

FINANCIAL INCLUSION AND ECONOMIC GROWTH: THE ROLE OF INSURANCE SECTOR DEVELOPMENT

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Abstract

This paper extends the existing literature on financial inclusion by considering the role of the insurance sector. Attaining a desired level of financial inclusion has been a challenging issue confronting stakeholder across the globe. Reduced attention given to the insurance industry has, however, frustrated the financial inclusion target of the authorities, which formed the major focus of this study. Thus, this study investigated the influence of financial inclusion on economic growth by taking cognizance of the role of the insurance sector in Nigeria using the ARDL estimation technique from 1981 to 2018. The empirical results revealed that total insurance premium and non-life insurance premium are positively related to economic growth, while life insurance premium is negatively related to economic growth. However, credit to the private sector performs better and contributes positively significantly to economic growth in Nigeria. However, it is, therefore, important for the monetary authorities to give greater attention not only to the bank financial institutions but to other non-bank financial institutions like insurance, pensions, etc., in order to harness the targeted level of financial inclusion in Nigeria.

Keywords: Financial Inclusion, Insurance, Economic Growth, ARDL, Financial Institutions

JEL Classification: E59, G22, 047, C32

1. INTRODUCTION

Nigeria is a nation of over 200 million people, with an estimated adult population of 99.6 million, which is spread across the 36 states of the federation. According to the Enhancing Financial Innovation and Access (EFInA) 2018 report, a significant proportion of the adult population in Nigeria is financially excluded from accessing formal financial services, with the figure falling from 46 percent in 2010 to 36.8 percent in 2018. Simply put, the level of exclusion remains below the 20% target set by the financial inclusion strategist for 2020. Attaining a reasonable level of financial inclusion has been a policy supported by governments all over the world due to the perceived benefits to the nation's well-being. This has informed the Central Bank of Nigeria's (CBN) decision to develop programs and policies that will achieve the targeted level of financial inclusion in Nigeria. Financial inclusion is, however, an objective that cuts across all the sectors in the financial system, ranging from the banking sector to the insurance industry to pensions, etc., whose contributions are all crucial to the attainment of this goal. Hence, less attention given to one of the sectors could hinder the achievement of the desired level of exclusion. When financial inclusion is discussed, attention is focused solely on the marginalized populations that are excluded from traditional financial services like savings and accessible credit, at the expense of insurance services.

However, financial inclusion encompasses a wide range of financial services in addition to savings and affordable credit. But, consistent disregard for insurance in the financial inclusion objective exposes citizens to the risk of asset loss, financial hardship, and the inability to plan for the future, making them more vulnerable with a spillover effect on their socio-economic growth (Martínez, Pfister, Müller & Schoen, 2019). Because of the complexities of financial inclusion, various stakeholders at the global and local levels have been established with the goal of reducing global financial exclusion by incorporating insurance into the goal. The CBN in 2019 set up some committees in the National Financial Inclusion Governing Committee Meetings, which consist of the Financial Inclusion State Steering Committee (FISSCO) and the four working groups, namely, the Financial Inclusion Channels Working Group (FICWG), the Financial Literacy Working Group (FLWG), the Financial Inclusion Special Interventions Working Group (FISIWG), and the Financial Inclusion Product Working Group (FIPWG). The FIPWG saddled the National Insurance Commission (NAICOM) with the task of promoting financial inclusion in Nigeria via the invention of micro-insurance products aimed at increasing the patronage of insurance policies among households and small-to-medium enterprises (SMEs). Therefore, it is crucial to look at how much Nigeria's recent integration of insurance into the NFIS has encouraged or impeded financial inclusion and economic progress.

Furthermore, the NFIS of 2012 aimed to achieve an 80 percent level of inclusion while simultaneously reducing Nigeria's level of exclusion to 20 percent by 2020. The NFIS in 2012 also targeted reducing the insurance policy exclusion rate of the adult population to 40 percent by 2020, but unfortunately, the level of

inclusion was reduced from 3 percent in 2012 to 2 percent in 2018, leading to a 38 percent variation in the target set by the NFIS. This unencouraged happening in the insurance sector is highly worrisome if, as of 2018, the level of patronage of insurance policies by Nigerians is 1.7% of the total population, while the remaining 97.9 million have no insurance policy, and 77.2 million claims to be unaware of insurance policies in Nigeria. Lin et al., however, opined that the creation of necessary awareness and advisory services increases the level of patronage of insurance policies (Lin, Hsiao & Yeh, 2017); Luciano & Rossi, 2014). Attaining the targeted level of 60 percent inclusion through the insurance policy by the end of 2020 may be a difficult task due to the extremely large variance between the target objectives and the actual results recorded in the insurance industry's level of inclusion. These variations explained by economic indicators lead to the question raised by this study: whether the level of insurance premiums contributes to the level of economic growth in Nigeria's financial system or not, given the recent strategies set by monetary authorities in the country.

