value of 2.3 indicates no serial correlation in the model. Given the t-statistics of premium collected by insurance company (-3.291442) and the probability of t-statistics  $0.01 < 0.05$  being significant. As revealed that the Claims by insurance company showed significant effect to the growth rate of the Nigeria economy (coefficient of Claims by insurance company = 650.3832, t-value = 3.851400). This indicates that a one percent decrease in GDPGR output in Nigeria is due to 0.29% increase in Claims by insurance company. The probability value of  $0.008 < 0.05$  confirms the significance of the result. The coefficient of determination which measures the goodness fit of the model that is the R-square ( $R^2$ ) shows that the independent variables jointly explain about 99% of the total variations in economic growth rate while the remaining unexplained 1% is attributable to other variables not included in the model. Durbin-Watson statistic value of 2.3 indicates no serial correlation in the model. Given the t-statistics of Claims by insurance company (3.851400) and the probability of t-statistics  $0.008 < 0.05$  being significant, we reject the null hypothesis and conclude that Claims by insurance company had a significant effect to the growth rate of the Nigeria economy.

## 5. CONCLUSION

As revealed that the Premium collected by insurance company showed significant effect on the growth rate of the Nigerian economy (coefficient of premium collected by insurance company = -508.6423, t-value = -3.291442). This indicates that a unit change in premium collected by insurance companies caused a 508.6 units decrease in GDPGR output in Nigeria. The probability value of  $0.01 < 0.05$  confirms the significance of the result. The coefficient of

determination which measures the goodness fit of the model that is the R-square ( $R^2$ ) shows that the independent variables jointly explain about 99% of the total variations in economic growth rate while the remaining 1% is attributable to causal factors not modeled. Durbin-Watson statistic value of 2.3 indicates no serial correlation in the model. Given the t-statistics of premium collected by insurance company (-3.291442) and the probability of t-statistics  $0.01 < 0.05$  being significant, we reject the null hypothesis and conclude that premium collected by insurance company had a significant effect on the growth rate of the Nigerian economy.

Premium collected by insurance company showed significant effect on the growth rate of the Nigerian economy with an indication that a unit change in premium collected by insurance companies creates a 508.6 unit decrease in GDPGR output in Nigeria. This can be attributed to the fact that premiums constitute a mop up of funds from the surplus units by the insurers who are financial intermediaries. It is clear that more premium with claims or mobilization of same as loanable funds will mean less money available to engineer growth. More so, the underdevelopment of the insurance sector in Nigeria obviously makes them collect premium without mobilizing enough loans and advances thereby constituting a leakage to the growth inducing funds in the system, Monogbe [19].

Insurance Claims proved to have significant effect on the growth rate of the Nigeria economy. It is evident that a unit change in Insurance Claims causes about 650.4 units positively significant change in GDPGR in Nigeria. Intuitively, the more claims are paid back to policyholders; the more money is made available for diverse productive activities. These findings have reliance on the Goldsmith [16], Shaw [17] and Mckinnon [18] theories of financial intermediation given that claims are payback to the surplus units upon maturity which is a growth driver.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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