Surprisingly, insurance premiums contributed 0.31% of Nigeria's GDP in 2018, compared to other economies such as India, where insurance contributed 3.69% of GDP in 2018. The significance of the insurance industry cannot be overemphasized because of the safety and compensatory roles played by the industry in every economy, household, organization, and government. Insurance has previously been linked to financial inclusion (Agu and Nwankwo, 2015), human development (Datta & Singh, 2019; Balcilar, Gupta, Lee & Olasehinde-Williams, 2018), and economic development (Apergis & Poufinas, 2020; Le, Chuc & Taghizadeh-Hesary, (2019). It is not news that the development of the insurance sector contributes to an economy's economic growth. Hence, the objectives of this study are mainly two. Firstly, instead of investigating only the role of increasing or decreasing insurance premiums in attaining the financial inclusion target via their contribution, we progress by investigating the role of financial inclusion via the insurance industry's development and crediting the private sector for economic growth, which broadens the scope of knowledge. EFINA, 2018, and Pradhan, Rudra-Prakash, Bahmani & Kiran, (2014) assert that affordable credit and accessibility to other financial products like insurance are good yardsticks for measuring the level of financial inclusion in an economy, as opined by EFINA, 2018.

Akanro (2016) mentioned that the insurance industry attracts premiums from the insured, which are transformed into investments, thus stimulating financial inclusion. Increased economic inclusion through savings broadens the economic frontiers of productivity and growth. Productivity expansion would, however, require safety against the inherent risk inherent in the daily activities in the economy, which necessitates the uptake of an insurance policy by every individual, organization, and government in the economy in order to have protection against the potential risk (Agu & Nwankwo, 2015). An increase in the cost of insurance policies promotes overall economic development. This study, however, seeks to unleash the influence of financial inclusion on economic growth via insurance premiums and credit to the private sector using the autoregressive distributed lag (ARDL) approach.

In a nutshell, the result of this study revealed that total insurance premiums and non-life insurance premiums have no significant contribution to economic growth, while life insurance premiums have contributed negatively to economic growth in Nigeria. Moreover, insurance premiums were discovered to have been contributing to Nigeria's GDP at a decreasing rate. Hence, the declining contribution of insurance premiums needs to be urgently addressed in order to achieve the desired level of financial inclusion by the end of the year 2020. Furthermore, crediting the private sector is one of the components of financial inclusion that contributes significantly to Nigeria's economic growth. The outcome of this research will be beneficial to the monetary authorities, banks, investors, and other stakeholders in making decisions. The rest of this research is arranged as follows: The second section is the literature review; the third section deals with methodology; the fourth section deals with results and discussions; and the last section is the concluding part.

2. LITERATURE REVIEW

The influence of financial inclusion on economic growth has been extensively discussed by researchers across the globe. Some studies conclude a positive influence (Kuada, 2019; Datta & Singh, 2019; Iqbal & Sami, 2017), while others are of the opinion that there is an inverse relationship between financial inclusion and financial efficiency (Le et al., 2019). The role of insurance, which is one of the criteria for determining the level of financial inclusion, has also been investigated by researchers. Thus, the role of insurance in economic growth has attracted the attention of researchers and policymakers across the globe, with varying outcomes. Some researchers concluded that insurance is positively related to economic growth (Apergis & Poufinas, 2020; Balcilar et al., 2018), while others believed that insurance has a negative impact on economic growth (Nwani & Omankhanlen, 2019). Pradhan et al. (2014) diverged from the prior trend that it is not only insurance that influences economic growth, but instead, economic growth increases the insurance industry's development. The financial inclusion-growth nexus (using insurance and credit as proxies for financial inclusion in the private sector) remains unanswered.

Financial inclusion is the provision of banking services and credit at an affordable cost to disadvantaged groups (Chhabra, 2015). It should, however, be noted that financial inclusion goes beyond the provision of banking services and credit because it encompasses other financial services like pensions, insurance, etc. Often, when financial inclusion is mentioned, it is limited to banking services and credit at the expense of the insurance sector, which plays a crucial role. However, Singh et al. (2014) conceptualized financial inclusion as the provision of financial services at an affordable rate, ranging from savings, credit, pensions, insurance, etc. Insurance is a legal agreement between the insurer and the insured with the objective of protecting the policyholder against the risk of loss of property (Le et al., 2019). Insurance is, however, linked with financial inclusion and economic growth, which, as a result, will increase insurance penetration, increase the level of financial inclusion, and stimulate economic growth.

An empirical review looked at the impact of financial inclusion on growth in India and discovered that bank branches and loan-to-deposit ratios are positively related to economic growth, while ATMs are negatively related (Iqbal & Sami, 2017). N'dri & Kakinaka (2020) examined the influence of mobile money and financial inclusion on the non-financial welfare of Burkinabe citizens. The empirical findings show that financial inclusion and mobile money immensely contribute to the eradication of poverty. Kuada (2019) analyzed the method through which financial inclusion could be used to eradicate poverty and achieve sustainable growth in sub-Saharan African countries. The study suggested that financial inclusion promotes employment, the development of small and medium enterprises (SMEs), poverty eradication, and sustainable development. (Datta & Singh, 2019) examined the status of financial inclusion across developing and developed nations. The result showed that a high level of financial inclusion has been achieved in developed nations, while a lower level of financial inclusion has been recorded in developing countries. This simply means that people's demand for financial services is greater than what banks are actually providing. The result shows that increasing levels of schooling, salary, orientation, and good health status were found to contribute positively to the level of financial inclusion in an economy. That is, financial inclusion and human development are positively related.

Le et al. (2019) investigated the influence of financial inclusion on financial sustainability and efficiency in Asia. The result shows that financial inclusion is positively related to sustainability but negatively related to efficiency on the Asian continent. The negative influence of efficiency on inclusion should, however, be given necessary consideration. The study (Kabakova & Plaksenkov, 2018) analyzed the determinants of financial inclusion in developing countries. The result shows that socio-demographic, political, technological, and economic factors are the major determinants of financial inclusion, while exclusion is triggered by the absence of social and economic factors. (Morgan & Long, 2020) The findings show that increasing financial literacy increases both savings and financial inclusion in Laos. This implies that people with higher literacy are more included in the financial system than those who have a lower level of literacy. The study (Oz-Yalaman, 2019) examined the influence of financial inclusion on taxation. The empirical findings revealed that an increase in financial inclusion increases income tax, corporate tax, profit tax, and capital gain tax. (Mbutor, 2013) investigated the influence of financial inclusion on monetary policy in the Nigerian economy. The result shows that financial inclusion is positively related to monetary policy in Nigeria.

Specifically, Agu and Nwankwo (2015) examined the influence of the insurance industry on increasing financial inclusion and economic development in Nigeria. The result shows that the insurance industry is affected by low patronage, an absence of trust by reducing premium it will aid economic development in Nigeria. Furthermore, the ability of insurance industry to meet people's demand by developing new insurance products that offer solutions to people's risk exposure increased the risk they faced. Nwani and Omankhanlen investigated the level of influence insurance income exerts on economic growth in Nigeria. The result shows

that life insurance premia and insurance investment are positively related to the growth of the Nigerian economy, while non-life premia are negatively related to the growth of the Nigerian economy (Nwani & Omankhanlen, 2019). More so, the simultaneous relationship between the banking industry, the insurance sector, and economic growth was investigated. The empirical result shows that the banking industry and insurance sector are significantly related to growth in an economy (Pradhan et al., 2017).

Insurance is a risk financing mechanism and part of a comprehensive disaster risk management strategy that plays an important role in disaster risk reduction (Alam et al., 2020). The study identified challenges for agriculture insurance in Malaysia as follows: lack of experience from international practices, limited products, lack of necessary data, limited financial capacity, and high administrative and operational costs. According to the findings, gross expenditure, insurance penetration, claims, and total insurance premiums (life and non-life) all contribute positively to economic growth. Similarly, Balcilar et al. (2018) investigated the role of the insurance and banking sectors in economic growth in Africa. The result shows that there is a complementarity effect between life and non-life insurance and the banking sector on economic growth and that they are positively related to economic growth.

The role of the institutional environment in the relationship between insurance and economic growth was investigated. The result shows that a significant inverse relationship existed between insurance and economic growth in the period of non-functional institutional environments, while the recovery of a healthy institutional environment gave birth to a negative, insignificant relationship between insurance and economic growth. The study concludes that a bad institutional environment could prevent the progress of the insurance industry (Lee et al., 2016). The impact of economic policy uncertainty on insurance premiums was investigated, and the findings revealed that economic policy uncertainty raises the premium on non-life insurance policies more than life assurance policies. Other variables increasing insurance premiums are education, financial development, institutional quality, and population growth, while inflation decreases insurance premiums (Balcilar et al., 2020). The nexus between the growth of the banking industry, the insurance industry, and economic growth was examined. The result shows that an increase in the banking industry and economic growth increase life and non-life premia, non-life insurance density, and whole insurance density (Pradhan et al., 2014). The influence of financial literacy, the sourcing of information, and advisory services on the patronage of life insurance policies in Taiwan was examined. The result shows that increasing levels of literacy, access to advisory services, and conversation with relatives all increase the patronage of life insurance policies (Lin et al., 2017). The effect of behavioral and socio-demographic indicators on the purchase of pension policies was examined. The result shows that insurance policy knowledge and behavioral factors contribute significantly to determining the decision to purchase assurance and pension policies (Dragos et al., 2020).

The best means of subsidizing agricultural insurance in an economy was investigated. The result shows that inadequate plans for subsidies, political problems, increasing disincentives, and environmental dilapidation negatively affect the attainment of the predetermined purpose of the subsidy (Hazell & Varangis, 2019). The potential influence of agricultural insurance policies on the mitigation of disaster risk was investigated, and the study recommends agricultural insurance as a tool to mitigate disaster risk in Malaysia (Alam et al., 2020). The nexus between insurance and banking activities was analyzed. The result shows that the assets of insurance companies increase the liquid liabilities and deposits in an economy but reduce the commercial banks' deposits and loans to private individuals (Chang, 2018). The findings suggest that regulation is negatively related to assurance policy, whereas early regulatory policy is positively related to insurance industry growth. Regulation is also negatively related to pension policy and the development of the sector at large. More so, capital was found to be negatively related to the insurance sector's growth.

3. MATERIALS AND METHODS

3.1 MODEL SPECIFICATION

This study adopts the growth model of Iqbal and Sami (2017). The growth model is dependent on financial inclusion variables such as the number of bank branches, ATM growth, and credit to the private sector. The growth model helps determine the level of growth when the financial inclusion variables increase or decrease, which is given as:

$$Y_t = \alpha_0 + \alpha_1 X1_t + \alpha_2 X2_t + \alpha_3 X3_t + \varepsilon_t \dots\dots\dots (1)$$

Where:

$X1_t$ represent Number of Bank Branches

$X2_t$ represent ATM growth rate

$X3_t$ represent Credit to private sector

The *a priori expectation* of the growth model is the $\alpha_1 > 0, \alpha_2 > 0$ and $\alpha_3 > 0$. It implied that an increase in the number of bank branches, ATM growth, and private-sector credit would boost economic growth.

3.2 DATA AND ESTIMATION TECHNIQUES

This study used annual time series data from 1981 to 2018, which was sourced from the Central Bank of Nigeria (CBN) statistical bulletin. Gross domestic product (GDP), total insurance premium (TIP), life insurance premium (LIP), non-life insurance premium (NLP), credit to the private sector (CPS), gross fixed capital formation (GFC), inflation (INF), and net national income per capita (NNI) were all used in this study. Data on GDP, TIP, LIP, NLP, CPS, and INF were obtained from the CBN bulletin, while data on GFC and NNI were obtained from the World Bank development indicator (WDI). This study employed the auto-regressive distributed lag (ARDL) method of estimation technique (Pesaran & Shin, 2012; Pesaran, Shin,

& Smith, 2001) in order to estimate the impact of financial inclusion on economic growth in Nigeria using Nigerian data. To achieve this, the ARDL framework is given as:

$$\Delta GDP_t = \alpha_0 + \sum_{i=1}^n \alpha_{1i} \Delta GDP_{t-1} + \sum_{i=1}^n \alpha_{2i} \Delta NLP_{t-1} + \sum_{i=1}^n \alpha_{3i} \Delta LIP_{t-1} + \sum_{i=1}^n \alpha_{4i} \Delta TIP_{t-1} + \sum_{i=1}^n \alpha_{5i} \Delta GFC_{t-1} + \sum_{i=1}^n \alpha_{6i} \Delta CPS_{t-1} + \sum_{i=1}^n \alpha_{7i} \Delta INF_{t-1} + \sum_{i=1}^n \alpha_{8i} \Delta NNI_{t-1} + \beta_1 GDP_{t-1} + \beta_2 NLP_{t-1} + \beta_3 LIP_{t-1} + \beta_4 TIP_{t-1} + \beta_5 GFC_{t-1} + \beta_6 CPS_{t-1} + \beta_7 INF_{t-1} + \beta_8 NNI_{t-1} + \mu_t, \dots\dots\dots (2)$$

Equation 2 below shows the short-term relationship

$$\Delta GDP_t = \alpha_0 + \sum_{i=1}^n \alpha_{1i} \Delta GDP_{t-1} + \sum_{i=1}^n \alpha_{2i} NLP_{t-1} + \sum_{i=1}^n \alpha_{3i} \Delta LIP_{t-1} + \sum_{i=1}^n \alpha_{4i} \Delta TIP_{t-1} + \sum_{i=1}^n \alpha_{5i} \Delta GFC_{t-1} + \sum_{i=1}^n \alpha_{6i} \Delta CPS_{t-1} + \sum_{i=1}^n \alpha_{7i} \Delta INF_{t-1} + \sum_{i=1}^n \alpha_{8i} \Delta NNI_{t-1} + \delta ECT_{t-1} + \varepsilon_t \dots\dots\dots (3)$$

Where:

Δ is the first difference operator

α_0 is the drift component, μ_t is the white noise term

$\alpha_1 - \alpha_8$ represent the error correction dynamic

$\beta_1 - \beta_8$ represents the long-run relationship

ECT is the error correction term

4. RESULTS AND DISCUSSION

This section consists of the situational analysis, the unit root test and the ARDL estimates. The situational analysis is presented in table 1.

Table 1: Situation of insurance premium and economic growth in Nigeria

Year	GDP Basic Prices (₦ Billion)	TIP (₦ Billion)	TIP as % of GDP	NLP (₦ Billion)	NLP as % of GDP	LIP (₦ Billion)	LIP as % of GDP
2009	44285.56	153.1271	0.428944	36.83333	0.345772	189.9605	0.083172
2010	54612.26	157.3368	0.366907	43.03917	0.288098	200.376	0.078809
2011	62980.4	175.7568	0.371152	57.99613	0.279066	233.7529	0.092086
2012	71713.94	193.4932	0.360324	64.90906	0.269813	258.4023	0.090511
2013	80092.56	196.0088	0.345262	80.52024	0.244728	276.529	0.100534
2014	89043.62	195.8909	0.316523	85.95258	0.219994	281.8434	0.096529
2015	94144.96	198.3892	0.307336	90.95232	0.210727	289.3415	0.096609
2016	101489.5	402.614	0.321328	124.5	0.396705	326.114	0.122673
2017	113711.6	210.7725	0.327003	161.0681	0.185357	371.8406	0.141646
2018	127762.5	321.232	0.305574	69.178	0.251429	390.409	0.054146

Source: CBN bulletin and Author's computation, 2021

Table 1 shows the situation of insurance premiums and their contribution to GDP from 2009 to 2018. Total insurance premiums attained their highest contribution to GDP in 2009 (0.428944) and their lowest value in 2018 (0.305574).

Non-life insurance premiums also attained their highest contribution in 2016 (0.396705) and the lowest value in 2017 (0.185357). Life insurance premiums also attained their highest value in 2017 (0.141646) but reduced drastically to attain their lowest figure in 2018 (0.054146). It is clear that both total insurance and life insurance premiums recorded their lowest values in 2018, which is worrisome as it adversely influences the level of financial exclusion. More so, non-life insurance premiums have been increasing at a decreasing rate from 2009 through 2015 but picked up in 2016 and decreased in 2017. Juxtaposing this evidence with India, which has a similar nominal GDP per capita to Nigeria (US\$2,049 for Nigeria in 2018 and US\$2,036 for India in 2018), India recorded a 3.69% insurance contribution to GDP, which is higher than the 0.31% recorded in Nigeria as of 2018. The result shows that the authorities need to pay close attention to the happenings in the insurance sector in order to redeem it and ensure its contribution to GDP is maintained at an increasing rate, which will foster growth in the economy.

Table 2: Unit Root Test: Augmented Dickey-Fuller test for unit root

Variables	Z(t) Test Statistic	Critical Value @ 5%	p-value for Z(t)	Critical Value @ 10%	Remark	Order of Integration
NLP	-0.619	-1.692	0.2702	-1.308	Non-stationary	I(1)
LIP	0.094	-1.692	0.5371	-1.308	Non-stationary	I(1)
TIP	-1.029	-1.692	0.1554	-1.308	Non-stationary	I(1)
GDP	-1.155	-1.692	0.1282	-1.308	Non-stationary	I(1)
GFC	-0.238	-1.692	0.4067	-1.308	Non-stationary	I(1)
CPS	-0.662	-1.692	0.2563	-1.308	Non-Stationary	I(1)
INF	-3.479	-1.692	0.0007	-1.308	Stationary	I(0)
NNI	-1.144	-1.692	0.1304	-1.308	Non-Stationary	I(1)

Source: Authors computation using Stata, 2021

The Augmented Dickey-Fuller (ADF) unit root test in Table 2 was used to ascertain the order of integration of the parameters. The fluctuation of the time-series data makes them unsteady, i.e., non-stationary. The ADF Test Statistics of NLP, LIP, TIP, GDP, GFC, CPS, and NNI are -0.619, 0.094, -1.155, -0.238, -0.662, and -1.144, respectively, are greater than the 5% and 10% critical values of -1.692 and -1.308. Thus, the alternative hypothesis of the presence of a unit root is accepted and the null hypothesis of no unit root is rejected. More so, the ADF statistics of INF is 3.479, which means the null hypothesis of no unit root is accepted, which means variable INF is stable.

In summary, the ADF test results revealed that all variables are non-stationary at level I(0), except for the inflation rate, which is stationary at levels I(0) using the 5% and 10% significance levels. The Auto-Regressive Distributed Lag (ARDL) model (Pesaran & Shin, 2012; Pesaran, Shin, & Smith, 2001) is the proper technique of analysis that allows the mixture of I(1) and I(0) stationary parameters.

Optimal Lag Length Selection

Identification of the appropriate lag length is imperative before conducting ARDL estimates. The optimal lag length for this study was selected using the Akaike Information Criterion (AIC), which is presented in Table 3.

Table 3: Optimal Lag

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-8.82648				3.7e-10	.989793	1.11227	1.34894
1	244.116	505.89	64	0.000	6.1e-15	-10.1245	-9.02218	-6.89219
2	338.214	188.2	64	0.000	2.1e-15	-11.8949	-9.81282	-5.78951
3	552.499	428.57*	64	0.000	3.6e-18*	-20.7352*	-17.6733*	-11.7566*

Source: Authors computation using Stata, 2021

The AIC selected a lag order length of three (3) for the model, which enabled and eased the estimation of the ARDL short and long-run estimates. The short- and long-run estimates are presented and explained in the subsequent tables.

The ARDL Bound Test

The Pesaran *et al.* (2001) bound test result helps to ascertain the existence of long-run associations among the parameters. The F-test of the bound test is used to determine the presence of cointegration among the variables. The null hypothesis of the bound test is that there is no cointegrating equation among the parameters, which means that the coefficients of the long run are all equal to zero. While the alternative hypothesis is that there is a cointegrating equation among the parameters, which means that the coefficients of the long run are not equal to zero. The hypotheses of the bound test are represented as:

$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$, i.e., there is no cointegration among the variables.

$H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq 0$, i.e., there is cointegration among the variables.

Table 4: ARDL Bounds Test

	[I0]	[I1]	[I0]	[I1]	[I0]	[I1]	[I0]	[I1]
F-Statistics	L1	L1	L05	L05	L025	L025	L01	L01
3.950	2.03	3.13	2.32	3.50	2.60	3.84	2.83	3.94

Source: Authors computation using Stata, 2021

The criteria for the rejection or acceptance of the bund test null hypothesis is based on the comparison between the F-statistic value of the bound test and the Pesaran critical value at traditional levels of significance.

Since the F-statistic of the model at 3.950 is higher than the upper bound critical value, we thus reject the null hypothesis and conclude that there is a long-run cointegrating equation among the variables. This result shows that the long-run relationship between the dependent variables and the explanatory variables can be estimated. The ARDL short-run estimates are presented in table 5.

Tables 5: Autoregressive Distributed Lag Short-run Estimates

ARDL (3,3,2,2,3,3,3,3) selected based on Akaike Information Criterion

Dependent variable is GDP

Variable	Coefficients.	Std. Err.	t	P-value
ECT(-1)	-1.775333	0.7091374	-2.50	0.044
D(GDP(-1))	-0.552518	0.3646639	-1.52	0.190
D(GDP(-2))	-0.9614128	0.28093	-3.42	0.019
D(NLP)	-0.1882472	0.1184509	-1.59	0.173
D(NLP(-1))	-0.0745091	0.0787708	-0.95	0.388
D(NLP(-2))	0.0878636	0.0860786	1.02	0.354
D(LIP(-1))	0.1218549	0.0897293	1.36	0.233
D(LIP(-2))	-0.0846055	0.0477463	-1.77	0.137
D(TIP(-1))	0.1651006	0.0680438	2.43	0.060
D(TIP(-2))	0.1376301	0.0711397	1.93	0.111
D(GFC)	0.0492809	0.1992315	0.25	0.814
D(GFC(-1))	-0.4889658	0.1841395	-2.66	0.045
D(GFC(-2))	0.1601169	0.1557917	1.03	0.351
D(CPS)	-0.2819816	0.3847073	-0.73	0.496
D(CPS(-1))	-0.3427542	0.1621587	-2.11	0.088
D(CPS(-2))	-0.2968876	0.1674788	-1.77	0.136
D(INF)	-0.0028272	0.0016383	-1.73	0.145
D(INF(-1))	-0.0018791	0.0016163	-1.16	0.297
D(INF(-2))	0.0008204	0.000591	1.39	0.224
D(NNI)	0.1289804	0.0866708	1.49	0.197
D(NNI(-1))	0.1262097	0.0805568	1.57	0.178
D(NNI(-2))	0.2958414	0.0975885	3.03	0.029
Cons	-4.875882	2.880069	-1.69	0.151
R-squared		0.9906		
Adj R-squared		0.9364		
Number of obs		35		
Durbin-Watson		2.238452		

Source: Authors computation using Stata, 2021

NB: The dependent variable is the GDP. The natural logarithm of variables NLP, LIP, TIP, GFC, CPS, and NNI were used.

The short-run result from table 5 comprises the error correction term (ECT) and the short-run estimates. The error correction term is -1.775333, which is negative and significant at a 5% level, which is in line with the *a priori expectation*. The estimate of the ECT implies that the speed of adjustment is high, which means that the speed of adjustment towards long-run equilibrium is 177.53 per cent. This means long-run equilibrium can be achieved by the system at a speed of 177.53 per cent.

The short-run result further revealed that the first and second period lags of GDP are negatively related to GDP. Non-life insurance premiums and one period lag of non-life insurance premiums are negatively related to GDP, while the second period lag of non-life insurance premiums is positively related to GDP and is all insignificant. The first period lag of life insurance premiums is positively related to

GDP, while the second period lag of life insurance premiums is negatively related to GDP. They are both insignificant. The first and second period lags of total insurance premiums are positively related to GDP but are insignificant. Gross fixed capital formation and the second period lag of gross fixed capital formation are positively related to GDP but insignificant, while the one period lag of gross fixed capital formation is negative and significantly related to GDP. The first and second period lags of commercial bank credit to the private sector are negatively related to GDP but are all insignificant. Inflation and one period lag of inflation are negatively related to GDP, while the second period lag of inflation is positively related to GDP and is all insignificant. Net national income per capita and one period lag of net national income per capita are positive and insignificantly related to GDP, while the second period lag of net national income per capita is positive and significantly related to GDP.

The Durbin-Watson statistics is approximately 2, which shows that the model is free from serial correlation problems, which is also confirmed by the Breusch-Godfrey LM test result of no serial correlation in the model. The R-squared value indicates that the error correction model explained 99 percent of the variation in GDP. The long-run coefficient estimates are depicted in table 6.

Table 6: *Autoregressive Distributed Lag Long-run Estimates*
 ARDL (3,3,2,2,3,3,3,3) selected based on Akaike Information Criterion
 Dependent variable is GDP

Variable	Coefficients.	Std. Err.	t	P-value
NLP	0.0558843	0.0963078	0.58	0.587
LIP	-0.0835503	0.0248873	-3.36	0.020
TIP	0.0277755	0.0594318	0.47	0.660
GFC	0.3950481	0.0798584	4.95	0.004
CPS	0.5525171	0.0946846	5.84	0.002
INF	0.0017457	0.0008332	2.10	0.090
NNI	0.0497844	0.0205664	2.42	0.060

Source: Authors computation using Stata, 2021

NB: *The dependent variable is the GDP. The natural logarithm of variables NLP, LIP, TIP, GFC, CPS, and NNI were used.*

The ARDL long-run result revealed that non-life insurance premiums are positive but insignificantly related to GDP, which implies that a unit increase in non-life insurance premiums increases economic growth by 0.0558843. Life insurance premiums are negatively and significantly related to GDP, implying that every unit increase in life insurance premium results in a 0.0835503 decrease in economic growth. The total insurance premium is positive but insignificantly related to GDP, which implies that a unit increase in total insurance premium increases economic growth by 0.0277755. Gross fixed capital formation is positive and significantly related to GDP, which implies that a unit increase in gross fixed capital formation promotes economic growth by 0.3950481. Commercial bank credit to the private sector is positive and significantly related to economic growth, which implies that a

unit increase in commercial bank credit to the private sector promotes economic growth by 0.5525171. Surprisingly, inflation is positive and significantly related to GDP, which means that a rate increase in inflation promotes economic growth by 0.17457 percent. Net national income per-capita is positive and significantly related to GDP, which implies that a unit increase in the net national income per-capita promotes economic growth by 0.0497844.

Discussion of findings

The empirical result revealed that non-life insurance premiums are positively related to economic growth, which is in line with the empirical finding of (Apergis & Poufinas, 2020; Balcilar et al., 2018) and the *a priori expectation* but contradicts the result of (Nwani & Omankhanlen, 2019). Life insurance premiums are negatively related to economic growth, which is contrary to the empirical findings of (Apergis & Poufinas, 2020; Nwani & Omankhanlen, 2019) and the *a priori expectation of a positive contribution*. The total insurance premium is positively related to economic growth, which is in line with the empirical finding of (Apergis & Poufinas, 2020; Balcilar et al., 2018) and the *a priori expectation*.

Commercial bank credit to the private sector is positively related to economic growth, which is in line with the empirical findings of (Akanro, 2016; Iqbal & Sami, 2017) and the *a priori expectation* of this study. Non-life insurance premiums and total insurance premiums make insignificant contributions to economic growth. However, life insurance premiums have an inversely significant impact on economic growth, which could be disastrous for the Nigerian economy. Additionally, the result revealed that credit to the private sector as one of the financial inclusion components contributes positively with a better and significant coefficient of 0.5525171 on economic growth in Nigeria compared with insurance premium contribution. This is simply an indication that insurance, as one of the financial inclusion components, has not been contributing significantly to economic growth in Nigeria compared with credit to the private sector.

In view of the above, our study discovered that life insurance premiums have a significant role in economic growth in Nigeria, while non-life insurance premiums and the total insurance premium have no significant contribution to economic growth in Nigeria. The role of insurance premiums on economic growth in Nigeria is, however, imperative in attaining an inclusive economy.

Table 7: Summary of Diagnostic Tests for the Model

TEST	Chi2	Prob (chi2)
LM test for autoregressive conditional heteroskedasticity (ARCH)	0.089	0.7654
Breusch-Godfrey LM test for autocorrelation	1.988	0.1586
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	2.76	0.0968
TEST	F(3, 21)	Prob > F
Ramsey RESET test using powers of the fitted values of GDP	0.84	0.4888

Source: Authors computation using Stata, 2021

The test result of heteroskedasticity shows that the model is homoscedastic which means the model has no heteroskedasticity problem. The Breusch-Godfrey LM test result which is insignificant simply means that there is no serial correlation among the variables which has been confirmed by the Durbin-Watson value of 2.238452 in table 5. Mores so, the absence of specification error was confirmed.

5. SUMMARY AND CONCLUSION

The study investigated the influence of insurance and financial inclusion on economic growth in Nigeria using the ARDL estimation technique. The empirical results revealed that total insurance premiums and non-life insurance premiums are positively related to economic growth, while life insurance premiums are negatively related to economic growth. Credit, on the other hand, must go to the private sector, which is another component of financial inclusion and contributes significantly to Nigeria's economic growth. The better performance of credit in the private sector could be due to the greater attention given to savings and credit at the expense of other financial inclusion components.

It is, however, important to give greater attention to other financial inclusion components like insurance to harness the targeted level of financial inclusion in Nigeria as achieved by a developing nation like India, whose GDP is like Nigeria's. The authorities should create awareness of insurance policies among Nigerians and innovate new policies that cater for the needs of the least fortunate citizens in Nigeria, which helps to minimize the risk exposure of households, corporate organizations, the government, and the economy at large. More so, an increase in the patronage of the insurance industry will generate higher revenue for Nigeria. Additionally, policymakers should also stress the need for and benefits of insurance policies to the populace while reviewing the performance of each component of the financial system.

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